

Printing date: 06.10.2020

## SAFETY DATA SHEET

ACCORDING TO EC-REGULATIONS 1907/2006 (REACH),

1272/2008 (CLP) & 2015/830

Version No: 8

Revision: 06.10.2020

## SECTION 1: IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND OF THE COMPANY/UNDERTAKING

SECTION I. IDENTIFICATION OF	THE CONSTANCE/MIXTORE AND OF THE COMPANY AND
1.1 Product identifier	
Product Name	Melamine
Chemical Name	1,3,5-triazine-2,4,6-triamine
Chemical Formula	$C_3H_6N_6$
CAS No.	108-78-1
EC No.	203-615-4
REACH Registration No.	01-2119485947-16-0017
1.2. Relevant identified uses of the sub	stance or mixture and uses advised against
Identified Use(s)	Melamine ( $C_3H_6N_6$ ) is a product in form of white powder used for the production
	of a wide range of synthetic resins.
	Formulation or re-packing
	• Use as intermediate for resins (reacted melamine)
	• Use as additive in foams
	• Use as additive in intumescent coatings
	• PU foams - Workers (industrial)
	Intumescent coatings - Workers (industrial)
	Intumescent coatings - Professional Workers
Uses Advised Against	Addition to food or feed products.
1.3 Details of the supplier of the safety	v data sheet
Company Identification	Qatar Melamine Co
Address	P.O. Box 50001, Mesaieed,
	Qatar.
Telephone	(+974) 44228888
E-mail	mktg@qafco.com.qa
Only representative of a non-Community	
Company Identification	MUNTAJAT B.V.
Address	Prinses Margrietplantsoen 78-A
Address	2595 BR, La Haye
	Pays Bas
Talanhana	+31(0)70 219 7000
Telephone E-mail	
Website	REACH@muntajatby.com
website	www.muntajatbv.com
1.4 Emergency telephone number	. 44 (0) 111
National Poisons Information Service	+44 (0) 111
(Birmingham Centre)	
For Spill, Leak, Fire, Exposure or	Within USA and Canada: 1-800-424-9300
Accident, Call CHEMTREC Day or	Outside USA and Canada: +1 703-741-5970 and +1-703-527-3887 (collect calls
Night	accepted)
SECTION 2: HAZARDS IDENTIFIC	ATION
<b>2.1 Classification of the substance or</b> Regulation (EC) No. 1272/2008 (CLP)	
2.2 Label elements	
	According to Regulation (EC) No. 1272/2008 (CLP)
Product Name	Melamine.

Hazard Pictogram(s)



Warning

Signal Word(s)

Hazard Statement(s)

H361f: Suspected of damaging fertility.



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Precautionary Statement(s)	P201: Obtain special instructions before use.
	P202: Do not handle until all safety precautions have been read and understood.
	P280: Wear protective gloves/protective clothing/eye protection/face protection.
	P308+P313: IF exposed or concerned: Get medical advice/attention.
	P405: Store locked up.
	P501: Dispose of contents in accordance with local, state or national legislation.
2.3 Other hazards	
	May be harmful if swallowed.
	Dust may have irritant effect on skin, eyes and air passages.

### 2.4 Additional Information

None.

### SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS

3.1 Substances					
HAZARDOUS	CAS No.	EC No.	%W/W	Hazard Statement(s)	Hazard Pictogram(s)
INGREDIENT(S)					
Melamine	108-78-1	203-615-4	≥99	Repr. 2 H361f	GHS08
		01-2119485947-16-0017			

#### 3.2 Mixtures

Not applicable.

4.1 Description of first aid measures	
Inhalation	If breathing is difficult, remove victim to fresh air and keep at rest in a position comfortable for breathing. If symptoms persist, obtain medical attention.
Skin Contact	After contact with skin, wash immediately with plenty of soap and water.
Eye Contact	First rinse with plenty of water for several minutes (remove contact lenses if easily possible), then take to a doctor.
Ingestion	If swallowed, rinse mouth with water (only if the person is conscious).

#### 4.2 Most important symptoms and effects, both acute and delayed

Dust may have irritant effect on skin, eyes and air passages.

#### 4.3 Indication of any immediate medical attention and special treatment needed

IF exposed or concerned: Get medical advice/attention.

5.1 Extinguishing media	
Suitable extinguishing media	Extinguish with carbon dioxide, dry chemical, foam or waterspray.
Unsuitable extinguishing media	Water with full jet.
5.2 Special hazards arising from t	he substance or mixture
	Decomposes in a fire giving off toxic fumes: Carbon monoxide, Carbon dioxide,
	Oxides of nitrogen. Ammonia is released when melamine is heated above 500°C
5.3 Advice for firefighters	-
5	Fire fighters should wear complete protective clothing including self-contained
	breathing apparatus.
SECTION 6: ACCIDENTAL REI	LEASE MEASURES

Ensure adequate ventilation. Ensure suitable personal protection (including respiratory protection) during removal of spillages. Avoid generation of dust. Avoid breathing dust.

#### 6.2 Environmental precautions

Do not allow to enter drains, sewers or watercourses.



ACCORDING TO EC-REGULATIONS 1907/2006 (REACH), 1272/2008 (CLP) & 2015/830

Printing date: 06.10.2020 Revision: 06.10.2020 Version No: 8 6.3 Methods and material for containment and cleaning up Sweep spilled substances into containers if appropriate moisten first to prevent dusting. Carefully collect remainder. Do not wash spillage with water as area will be slippery and will block sewage. 6.4 Reference to other sections See Also Section 8, 13. **SECTION 7: HANDLING AND STORAGE** 7.1 Precautions for safe handling Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Provide adequate ventilation. Avoid generation of dust. Avoid breathing dust. Wear protective gloves/protective clothing/eye protection/face protection. Wash hands and exposed skin thoroughly after handling. 7.2 Conditions for safe storage, including any incompatibilities Keep from direct sunlight. Store locked up. Store in dry place. Keep container tightly closed. Storage temperature Ambient. Storage life Stable under normal conditions. Incompatible materials Strongly acidic. Strong oxidising agents. 7.3 Specific end use(s) Formulation or re-packing ٠ Use as intermediate for resins (reacted melamine) Use as additive in foams • Use as additive in intumescent coatings • PU foams - Workers (industrial) • Intumescent coatings - Workers (industrial) Intumescent coatings - Professional Workers ٠

#### SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

#### 8.1 Control parameters

8.1.1 Occupational Exposure Limits

SUBSTANCE	CAS No.	LTEL (8 hr	LTEL (8 hr	STEL (ppm)	STEL (mg/m <sup>3</sup> )	Note
		TWA ppm)	TWA mg/m <sup>3</sup> )			
Melamine	108-78-1					None assigned

Source: UK Workplace Exposure Limits EH40/2005 (Fourth edition, published 2020), United Kingdom

8.1.2 Biological limit value Not established.

8.1.3 PNECs and DNELs

DNEL / DMEL	Oral	Inhalation	Dermal
Industry - Long Term - Local effects			
Industry - Long Term - Systemic effects		8.3 mg/m <sup>3</sup>	11.8 mg/kg bw/day
Industry - Short term - Local effects			
Industry - Short term - Systemic effects		82.3 mg/m <sup>3</sup>	117 mg/kg bw/day
Consumer - Long Term - Local effects			
Consumer - Long Term - Systemic effects	0.42 mg/kg bw/day	1.5 mg/m <sup>3</sup>	4.2 mg/kg bw/day
Consumer - Short term - Local effects			
Consumer - Short term - Systemic effects			

Environment	PNEC
Aquatic Compartment (including sediment)	Fresh water: 0.51 mg/l
	Intermittent release: 2 mg/l
	Sea water: 0.051 mg/l
	Fresh water (Sediment): 2.524 mg/kg dw
	Sea water (Sediment): 0.252 mg/kg dw
Terrestrial Compartment	Sewage Treatment Plant: 200 mg/l



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Atmospheric (	Compartment	Soil: 0.206 mg/kg dw
8.2 Exposure		
8.2.1. Approp	riate engineering controls	Ensure adequate ventilation.
8.2.2. Persona	al protection equipment	
	Eye Protection	Wear protective eyewear (goggles, face shield, or safety glasses).
	Skin protection	Wear protective gloves. Breakthrough time of the glove material: refer to the information provided by the gloves' producer.
	Respiratory protection	An approved dust mask should be worn if dust is generated during handling.
	Thermal hazards	Not applicable.

8.2.3. Environmental Exposure Controls Do not allow to enter drains, sewers or watercourses.

### SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

#### 9.1 Information on basic physical and chemical properties

Appearance	Powder.
	Colour : White.
Odour	Odourless.
Odour threshold	Not established.
pН	7.5-8.5 (aqueous solution), 20 g/l @ 20°C
Melting point/freezing point	354°C (Doesn't freeze, solidifies)
Initial boiling point and boiling range	>354°C (Sublimation)
Flash Point	Not applicable.
Evaporation rate	Not applicable.
Flammability (solid, gas)	Non-flammable.
Upper/lower flammability or explosive	Not available.
limits	
Vapour pressure	4.7 x 1.0E-8 Pa @ 20°C
Vapour density	Not applicable.
Density (g/ml)	1570 kg/m <sup>3</sup>
Relative density	1.57
Solubility(ies)	Solubility (Water) : Slightly soluble: 3.48 g/l @ 20°C
	Solubility (Other): Very slightly soluble: Acetone (0.3 g/l), Ethanol (0.6 g/l),
	Dimethylformamide (0.1 g/l), Soluble: Ethyl cellosolve (11.2 g/l) @ 30°C
Partition coefficient: n-octanol/water	-1.22 @ 20°C
Auto-ignition temperature	>500°C
Decomposition Temperature (°C)	>354°C
Viscosity	Not applicable.
Explosive properties	Not explosive.
Oxidising properties	Not oxidising.
9.2 Other information	
Dissociation constant	6.7 pKa @ 20°C
Molecular weight	126.12 g/mol
OF OPTION 10. OP A DIL 1737 AND DE	

## SECTION 10: STABILITY AND REACTIVITY

#### 10.1 Reactivity

Stable under normal conditions.

10.2 Chemical Stability



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	Stable under normal conditions.	
10.2 Dessibility of beyond one and	- <b>4</b>	
10.3 Possibility of hazardous read	No hazardous reactions known if used for its intend	ed purpose.
10.4 Conditions to avoid	Keep away from moisture.	
<b>10.5</b> Incompatible materials	Strongly acidic. Strong oxidising agents.	
10.6 Hazardous decomposition p	roducts No hazardous decomposition products known.	
SECTION 11: TOXICOLOGICA	AL INFORMATION	
<b>11.1 Information on toxicological</b> Acute toxicity - Ingestion	May be harmful if swallowed.	
	LD50 (rat): 3161 mg/kg	
Acute toxicity - Skin Contact	Low acute toxicity.	
Acute toxicity - Inhalation	Low acute toxicity. LC50 (rat): >5190 mg/m <sup>3</sup>	
Skin corrosion/irritation	Not classified.	
Serious eye damage/irritation	Not classified.	
Skin sensitization data	It is not a skin sensitiser.	
Respiratory sensitization data	Not classified.	
Germ cell mutagenicity Carcinogenicity	There is no evidence of mutagenic potential. Not classifiable as to its carcinogenicity to humans.	
Caremogementy	LOAEL (oral): 126 mg/kg bw/day (chronic, rat, blac	lder).
Reproductive toxicity	<ul> <li>Statistically significant increases in the incidence of combined incidences of transitional-cell carcinoma a bladder were observed in male rats exposed to 4500 bw/day), but not when exposed to 2250 ppm melam urinary bladder stones were observed in male rats th carcinomas. Female rats did not develop tumours ev ppm. No neoplastic findings related to treatment wermice. Not proven for humans.</li> <li>Suspected of damaging fertility in male rats.</li> <li>NOAEL (oral): 89 mg/kg bw/day (subchronic, 168 H Adverse effects on the male reproductive system we performed according to OECD TG 443 in rats, follo number TPE-D-2114373433-50-01. Tubular degene observed with related minimal cellular debris in the In addition, an increase in sperm abnormalities (deta the F0 and F1 males.</li> <li>Not alorgified.</li> </ul>	and papilloma in the urinary ppm melamine (ca. 263 mg/kg ine. With one exception, at had transitional-cell en when exposed up to 9000 re observed in male or female nours/week rat). re detected in an EOGRTS wing the ECHA decision eration/atrophy in the testis was epididymis in F0 and F1 males.
STOT - single exposure	Not classified.	
STOT - repeated exposure Aspiration hazard	Not classified. None anticipated.	
-	rone anterpacet.	
11.2 Other information	Dust may have irritant effect on skin, eyes and air p	assages.
SECTION 12: ECOLOGICAL IN	NFORMATION	
12.1 Toxicity		
A	Low toxicity to aquatic organisms.	
Acute Chronic	LC50 (Daphnia magna): 200 mg/l	1 mg/l
Chronic	NOEC (Fathead minnow (Pimephales promelas)): 5 NOEC (Daphnia magna): 11 mg/l	.1 1119/1
Algae	EC50 Fresh water: 325 mg/l	

12.2 Persistence and degradability

This substance is not readily biodegradable. Not expected to be inherently

NOEC Fresh water: 98 mg/l



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 biodegradable.

12.3 Bioaccumulative potential	The substance has no potential for bioaccumulation. Bioconcentration factor (BCF): 3.8 L/kg ww		
12.4 Mobility in soil	The substance is predicted to have moderate mobility in soil.		
12.5 Results of PBT and vPvB assess	ment Not classified as PBT or vPvB.		
12.6 Other adverse effects	Not known.		
SECTION 13: DISPOSAL CONSID	ERATIONS		
13.1 Waste treatment methods	Dispose of empty containers and wastes safely. Recover or recycle if possible.		
13.2 Additional Information	Disposal should be in accordance with local, state or national legislation.		
SECTION 14: TRANSPORT INFOR	RMATION		
Not classified as hazardous for trans	port.		
14.1 UN number	Not applicable		
14.2 UN proper shipping name	Not applicable		
14.3 Transport hazard class(es)	Not applicable		
14.4 Packing group	Not applicable		
14.5 Environmental hazards	Not classified as a Marine Pollutant.		
14.6 Special precautions for user	Not known		
14.7 Transport in bulk according to	Annex II of Marpol and the IBC Code		

14.7 Transport in bulk according to Annex II of Marpol and the IBC Code Not known

### **SECTION 15: REGULATORY INFORMATION**

15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture European Regulations - Authorisations and/or Restrictions On Use Candidate List of Substances of Very Not listed High Concern for Authorisation REACH: ANNEX XIV list of substances Not listed subject to authorisation REACH: Annex XVII Restrictions on Not listed the manufacture, placing on the market and use of certain dangerous substances, mixtures and articles Community Rolling Action Plan Not listed (CoRAP) Regulation (EC) N° 850/2004 of the Not listed European Parliament and of the Council



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on persistent organic pollutants Regulation (EC) N° 1005/2009 on Not listed substances that deplete the ozone layer Regulation (EU) N° 649/2012 of the European Parliament and of the Council concerning the export and import of hazardous chemicals

#### National regulations

Inventory Status

Listed in: Australia, Canada (DSL), China, Japan, Korea, Taiwan, New Zealand (HSNO) – HSNO Approval: HSR002503, New Zealand (NZIoC), Philippines.

15.2 Chemical Safety Assessment

A REACH chemical safety assessment has been carried out. **SECTION 16: OTHER INFORMATION** 1-16 The following sections contain revisions or new statements: LEGEND Hazard Pictogram(s) Hazard classification Repr. 2 : Reproductive toxicity, Category 2 Hazard Statement(s) H361f: Suspected of damaging fertility. Precautionary Statement(s) P201: Obtain special instructions before use. P202: Do not handle until all safety precautions have been read and understood. P280: Wear protective gloves/protective clothing/eye protection/face protection. P308+P313: IF exposed or concerned: Get medical advice/attention. P405: Store locked up. P501: Dispose of contents in accordance with local, state or national legislation. Acronyms CAS : Chemical Abstracts Service CLP : Regulation (EC) No 1272/2008 on classification, labelling and packaging of substances and mixtures DNEL : Derived No Effect Level EC : European Community LTEL : Long term exposure limit PBT : Persistent, Bioaccumulative and Toxic PNEC : Predicted No Effect Concentration REACH : Registration, Evaluation, Authorisation and Restriction of Chemicals STEL : Short term exposure limit STOT : Specific Target Organ Toxicity vPvB : very Persistent and very Bioaccumulative Information contained in this publication or as otherwise supplied to Users is Disclaimers believed to be accurate and is given in good faith, but it is for the Users to satisfy themselves of the suitability of the product for their own particular purpose. Qatar Melamine Co gives no warranty as to the fitness of the product for any particular purpose and any implied warranty or condition (statutory or otherwise) is excluded except to the extent that exclusion is prevented by law. Qatar Melamine Co accepts no liability for loss or damage (other than that arising from death or personal injury caused by defective product, if proved), resulting from reliance on this information. Freedom under Patents, Copyright and Designs cannot be assumed.



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Melamine

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Melamine

## 1. Exposure Scenario 1: Formulation or re-packing - Formulation or re-packaging

I.	•	Formulation or re-packing - Formulation or re-packaging		
SECTI	UN 1:	Title of exposure scenario		
<u>a</u> . •		Formulation or re-packaging		
	_	ng environmental exposure		
CS1	Formulation or re-packa	6.6	ERC2	
	outing scenario controllin			
CS2		refinery in closed continuous process with occasional processes with equivalent containment conditions	PROC2	
CS3		tion in the chemical industry in closed batch processes with posure or processes with equivalent containment conditions	PROC3	
CS4	Chemical production wh	here opportunity for exposure arises	PROC4	
CS5	Mixing or blending in b	atch processes	PROC5	
CS6	Transfer of substance or facilities	mixture (charging and discharging) at non-dedicated	PROC8a	
CS7	Transfer of substance or	mixture (charging and discharging) at dedicated facilities	PROC8b	
CS8	Transfer of substance or including weighing)	mixture into small containers (dedicated filling line,	PROC9	
CS9	Tabletting, compression	, extrusion, pelletisation, granulation	PROC14	
CS10	Use as laboratory reagen	nt	PROC15	
CS11	Hand-mixing with intim	ate contact and only PPE available	PROC19	
CS12	Manual maintenance (cl	eaning and repair) of machinery	PROC28	
SECTI	ON 2:	Conditions of use	4	
2.1		<b>Contributing scenario controlling environmental exposure:</b> 1.1 Formulation or re-packaging (ERC 2)		
Amoun	t used, frequency and du	uration of use (or from service life)		
		vant for the assessment as scenario specific releases are estimate evant for the assessment as scenario specific releases are estimated.		
Conditio	ons and measures related t	to biological sewage treatment plant		
Dischar	cal STP: Standard [Effecti ge rate of STP: >= 2E3 m tion of the STP sludge on	3/day		
Other g	given operational conditi	ons affecting environmental exposure		
Receivi	ng surface water flow: >=	1.8E4 m3/day		
1.2 Chemical product		<b>Contributing scenario controlling worker exposure:</b> 1.2 Chemical production or refinery in closed continuous pro controlled exposure or processes with equivalent containmen		
Product characteristics				
		mixture/article: <= 100 % :: Solid (medium dusty form)		
Freque	ncy and duration of use			
Duration of activity: <= 8 h/day				
Technic	cal conditions and measu	ires to control dispersion from source towards the worker		
General ventilation: Basic general ventilation (1-3 air changes per hour) [Effectiveness, Inhalation: 0%] Occupational Health and Safety Management System: Advanced Local exhaust ventilation: No [Effectiveness, Inhalation: 0%, Dermal: 0%]				
Conditi	ions and measures relate	d to personal protection, hygiene and health evaluation		
Respira	tory protection: No [Effec protection: No [Effective	tiveness, Inhalation: 0%]		



Other given operational conditi	ons affecting workers exposure		
Place of use: Indoor			
Operating temperature: <= 40 °C			
2.3	<b>Contributing scenario controlling worker exposure:</b> 1.3 Manufacture or formulation in the chemical industry in closed batch processes with occasional controlled exposure or processes with equivalent containment conditions (PROC 3)		
Product characteristics			
Percentage (w/w) of substance in Physical form of the used product			
Frequency and duration of use			
Duration of activity: <= 8 h/day			
Technical conditions and measu	res to control dispersion from source towards the worker		
Occupational Health and Safety M	l ventilation (1-3 air changes per hour) [Effectiveness, Inhalation: 0%] Management System: Advanced fectiveness, Inhalation: 0%, Dermal: 0%]		
Conditions and measures relate	d to personal protection, hygiene and health evaluation		
Respiratory protection: No [Effect Dermal protection: No [Effective			
Other given operational conditi	ons affecting workers exposure		
Place of use: Indoor Operating temperature: <= 40 °C			
2.4	<b>Contributing scenario controlling worker exposure:</b> 1.4 Chemical production where opportunity for exposure arises (PROC 4)		
Product characteristics			
Percentage (w/w) of substance in Physical form of the used product			
Frequency and duration of use			
Duration of activity: <= 8 h/day			
Technical conditions and measu	res to control dispersion from source towards the worker		
Occupational Health and Safety M	l ventilation (1-3 air changes per hour) [Effectiveness, Inhalation: 0%] Management System: Advanced fectiveness, Inhalation: 0%, Dermal: 0%]		
Conditions and measures relate	d to personal protection, hygiene and health evaluation		
Respiratory protection: No [Effect Dermal protection: No [Effective			
Other given operational conditi	Other given operational conditions affecting workers exposure		
Place of use: Indoor Operating temperature: <= 40 °C			
2.5	Contributing scenario controlling worker exposure: 1.5 Mixing or blending in batch processes (PROC 5)		
Product characteristics			
Percentage (w/w) of substance in mixture/article: <= 100 % Physical form of the used product: Solid (medium dusty form)			
Frequency and duration of use			
Duration of activity: <= 8 h/day			
Technical conditions and measures to control dispersion from source towards the worker			
General ventilation: Basic genera Occupational Health and Safety M	l ventilation (1-3 air changes per hour) [Effectiveness, Inhalation: 0%] Management System: Advanced		



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Local exhaust ventilation: No [Ef	ffectiveness, Inhalation: 0%, Dermal: 0%]				
Conditions and measures related to personal protection, hygiene and health evaluation					
Respiratory protection: No [Effectiveness, Inhalation: 0%] Dermal protection: Yes (Chemically resistant gloves conforming to EN374) and (other) appropriate dermal protection [Effectiveness, Dermal: 80%]					
Other given operational conditional	ions affecting workers exposure				
Place of use: Indoor Operating temperature: <= 40 °C					
2.6	<b>Contributing scenario controlling worker exposure:</b> 1.6 Transfer of substance or mixture (charging and discharging) at non-dedicated facilities (PROC 8a)				
Product characteristics					
Percentage (w/w) of substance in Physical form of the used produc					
Frequency and duration of use					
Duration of activity: <= 8 h/day					
Technical conditions and measured	ares to control dispersion from source towards the worker				
Occupational Health and Safety M	l ventilation (1-3 air changes per hour) [Effectiveness, Inhalation: 0%] Management System: Advanced ffectiveness, Inhalation: 0%, Dermal: 0%]				
Conditions and measures relate	ed to personal protection, hygiene and health evaluation				
	Respiratory protection: No [Effectiveness, Inhalation: 0%] Dermal protection: Yes (Chemically resistant gloves conforming to EN374) and (other) appropriate dermal protection [Effectiveness, Dermal: 80%]				
Other given operational condition	ions affecting workers exposure				
Place of use: Indoor Operating temperature: <= 40 °C					
2.7	<b>Contributing scenario controlling worker exposure:</b> 1.7 Transfer of substance or mixture (charging and discharging) at dedicated facilities (PROC 8b)				
Product characteristics					
Percentage (w/w) of substance in Physical form of the used produc					
Frequency and duration of use					
Duration of activity: <= 8 h/day					
Technical conditions and measured	ures to control dispersion from source towards the worker				
Occupational Health and Safety M	l ventilation (1-3 air changes per hour) [Effectiveness, Inhalation: 0%] Management System: Advanced ffectiveness, Inhalation: 0%, Dermal: 0%]				
Conditions and measures relate	ed to personal protection, hygiene and health evaluation				
Respiratory protection: No [Effect Dermal protection: Yes (Chemica [Effectiveness, Dermal: 80%]	ctiveness, Inhalation: 0%] ally resistant gloves conforming to EN374) and (other) appropriate dermal protection				
	ions affecting workers exposure				
Place of use: Indoor Operating temperature: <= 40 °C					
2.8	<b>Contributing scenario controlling worker exposure:</b> 1.8 Transfer of substance or mixture into small containers (dedicated filling line, including weighing) (PROC 9)				
Product characteristics					



mixture/article: <= 100 %				
Percentage (w/w) of substance in mixture/article: <= 100 % Physical form of the used product: Solid (medium dusty form)				
res to control dispersion from source towards the worker				
l ventilation (1-3 air changes per hour) [Effectiveness, Inhalation: 0%] Aanagement System: Advanced fectiveness, Inhalation: 0%, Dermal: 0%]				
d to personal protection, hygiene and health evaluation				
tiveness, Inhalation: 0%] Ily resistant gloves conforming to EN374) and (other) appropriate dermal protection				
ons affecting workers exposure				
Contributing scenario controlling worker exposure: 1.9 Tabletting, compression, extrusion, pelletisation, granulation (PROC 14)				
mixture/article: <= 100 % :: Solid (medium dusty form)				
ires to control dispersion from source towards the worker				
General ventilation: Basic general ventilation (1-3 air changes per hour) [Effectiveness, Inhalation: 0%] Occupational Health and Safety Management System: Advanced Local exhaust ventilation: No [Effectiveness, Inhalation: 0%, Dermal: 0%]				
d to personal protection, hygiene and health evaluation				
tiveness, Inhalation: 0%] ness, Dermal: 0%]				
Contributing scenario controlling worker exposure: 1.10 Use as laboratory reagent (PROC 15)				
mixture/article: <= 100 % :: Solid (medium dusty form)				
Frequency and duration of use				
Duration of activity: <= 8 h/day				
Technical conditions and measures to control dispersion from source towards the worker				
General ventilation: Basic general ventilation (1-3 air changes per hour) [Effectiveness, Inhalation: 0%] Occupational Health and Safety Management System: Advanced Local exhaust ventilation: No [Effectiveness, Inhalation: 0%, Dermal: 0%]				
Conditions and measures related to personal protection, hygiene and health evaluation				
Respiratory protection: No [Effectiveness, Inhalation: 0%] Dermal protection: No [Effectiveness, Dermal: 0%]				
Contributing scenario controlling worker exposure:           1.11 Hand-mixing with intimate contact and only PPE available (PROC 19)				
Product characteristics				



Drugical form of the used product:	Physical form of the used product: Solid (medium dusty form)				
Frequency and duration of use	Solia (mealum au	sty lolli)			
Duration of activity: <= 8 h/day					
Technical conditions and measure	es to control disn	ersion from source toward	s the work	er	
General ventilation: Basic general v Occupational Health and Safety Ma Local exhaust ventilation: No [Effe	ventilation (1-3 ain magement System	r changes per hour) [Effectiv n: Advanced			
Conditions and measures related	to personal proto	ection, hygiene and health	evaluation		
Respiratory protection: No [Effecti Dermal protection: Yes (Chemicall appropriate dermal protection [Effe	y resistant gloves	conforming to EN374 with	specific act	ivity training) and (other)	
Other given operational condition	ns affecting work	ers exposure			
Place of use: Indoor Operating temperature: <= 40 °C					
		nario controlling worker e tenance (cleaning and repair		nery (PROC 28)	
Product characteristics					
Percentage (w/w) of substance in m Physical form of the used product: S					
Frequency and duration of use					
Duration of activity: <= 8 h/day					
Technical conditions and measure	es to control disp	ersion from source toward	ls the work	ter	
General ventilation: Basic general ventilation (1-3 air changes per hour) [Effectiveness, Inhalation: 0%] Occupational Health and Safety Management System: Advanced Local exhaust ventilation: No [Effectiveness, Inhalation: 0%, Dermal: 0%]					
Conditions and measures related	to personal proto	ection, hygiene and health	evaluation		
Respiratory protection: No [Effectiveness, Inhalation: 0%] Dermal protection: Yes (Chemically resistant gloves conforming to EN374) and (other) appropriate dermal protection [Effectiveness, Dermal: 80%]					
Other given operational condition	ns affecting work	ers exposure			
Place of use: Indoor Operating temperature: <= 40 °C					
SECTION 3:	1.13 Exposure	estimation			
3.1. Environment	-				
Release	Release estin	mation method	Explanat	ions	
Water	Estimated rel	lease rate	Local rele	ease rate: 5 kg/day	
Air	Estimated rel	lease rate	Local rele	ease rate: 1 kg/day	
Non-Agricultural Soil Estimated release factor Release factor after on-si		actor after on-site RMM: 0%			
Protection target		Exposure concentration		Risk quantification (RCR)	
Fresh water		Local PEC: 0.255 mg/l		0.5	
Sedimentation (Fresh water)		Local PEC: 1.26 mg/kg dw		0.5	
Marine water		Local PEC: 0.0255 mg/l		0.5	
Sedimentation (Marine water)		Local PEC: 0.126 mg/kg dw		0.5	
Sewage Treatment Plant		Local PEC: 2.496 mg/l		0.01	
Agricultural soil		Local PEC: 0.029 mg/kg dw		0.14	
Man via Environment - Inhalation (Systemic effects)Concentration in air: 7.8E-5 mg/m³< 0.01					



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Man via Environment - Oral	Exposure via food consumption: 0.017 mg/kg bw/day	0.04
Man via Environment - Combined routes		0.04
3.2. Worker		
Contributing scenario controlling worker expose occasional controlled exposure or processes with ex-		
Exposure route	Exposure estimate - Worker	Risk quantification (RCR)
Inhalation, Systemic effects, Long Term	0.5 mg/m <sup>3</sup>	0.06
Inhalation, Systemic effects, Acute	2 mg/m <sup>3</sup>	0.024
Dermal, Systemic effects, Long Term	1.37 mg/kg bw/day	0.116
Combined routes, Systemic effects, Long Term		0.176
Contributing scenario controlling worker exposu batch processes with occasional controlled exposure		
Exposure route	Exposure estimate - Worker	Risk quantification (RCR)
Inhalation, Systemic effects, Long Term	1 mg/m <sup>3</sup>	0.12
Inhalation, Systemic effects, Acute	4 mg/m <sup>3</sup>	0.049
Dermal, Systemic effects, Long Term	0.69 mg/kg bw/day	0.058
Combined routes, Systemic effects, Long Term		0.179
Contributing scenario controlling worker expose 4)	ure: Chemical production where opport	unity for exposure arises (PROC
Exposure route	Exposure estimate - Worker	Risk quantification (RCR)
Inhalation, Systemic effects, Long Term	5 mg/m <sup>3</sup>	0.602
Inhalation, Systemic effects, Acute	20 mg/m <sup>3</sup>	0.243
Dermal, Systemic effects, Long Term	1.372 mg/kg bw/day	0.116
Combined routes, Systemic effects, Long Term		0.719
Contributing scenario controlling worker expose	ure: Mixing or blending in batch proces	ses (PROC 5)
Exposure route	Exposure estimate - Worker	Risk quantification (RCR)
Inhalation, Systemic effects, Long Term	5 mg/m <sup>3</sup>	0.602
Inhalation, Systemic effects, Acute	20 mg/m <sup>3</sup>	0.243
Dermal, Systemic effects, Long Term	2.742 mg/kg bw/day	0.232
Combined routes, Systemic effects, Long Term		0.835
<b>Contributing scenario controlling worker expose</b> dedicated facilities (PROC 8a)	ure: Transfer of substance or mixture (c	harging and discharging) at non-
Exposure route	Exposure estimate - Worker	Risk quantification (RCR)
Inhalation, Systemic effects, Long Term	5 mg/m <sup>3</sup>	0.602
Inhalation, Systemic effects, Acute	20 mg/m <sup>3</sup>	0.243
Dermal, Systemic effects, Long Term	2.742 mg/kg bw/day	0.232
Combined routes, Systemic effects, Long Term		0.835
<b>Contributing scenario controlling worker expose</b> dedicated facilities (PROC 8b)	ure: Transfer of substance or mixture (c	harging and discharging) at non-
Exposure route	Exposure estimate - Worker	Risk quantification (RCR)
Inhalation, Systemic effects, Long Term	1 mg/m <sup>3</sup>	0.12
Inhalation, Systemic effects, Acute	4 mg/m <sup>3</sup>	0.049
Dermal, Systemic effects, Long Term	2.742 mg/kg bw/day	0.232
Combined routes, Systemic effects, Long Term		0.353



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Melamine

Exposure route	Exposure estimate - Worker	Risk quantification (RCR)
Inhalation, Systemic effects, Long Term	5 mg/m <sup>3</sup>	0.602
Inhalation, Systemic effects, Acute	20 mg/m <sup>3</sup>	0.243
Dermal, Systemic effects, Long Term	1.372 mg/kg bw/day	0.116
Combined routes, Systemic effects, Long Term		0.719
<b>Contributing scenario controlling worker expos</b> 14)	ure: Tabletting, compression, extrusior	n, pelletisation, granulation (PRO
Exposure route	Exposure estimate - Worker	Risk quantification (RCR)
Inhalation, Systemic effects, Long Term	1 mg/m <sup>3</sup>	0.12
Inhalation, Systemic effects, Acute	4 mg/m <sup>3</sup>	0.049
Dermal, Systemic effects, Long Term	3.43 mg/kg bw/day	0.291
Combined routes, Systemic effects, Long Term		0.411
Contributing scenario controlling worker expos	ure: Use as laboratory reagent (PROC	15)
Exposure route	Exposure estimate - Worker	Risk quantification (RCR)
Inhalation, Systemic effects, Long Term	0.5 mg/m <sup>3</sup>	0.06
Inhalation, Systemic effects, Acute	2 mg/m <sup>3</sup>	0.024
Dermal, Systemic effects, Long Term	0.34 mg/kg bw/day	0.029
Combined routes, Systemic effects, Long Term		0.089
Contributing scenario controlling worker expose 19)	<b>ire:</b> Hand-mixing with intimate contact	t and only PPE available (PROC
Exposure route	Exposure estimate - Worker	Risk quantification (RCR)
Inhalation, Systemic effects, Long Term	3 mg/m <sup>3</sup>	0.361
Inhalation, Systemic effects, Acute	20 mg/m <sup>3</sup>	0.243
Dermal, Systemic effects, Long Term	7.072 mg/kg bw/day	0.599
Combined routes, Systemic effects, Long Term		0.961
Contributing scenario controlling worker expos	ire: Manual maintenance (cleaning and	d repair) of machinery (PROC 28
Exposure route	Exposure estimate - Worker	Risk quantification (RCR)
Inhalation, Systemic effects, Long Term	5 mg/m <sup>3</sup>	0.602
Inhalation, Systemic effects, Acute	20 mg/m <sup>3</sup>	0.243
Dermal, Systemic effects, Long Term	2.742 mg/kg bw/day	0.232
Combined routes, Systemic effects, Long Term		0.835
SECTION 4: 1.14 Guidance to DU to ev	aluate whether he works inside the h	ooundaries set by the ES

Explanation: The exposure estimates for PROC 8a are used, as TRA Workers cannot predict exposure for PROC 28 and these estimates can be considered suitable for estimating exposures during manual maintenance.

### 2. Exposure Scenario 2: Use at industrial sites - Use as intermediate for resins (reacted melamine)

SECTI	ON 1:	Title of exposure scenario		
		Use at industrial sites - Use as intermediate for resins (reacted melamine)		
Contrib	Contributing scenario controlling environmental exposure			
CS1	Use as intermediate for resins (reacted melamine) ERC6a, E		ERC6a, ERC6c	
Contributing scenario controlling worker exposure				
CS2	Chemical production or refinery in closed process without likelihood of exposure or		PROC1	



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	· ·	nt containment conditions	
CS3	Chemical production or refinery in closed continuous process with occasional controlled exposure or processes with equivalent containment conditionsPROC2		
CS4	Manufacture or formulation in the chemical industry in closed batch processes with occasional controlled exposure or processes with equivalent containment conditions         PROC3		
CS5	Chemical production w	here opportunity for exposure arises	PROC4
CS6	Mixing or blending in b	atch processes	PROC5
CS7	Calendering operations		PROC6
CS8	Transfer of substance of facilities	r mixture (charging and discharging) at non-dedicated	PROC8a
CS9	Transfer of substance of	r mixture (charging and discharging) at dedicated facilities	PROC8b
CS10	Transfer of substance of including weighing)	r mixture into small containers (dedicated filling line,	PROC9
CS11	Tabletting, compression	n, extrusion, pelletisation, granulation	PROC14
CS12	Use as laboratory reage	nt	PROC15
CS13	Manual maintenance (cl	leaning and repair) of machinery	PROC28
SECTI	ON 2:	Conditions of use	
2.1		<b>Contributing scenario controlling environmental exposur</b> 2.1 Use as intermediate for resins (reacted melamine) (ERC 6	
Amoun	t used, frequency and du	uration of use (or from service life)	
		vant for the assessment as scenario specific releases are estimat levant for the assessment as scenario specific releases are estim	
Conditi	ons and measures related	to biological sewage treatment plant	
Dischar	cal STP: Standard [Effect ge rate of STP: >= 2E3 m tion of the STP sludge on	3/day	
Other g	given operational conditi	ons affecting environmental exposure	
Receivin	ng surface water flow: >=	1.8E4 m3/day	
2.2		<b>Contributing scenario controlling worker exposure:</b> 2.2 Chemical production or refinery in closed process withou processes with equivalent containment conditions (PROC 1)	t likelihood of exposure or
Produc	t characteristics		
		mixture/article: <= 100 % t: Solid (medium dusty form)	
Freque	ncy and duration of use		
Duratio	n of activity: <= 8 h/day		
Technic	al conditions and mass	ires to control dispersion from source towards the worker	
	cal conditions and measu	ites to control dispersion from source towards the worker	
General Occupat	l ventilation: Basic genera tional Health and Safety M	l ventilation (1-3 air changes per hour) [Effectiveness, Inhalatio Management System: Advanced fectiveness, Inhalation: 0%, Dermal: 0%]	on: 0%]
General Occupat Local ex	l ventilation: Basic genera tional Health and Safety M xhaust ventilation: No [Ef	l ventilation (1-3 air changes per hour) [Effectiveness, Inhalation Management System: Advanced	on: 0%]
General Occupat Local ex <b>Conditi</b> Respirat	l ventilation: Basic genera tional Health and Safety M xhaust ventilation: No [Ef	l ventilation (1-3 air changes per hour) [Effectiveness, Inhalation Management System: Advanced fectiveness, Inhalation: 0%, Dermal: 0%] ed to personal protection, hygiene and health evaluation ctiveness, Inhalation: 0%]	on: 0%]
General Occupat Local ex <b>Conditi</b> Respirat Dermal	l ventilation: Basic genera tional Health and Safety M xhaust ventilation: No [Ef ions and measures relate tory protection: No [Effective protection: No [Effective	l ventilation (1-3 air changes per hour) [Effectiveness, Inhalation Management System: Advanced fectiveness, Inhalation: 0%, Dermal: 0%] ed to personal protection, hygiene and health evaluation ctiveness, Inhalation: 0%]	on: 0%]
General Occupat Local ex Conditi Respirat Dermal Other g Place of	l ventilation: Basic genera tional Health and Safety M xhaust ventilation: No [Ef ions and measures relate tory protection: No [Effective protection: No [Effective	l ventilation (1-3 air changes per hour) [Effectiveness, Inhalatio Management System: Advanced fectiveness, Inhalation: 0%, Dermal: 0%] ed to personal protection, hygiene and health evaluation etiveness, Inhalation: 0%] ness, Dermal: 0%]	on: 0%]
General Occupat Local ex Conditi Respirat Dermal Other g Place of	I ventilation: Basic genera tional Health and Safety M xhaust ventilation: No [Ef <b>ions and measures relate</b> tory protection: No [Effective protection: No [Effective <b>given operational conditi</b> f use: Indoor	l ventilation (1-3 air changes per hour) [Effectiveness, Inhalatio Management System: Advanced fectiveness, Inhalation: 0%, Dermal: 0%] ed to personal protection, hygiene and health evaluation etiveness, Inhalation: 0%] ness, Dermal: 0%]	on: 0%]



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Product characteristics	
Percentage (w/w) of substance in Physical form of the used product	
Frequency and duration of use	
Duration of activity: <= 8 h/day	
Technical conditions and measu	res to control dispersion from source towards the worker
Occupational Health and Safety M	l ventilation (1-3 air changes per hour) [Effectiveness, Inhalation: 0%] Aanagement System: Advanced fectiveness, Inhalation: 0%, Dermal: 0%]
Conditions and measures relate	d to personal protection, hygiene and health evaluation
Respiratory protection: No [Effect Dermal protection: No [Effective	
Other given operational conditi	ons affecting workers exposure
Place of use: Indoor Operating temperature: <= 40 °C	
2.4	<b>Contributing scenario controlling worker exposure:</b> 2.4 Manufacture or formulation in the chemical industry in closed batch processes with occasional controlled exposure or processes with equivalent containment conditions (PROC 3)
Product characteristics	
Percentage (w/w) of substance in Physical form of the used product	
Frequency and duration of use	
Duration of activity: <= 8 h/day	
Technical conditions and measu	ires to control dispersion from source towards the worker
Occupational Health and Safety M	l ventilation (1-3 air changes per hour) [Effectiveness, Inhalation: 0%] Aanagement System: Advanced fectiveness, Inhalation: 0%, Dermal: 0%]
Conditions and measures relate	d to personal protection, hygiene and health evaluation
Respiratory protection: No [Effec Dermal protection: No [Effective:	tiveness, Inhalation: 0%] ness, Dermal: 0%]
Other given operational conditi	ons affecting workers exposure
Place of use: Indoor Operating temperature: <= 40 °C	
2.5	Contributing scenario controlling worker exposure: 2.5 Chemical production where opportunity for exposure arises (PROC 4)
Product characteristics	
Percentage (w/w) of substance in Physical form of the used product	mixture/article: <= 100 % :: Solid (medium dusty form)
Frequency and duration of use	
Duration of activity: <= 8 h/day	
Technical conditions and measu	ires to control dispersion from source towards the worker
Occupational Health and Safety M	l ventilation (1-3 air changes per hour) [Effectiveness, Inhalation: 0%] Aanagement System: Advanced fectiveness, Inhalation: 0%, Dermal: 0%]
Conditions and measures relate	d to personal protection, hygiene and health evaluation
Respiratory protection: No [Effec Dermal protection: Yes (Chemica [Effectiveness, Dermal: 80%]	tiveness, Inhalation: 0%] Illy resistant gloves conforming to EN374) and (other) appropriate dermal protection



Other given operational conditi	ons affecting workers exposure			
Place of use: Indoor Operating temperature: <= 40 °C				
2.6	Contributing scenario controlling worker exposure: 2.6 Mixing or blending in batch processes (PROC 5)			
Product characteristics				
Percentage (w/w) of substance in Physical form of the used product				
Frequency and duration of use				
Duration of activity: <= 8 h/day				
Technical conditions and measu	res to control dispersion from source towards the worker			
Occupational Health and Safety M	l ventilation (1-3 air changes per hour) [Effectiveness, Inhalation: 0%] Ianagement System: Advanced fectiveness, Inhalation: 0%, Dermal: 0%]			
Conditions and measures relate	d to personal protection, hygiene and health evaluation			
Respiratory protection: No [Effect Dermal protection: Yes (Chemica [Effectiveness, Dermal: 80%]	tiveness, Inhalation: 0%] Ily resistant gloves conforming to EN374) and (other) appropriate dermal protection			
Other given operational conditi	ons affecting workers exposure			
Place of use: Indoor Operating temperature: <= 40 °C				
2.7	<b>Contributing scenario controlling worker exposure:</b> 2.7 Calendering operations (PROC 6)			
Product characteristics				
Percentage (w/w) of substance in Physical form of the used product				
Frequency and duration of use				
Duration of activity: <= 8 h/day				
Technical conditions and measu	res to control dispersion from source towards the worker			
Occupational Health and Safety M	l ventilation (1-3 air changes per hour) [Effectiveness, Inhalation: 0%] Management System: Advanced fectiveness, Inhalation: 0%, Dermal: 0%]			
Conditions and measures relate	d to personal protection, hygiene and health evaluation			
Respiratory protection: No [Effect Dermal protection: Yes (Chemica appropriate dermal protection [Eff	lly resistant gloves conforming to EN374 with basic employee training) and (other)			
Other given operational conditi	ons affecting workers exposure			
Place of use: Indoor Operating temperature: <= 40 °C				
2.8	<b>Contributing scenario controlling worker exposure:</b> 2.8 Transfer of substance or mixture (charging and discharging) at non-dedicated facilities (PROC 8a)			
Product characteristics				
Percentage (w/w) of substance in Physical form of the used product				
Frequency and duration of use				
Duration of activity: <= 8 h/day				
Technical conditions and measu	res to control dispersion from source towards the worker			
General ventilation: Basic general	ventilation (1-3 air changes per hour) [Effectiveness, Inhalation: 0%]			



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Occupational Health and Safety N	Management System: Advanced
	ffectiveness, Inhalation: 0%, Dermal: 0%]
	ed to personal protection, hygiene and health evaluation
Respiratory protection: No [Effec Dermal protection: Yes (Chemica [Effectiveness, Dermal: 80%]	ctiveness, Inhalation: 0%] ally resistant gloves conforming to EN374) and (other) appropriate dermal protection
Other given operational conditi	ions affecting workers exposure
Place of use: Indoor Operating temperature: <= 40 °C	
2.9	Contributing scenario controlling worker exposure: 2.9 Transfer of substance or mixture (charging and discharging) at dedicated facilities (PROC 8b)
Product characteristics	
Percentage (w/w) of substance in Physical form of the used produc	
Frequency and duration of use	
Duration of activity: <= 8 h/day	
Technical conditions and measu	ures to control dispersion from source towards the worker
Occupational Health and Safety M	l ventilation (1-3 air changes per hour) [Effectiveness, Inhalation: 0%] Management System: Advanced ffectiveness, Inhalation: 0%, Dermal: 0%]
Conditions and measures relate	ed to personal protection, hygiene and health evaluation
Respiratory protection: No [Effec Dermal protection: Yes (Chemica [Effectiveness, Dermal: 80%]	ctiveness, Inhalation: 0%] ally resistant gloves conforming to EN374) and (other) appropriate dermal protection
Other given operational conditional conditiona	ions affecting workers exposure
Place of use: Indoor Operating temperature: <= 40 °C	
2.10	<b>Contributing scenario controlling worker exposure:</b> 2.10 Transfer of substance or mixture into small containers (dedicated filling line, including weighing) (PROC 9)
Product characteristics	
Percentage (w/w) of substance in Physical form of the used produc	
Frequency and duration of use	
Duration of activity: <= 8 h/day	
Technical conditions and measu	ures to control dispersion from source towards the worker
Occupational Health and Safety M	ll ventilation (1-3 air changes per hour) [Effectiveness, Inhalation: 0%] Management System: Advanced ffectiveness, Inhalation: 0%, Dermal: 0%]
Conditions and measures relate	ed to personal protection, hygiene and health evaluation
Respiratory protection: No [Effec Dermal protection: Yes (Chemica [Effectiveness, Dermal: 80%]	ctiveness, Inhalation: 0%] ally resistant gloves conforming to EN374) and (other) appropriate dermal protection
Other given operational conditional conditiona	ions affecting workers exposure
Place of use: Indoor Operating temperature: <= 40 °C	
2.11	<b>Contributing scenario controlling worker exposure:</b> 2.11 Tabletting, compression, extrusion, pelletisation, granulation (PROC 14)



Frequency and duration of use	
Duration of activity: <= 8 h/day	
	ires to control dispersion from source towards the worker
General ventilation: Basic genera Occupational Health and Safety N	l ventilation (1-3 air changes per hour) [Effectiveness, Inhalation: 0%]
Conditions and measures relate	d to personal protection, hygiene and health evaluation
Respiratory protection: No [Effect Dermal protection: No [Effective	
Other given operational condition	ons affecting workers exposure
Place of use: Indoor Operating temperature: <= 40 °C	
2.12	<b>Contributing scenario controlling worker exposure:</b> 2.12 Use as laboratory reagent (PROC 15)
Product characteristics	
Percentage (w/w) of substance in Physical form of the used produc	
Frequency and duration of use	
Duration of activity: <= 8 h/day	
Technical conditions and measu	res to control dispersion from source towards the worker
Occupational Health and Safety M	l ventilation (1-3 air changes per hour) [Effectiveness, Inhalation: 0%] Management System: Advanced fectiveness, Inhalation: 0%, Dermal: 0%]
Conditions and measures relate	d to personal protection, hygiene and health evaluation
Respiratory protection: No [Effect Dermal protection: No [Effective	
Other given operational conditional	ons affecting workers exposure
Place of use: Indoor Operating temperature: <= 40 °C	
2.13	<b>Contributing scenario controlling worker exposure:</b> 2.13 Manual maintenance (cleaning and repair) of machinery (PROC 28)
Product characteristics	
Percentage (w/w) of substance in Physical form of the used produc	
Frequency and duration of use	
Duration of activity: <= 8 h/day	
	res to control dispersion from source towards the worker
Occupational Health and Safety M	l ventilation (1-3 air changes per hour) [Effectiveness, Inhalation: 0%] Management System: Advanced fectiveness, Inhalation: 0%, Dermal: 0%]
Conditions and measures relate	d to personal protection, hygiene and health evaluation
Respiratory protection: No [Effect Dermal protection: Yes (Chemica [Effectiveness, Dermal: 80%]	tiveness, Inhalation: 0%] Illy resistant gloves conforming to EN374) and (other) appropriate dermal protection
Other given operational condition	ons affecting workers exposure
Place of use: Indoor Operating temperature: <= 40 °C	



SECTION 3:	2.14 Exposure	e estimation			
3.1. Environment					
Release	Release esti	mation method	Explanat	ions	
Water	Estimated re	lease rate	Local rele	ease rate: 3 kg/day	
Air	Estimated re	lease rate	Local rele	ease rate: 0.5 kg/day	
Non-Agricultural Soil	Estimated re	lease factor	Release fa	elease factor after on-site RMM: 0%	
Protection target		Exposure concentration		Risk quantification (RCR)	
Fresh water		Local PEC: 0.155 mg/l		0.3	
Sedimentation (Fresh water)		Local PEC: 1.26 mg/kg d	W	0.3	
Marine water		Local PEC: 0.0255 mg/l		0.3	
Sedimentation (Marine water)		Local PEC: 0.126 mg/kg	dw	0.3	
Sewage Treatment Plant		Local PEC: 2.496 mg/l		< 0.01	
Agricultural soil		Local PEC: 0.029 mg/kg	dw	0.08	
Man via Environment - Inhalatie effects)	on (Systemic	Concentration in air: 7.8E	2-5 mg/m <sup>3</sup>	< 0.01	
Man via Environment - Oral		Exposure via food consun 0.017 mg/kg bw/day	nption:	0.04	
Man via Environment - Combined ro	utes			0.02	
3.2. Worker					
<b>Contributing scenario controlling</b> likelihood of exposure or processes v				losed process without	
Exposure route		Exposure estimate - Worker		Risk quantification (RCR)	
Inhalation, Systemic effects, Long Term		0.01 mg/m <sup>3</sup>		< 0.01	
Inhalation, Systemic effects, Acute		0.04 mg/m <sup>3</sup>		< 0.01	
Dermal, Systemic effects, Long Term	1	0.034 mg/kg bw/day		< 0.01	
Combined routes, Systemic effects, I	ong Term			< 0.01	
<b>Contributing scenario controlling</b> occasional controlled exposure or pro-					
Exposure route		Exposure estimate - Wor	rker	Risk quantification (RCR)	
Inhalation, Systemic effects, Long Te	erm	0.5 mg/m <sup>3</sup>		0.06	
Inhalation, Systemic effects, Acute		2 mg/m <sup>3</sup>		0.024	
Dermal, Systemic effects, Long Term	1	1.37 mg/kg bw/day		0.116	
Combined routes, Systemic effects, I	ong Term			0.176	
<b>Contributing scenario controlling v</b> batch processes with occasional contr					
Exposure route		Exposure estimate - Worker		Risk quantification (RCR)	
Inhalation, Systemic effects, Long Te	erm	1 mg/m <sup>3</sup>		0.12	
Inhalation, Systemic effects, Acute		4 mg/m <sup>3</sup>		0.049	
Dermal, Systemic effects, Long Term	1	0.69 mg/kg bw/day		0.058	
Combined routes, Systemic effects, Long Term				0.179	
	U			· · · · · · · · · · · · · · · · · · ·	
<b>Contributing scenario controlling</b> 4)	-	e: Chemical production whe	re opportur	ity for exposure arises (PROC	
Contributing scenario controlling	-	e: Chemical production whe Exposure estimate - Wor		Risk quantification (RCR)	
<b>Contributing scenario controlling</b> 4)	vorker exposu	-			



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Dermal, Systemic effects, Long Term	1.372 mg/kg bw/day	0.116
Combined routes, Systemic effects, Long Term		0.719
Contributing scenario controlling worker expose	ure: Mixing or blending in batch proce	sses (PROC 5)
Exposure route	Exposure estimate - Worker	Risk quantification (RCR)
Inhalation, Systemic effects, Long Term	5 mg/m <sup>3</sup>	0.602
Inhalation, Systemic effects, Acute	20 mg/m <sup>3</sup>	0.243
Dermal, Systemic effects, Long Term	2.742 mg/kg bw/day	0.232
Combined routes, Systemic effects, Long Term		0.835
Contributing scenario controlling worker expose	ure: Calendering operations (PROC 6)	
Exposure route	Exposure estimate - Worker	Risk quantification (RCR)
Inhalation, Systemic effects, Long Term	5 mg/m <sup>3</sup>	0.602
Inhalation, Systemic effects, Acute	20 mg/m <sup>3</sup>	0.243
Dermal, Systemic effects, Long Term	2.743 mg/kg bw/day	0.232
Combined routes, Systemic effects, Long Term		0.835
Contributing scenario controlling worker exposed dedicated facilities (PROC 8a)	ure: Transfer of substance or mixture (	charging and discharging) at non-
Exposure route	Exposure estimate - Worker	Risk quantification (RCR)
Inhalation, Systemic effects, Long Term	5 mg/m <sup>3</sup>	0.602
Inhalation, Systemic effects, Acute	20 mg/m <sup>3</sup>	0.243
Dermal, Systemic effects, Long Term	2.742 mg/kg bw/day	0.232
Combined routes, Systemic effects, Long Term		0.835
<b>Contributing scenario controlling worker expose</b> dedicated facilities (PROC 8b)	ure: Transfer of substance or mixture (	charging and discharging) at non-
Exposure route	Exposure estimate - Worker	Risk quantification (RCR)
Inhalation, Systemic effects, Long Term	1 mg/m <sup>3</sup>	0.12
Inhalation, Systemic effects, Acute	4 mg/m <sup>3</sup>	0.049
Dermal, Systemic effects, Long Term	2.742 mg/kg bw/day	0.232
Combined routes, Systemic effects, Long Term		0.353
<b>Contributing scenario controlling worker expos</b> filling line, including weighing) (PROC 9)	ure: Transfer of substance or mixture in	nto small containers (dedicated
Exposure route	Exposure estimate - Worker	Risk quantification (RCR)
Inhalation, Systemic effects, Long Term	5 mg/m <sup>3</sup>	0.602
Inhalation, Systemic effects, Acute	20 mg/m <sup>3</sup>	0.243
Dermal, Systemic effects, Long Term	1.372 mg/kg bw/day	0.116
Combined routes, Systemic effects, Long Term		0.719
<b>Contributing scenario controlling worker expose</b> 14)	ure: Tabletting, compression, extrusion	n, pelletisation, granulation (PROC
Exposure route	Exposure estimate - Worker	Risk quantification (RCR)
Inhalation, Systemic effects, Long Term	1 mg/m <sup>3</sup>	0.12
Inhalation, Systemic effects, Acute	4 mg/m <sup>3</sup>	0.049
Dermal, Systemic effects, Long Term	3.43 mg/kg bw/day	0.291
Combined routes, Systemic effects, Long Term		0.411
Contributing scenario controlling worker expose	ure: Use as laboratory reagent (PROC	15)
Exposure route	Exposure estimate - Worker	Risk quantification (RCR)



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### Melamine

			1	
Inhalation, Systemic effects, Long Term		0.5 mg/m <sup>3</sup>	0.06	
Inhalation, Systemic effects, Acute		2 mg/m <sup>3</sup>	0.024	
Dermal, Systemic effects, Long Terr	n	0.34 mg/kg bw/day	0.029	
Combined routes, Systemic effects, Long Term			0.089	
Contributing scenario controlling worker exposure: Manual maintenance (cleaning and repair) of machinery (PROC 28)				
Exposure route		Exposure estimate - Worker	Risk quantification (RCR)	
Inhalation, Systemic effects, Long Term		5 mg/m <sup>3</sup>	0.602	
Inhalation, Systemic effects, Acute		20 mg/m <sup>3</sup>	0.243	
Dermal, Systemic effects, Long Term		2.742 mg/kg bw/day	0.232	
Combined routes, Systemic effects, Long Term			0.835	
SECTION 4: 2.15 Guidance to DU to evaluate whether he works inside the boundaries set by the ES			inside the boundaries set by	
Remarks on exposure data from exte	rnal estimation t	ools:		

ECETOC TRA Workers 3.1:

Explanation: The exposure estimates for PROC 8a are used, as TRA Workers cannot predict exposure for PROC 28 and these estimates can be considered suitable for estimating exposures during manual maintenance.

## 3. Exposure Scenario 3: Use at industrial sites - Use of resins with unreacted residual melamine

SECTION 1:		Title of exposure scenario			
		Use at industrial sites - Use of resins with unreacted residual melamine			
Contril	buting scenario controlli	ng environmental exposure			
CS1	Use of resins with unrea	cted residual melamine	ERC5		
Contril	buting scenario controlli	ng worker exposure			
CS2	Industrial spraying		PROC7		
CS3	Transfer of substance or facilities	mixture (charging and discharging) at non-dedicated	PROC8a		
CS4	Transfer of substance of	mixture (charging and discharging) at dedicated facilities	PROC8b		
CS5	Roller application or bru	ishing	PROC10		
CS6	Hand-mixing with intim	nate contact and only PPE available	PROC19		
CS7	Manual maintenance (cl	eaning and repair) of machinery	PROC28		
SECTI	ON 2:	Conditions of use			
2.1		Contributing scenario controlling environmental exposure: 3.1 Use of resins with unreacted residual melamine (ERC 5)			
Amoun	t used, frequency and du	uration of use (or from service life)			
	Daily use amount at site: not relevant for the assessment as scenario specific releases are estimated Annual use amount at site: not relevant for the assessment as scenario specific releases are estimated				
Conditions and measures related to biological sewage treatment plant					
Dischar	cal STP: Standard [Effecti ge rate of STP: >= 2E3 m tion of the STP sludge on	3/day			
Other given operational conditions affecting environmental exposure					
Receivi	Receiving surface water flow: >= 1.8E4 m3/day				
2.2		Contributing scenario controlling worker exposure: 3.2 Industrial spraying (PROC 7)			
Produc	t characteristics				
	Percentage (w/w) of substance in mixture/article: <= 5 % Physical form of the used product: Liquid				



#### Frequency and duration of use

Duration of activity: <= 8 h/day

#### Technical conditions and measures to control dispersion from source towards the worker

Ventilation working room: General ventilation (mechanical) Occupational Health and Safety Management System: Advanced

Local exhaust ventilation: No [Effectiveness, Inhalation: 0%, Dermal: 0%]

#### Conditions and measures related to personal protection, hygiene and health evaluation

Respiratory protection: No [Effectiveness, Inhalation: 0%]

Dermal protection: Yes (Chemically resistant gloves conforming to EN374) and (other) appropriate dermal protection [Effectiveness, Dermal: 80%]

#### Other given operational conditions affecting workers exposure

Place of use: Indoor

Operating temperature: <= 40 °C

2.3

**Contributing scenario controlling worker exposure:** 3.3 Transfer of substance or mixture (charging and discharging) at non-dedicated facilities (PROC 8a)

#### **Product characteristics**

Percentage (w/w) of substance in mixture/article: <= 5 % Physical form of the used product: Liquid

#### Frequency and duration of use

Duration of activity: <= 8 h/day

#### Technical conditions and measures to control dispersion from source towards the worker

General ventilation: Basic general ventilation (1-3 air changes per hour) [Effectiveness, Inhalation: 0%] Occupational Health and Safety Management System: Advanced

Local exhaust ventilation: No [Effectiveness, Inhalation: 0%, Dermal: 0%]

#### Conditions and measures related to personal protection, hygiene and health evaluation

Respiratory protection: No [Effectiveness, Inhalation: 0%] Dermal protection: No [Effectiveness, Dermal: 0%]

#### Other given operational conditions affecting workers exposure

Place of use: Indoor

Operating temperature: <= 40 °C

2.4	<b>Contributing scenario controlling worker exposure:</b> 3.4 Transfer of substance or mixture (charging and discharging) at dedicated facilities
	(PROC 8b)
Due duet also as stanistics	

#### **Product characteristics**

Percentage (w/w) of substance in mixture/article: <= 5 % Physical form of the used product: Liquid

#### Frequency and duration of use

Duration of activity: <= 8 h/day

#### Technical conditions and measures to control dispersion from source towards the worker

General ventilation: Basic general ventilation (1-3 air changes per hour) [Effectiveness, Inhalation: 0%] Occupational Health and Safety Management System: Advanced

Local exhaust ventilation: No [Effectiveness, Inhalation: 0%, Dermal: 0%]

#### Conditions and measures related to personal protection, hygiene and health evaluation

Respiratory protection: No [Effectiveness, Inhalation: 0%]

Dermal protection: No [Effectiveness, Dermal: 0%]

#### Other given operational conditions affecting workers exposure

Place of use: Indoor

Operating temperature: <= 40 °C



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2.5	<b>Contributing scenario controlling worker exposure:</b> 3.5 Roller application or brushing (PROC 10)		
Product characteristics			
Percentage (w/w) of substance in Physical form of the used produc			
Frequency and duration of use			
Duration of activity: <= 8 h/day			
Technical conditions and measured	ures to control dispersion from source towards the worker		
Ventilation working room: Gener Occupational Health and Safety I Local exhaust ventilation: No [E			
Conditions and measures relate	ed to personal protection, hygiene and health evaluation		
Respiratory protection: No [Effective Dermal protection: No [Effective			
Other given operational condit	ions affecting workers exposure		
Place of use: Indoor Operating temperature: <= 40 °C			
2.6	Contributing scenario controlling worker exposure: 3.6 Hand-mixing with intimate contact and only PPE available (PROC 19)		
Product characteristics			
Percentage (w/w) of substance in Physical form of the used produc			
Frequency and duration of use			
Duration of activity: <= 8 h/day			
Technical conditions and measured	ures to control dispersion from source towards the worker		
Ventilation working room: Gener Occupational Health and Safety I Local exhaust ventilation: No [E			
Conditions and measures relate	ed to personal protection, hygiene and health evaluation		
Respiratory protection: No [Effec Dermal protection: Yes (Chemica [Effectiveness, Dermal: 80%]	ctiveness, Inhalation: 0%] ally resistant gloves conforming to EN374) and (other) appropriate dermal protection		
Other given operational condit	ions affecting workers exposure		
Place of use: Indoor Operating temperature: <= 40 °C			
2.7 Contributing scenario controlling worker exposure: 3.7 Manual maintenance (cleaning and repair) of machinery (PROC 28)			
Product characteristics			
Percentage (w/w) of substance in Physical form of the used produc			
Frequency and duration of use			
Duration of activity: <= 8 h/day			
Technical conditions and meas	ures to control dispersion from source towards the worker		
Occupational Health and Safety I	ll ventilation (1-3 air changes per hour) [Effectiveness, Inhalation: 0%] Management System: Advanced ffectiveness, Inhalation: 0%, Dermal: 0%]		
Conditions and measures relate	ed to personal protection, hygiene and health evaluation		
Respiratory protection: No [Effective Dermal protection: No [Effective			



Place of use: Indoor Operating temperature: <= 40 °C					
	3.8 Exposure	estimation			
3.1. Environment					
Release	Release estin	mation method	Explanat	ions	
Water	Estimated re	lease rate	Local rele	ase rate: 0.5 kg/day	
Air	Estimated re	lease rate	Local rele	ase rate: 0 kg/day	
Non-Agricultural Soil	Estimated re	lease factor	Release fa	actor after on-site RMM: 0%	
Protection target		Exposure concentration		Risk quantification (RCR)	
Fresh water		Local PEC: 0.03 mg/l		0.06	
Sedimentation (Fresh water)		Local PEC: 0.148 mg/kg	dw	0.06	
Marine water		Local PEC: 3E-3 mg/l		0.06	
Sedimentation (Marine water)		Local PEC: 0.015 mg/kg	dw	0.06	
Sewage Treatment Plant		Local PEC: 0.25 mg/l		< 0.01	
Agricultural soil		Local PEC: 2.2E-3 mg/kg	dw	0.01	
Man via Environment - Inhalatio effects)	n (Systemic	Concentration in air: 9.8E-16 mg/m <sup>3</sup>		< 0.01	
Man via Environment - Oral		Exposure via food consumption: 1.09E-3 mg/kg bw/day		< 0.01	
Man via Environment - Combined rou	tes			< 0.01	
3.2. Worker					
Contributing scenario controlling w	orker exposur	e: Industrial spraying (PRO	C 7)		
Exposure route		Exposure estimate - Wor	rker	Risk quantification (RCR)	
Inhalation, Systemic effects, Long Term		2.43 mg/m <sup>3</sup>		0.293	
Inhalation, Systemic effects, Acute		2.43 mg/m <sup>3</sup>		0.03	
Dermal, Systemic effects, Long Term		1.714 mg/kg bw/day		0.145	
Combined routes, Systemic effects, Long Term				0.438	
<b>Contributing scenario controlling w</b> dedicated facilities (PROC 8a)	orker exposur	e: Transfer of substance or n	nixture (cha	rging and discharging) at non-	
Exposure route		Exposure estimate - Worker		Risk quantification (RCR)	
Inhalation, Systemic effects, Long Ter	m	0.105 mg/m <sup>3</sup>		0.013	
Inhalation, Systemic effects, Acute		0.105 mg/m <sup>3</sup>		< 0.01	
Dermal, Systemic effects, Long Term		2.74 mg/kg bw/day		0.232	
Combined routes, Systemic effects, Lo	ong Term			0.245	
<b>Contributing scenario controlling w</b> dedicated facilities (PROC 8b)	orker exposur	e: Transfer of substance or n	nixture (cha	rging and discharging) at non-	
Exposure route		Exposure estimate - Wor	rker	Risk quantification (RCR)	
Inhalation, Systemic effects, Long Ter	m	0.105 mg/m <sup>3</sup>		0.013	
Inhalation, Systemic effects, Acute		0.105 mg/m <sup>3</sup>		< 0.01	
Dermal, Systemic effects, Long Term		2.74 mg/kg bw/day		0.232	
	ong Term			0.245	
Combined routes, Systemic effects, Lo					
Combined routes, Systemic effects, Le Contributing scenario controlling w	-	e: Roller application or brus	hing (PROC	C 10)	
•	-	e: Roller application or brus Exposure estimate - Wor		C 10) Risk quantification (RCR)	



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Melamine

Stoffenmanager 8:

Explanation: Inhalation exposure concentration estimated using Stoffenmanager® (version 8)

- Activity/type of task: Handling of liquids at high pressure resulting in substantial generation of mist or spray/haze

- Distance to task: In the breathing zone of the worker (distance head-product < 1 m) (worst-case assumption)

- Local controls: No control measures at the source

- Ventilation working room: General ventilation (mechanical)

- Volume of the working room: 100-1000 m3

- Regular cleaning of work area (daily): Yes

- Regular inspection and maintenance (at least monthly): Yes

- Presence of secondary emission sources (worst-case assumptions);

Other workers using the same substance simultaneously: Yes

A period of evaporation, drying or curing after the activity (with prolonged emission of vapours): Yes

The concentration that can be inhaled by the worker during the task due to the activity undertaken is obtained. As the task is performed for 8 hours, the daily average concentration equals the task concentration. In accordance with the ECHA Guidance (Chapter R.14), this estimated concentration is therefore considered to be the short-term as well as the long-term inhalation exposure estimate (90th percentiles).

ECETOC TRA Workers 3.1:

Explanation: As solid is used as value for CSA, while liquid is used, it is considered appropriate to refine the exposure estimates, using the standalone version of TRA Workers (v3.1). The vapour pressure at operating temperature ( $40^{\circ}$ C) used for the calculation is 3.71E-8 Pa (as calculated by Chesar).

Stoffenmanager 8:

Explanation: Inhalation exposure concentration estimated using Stoffenmanager® (version 8)

- Activity/type of task: Handling of liquids on large surfaces or large work pieces
- Distance to task: In the breathing zone of the worker (distance head-product < 1 m) (worst-case assumption)
- Local controls: No control measures at the source
- Ventilation working room: General ventilation (mechanical)
- Volume of the working room: 100-1000 m3
- Regular cleaning of work area (daily): Yes
- Regular inspection and maintenance (at least monthly): Yes
- Presence of secondary emission sources (worst-case assumptions);

Other workers using the same substance simultaneously: Yes

A period of evaporation, drying or curing after the activity (with prolonged emission of vapours): Yes

The concentration that can be inhaled by the worker during the task due to the activity undertaken is obtained. As the task is performed for 8 hours, the daily average concentration equals the task concentration. In accordance with the ECHA Guidance (Chapter R.14), this estimated concentration is therefore considered to be the short-term as well as the long-term



inhalation exposure estimate (90th percentiles).

Stoffenmanager 8:

- Explanation: Inhalation exposure concentration estimated using Stoffenmanager® (version 8)
- Activity/type of task: Handling of liquids using low pressure, low speed or on medium-sized surfaces
- Distance to task: In the breathing zone of the worker (distance head-product < 1 m) (worst-case assumption)
- Local controls: No control measures at the source
- Ventilation working room: General ventilation (mechanical)
- Volume of the working room: 100-1000 m3
- Regular cleaning of work area (daily): Yes
- Regular inspection and maintenance (at least monthly): Yes
- Presence of secondary emission sources (worst-case assumptions);
- Other workers using the same substance simultaneously: Yes

A period of evaporation, drying or curing after the activity (with prolonged emission of vapours): Yes

The concentration that can be inhaled by the worker during the task due to the activity undertaken is obtained. As the task is performed for 8 hours, the daily average concentration equals the task concentration. In accordance with the ECHA Guidance (Chapter R.14), this estimated concentration is therefore considered to be the short-term as well as the long-term inhalation exposure estimate (90th percentiles).

#### ECETOC TRA Workers 3.1:

Explanation: The exposure estimates for PROC 8a are used, as TRA Workers cannot predict exposure for PROC 28 and these estimates can be considered suitable for estimating exposures during manual maintenance. The exposure estimates are calculated for using a liquid, with the standalone version of TRA Workers (v3.1). The vapour pressure at operating temperature (40°C) used for the calculation is 3.71E-8 Pa (as calculated by Chesar).

# 4. Exposure Scenario 4: Use at industrial sites - Use as intermediate for the production of other substances e.g. melamine salt (reacted melamine)

SECTION 1:		Title of exposure scenario		
		Use at industrial sites - Use as intermediate for the produc e.g. melamine salt (reacted melamine)	tion of other substances	
Contrib	outing scenario controllin	ng environmental exposure		
CS1	Use as intermediate for melamine)	ERC6a		
Contrib	outing scenario controlli	ng worker exposure	·	
CS2	Chemical production or processes with equivalent	PROC1		
CS3	Chemical production or refinery in closed continuous process with occasional controlled exposure or processes with equivalent containment conditionsPROC2			
CS4	Manufacture or formulation in the chemical industry in closed batch processes with occasional controlled exposure or processes with equivalent containment conditions       PROC3			
CS5	Chemical production where opportunity for exposure arises PROC4			
CS6	Mixing or blending in batch processes		PROC5	
CS7	Transfer of substance or facilities	PROC8a		
CS8	Transfer of substance or mixture (charging and discharging) at dedicated facilities		PROC8b	
CS9	Transfer of substance or mixture into small containers (dedicated filling line, including weighing)		PROC9	
CS10	Use as laboratory reagent		PROC15	
CS11	Manual maintenance (cleaning and repair) of machinery		PROC28	
SECTI	ON 2:	Conditions of use	•	
2.1		<b>Contributing scenario controlling environmental exposure:</b> 4.1 Use as intermediate for the production of other substances e.g. melamine salt (reacted melamine) (ERC 6a)		
Amoun	t used, frequency and du	iration of use (or from service life)		
Daily us	se amount at site: not relev	vant for the assessment as scenario specific releases are estimate	ed	



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Annual use amount at site: not rel	evant for the assessment as scenario specific releases are estimated			
Conditions and measures related	Conditions and measures related to biological sewage treatment plant			
Biological STP: Standard [Effectiveness, Water: 0.169%] Discharge rate of STP: >= 2E3 m3/day Application of the STP sludge on agricultural soil: Yes				
Other given operational conditi	ons affecting environmental exposure			
Receiving surface water flow: >=	Receiving surface water flow: >= 1.8E4 m3/day			
2.2	<b>Contributing scenario controlling worker exposure:</b> 4.2 Chemical production or refinery in closed process without likelihood of exposure or processes with equivalent containment conditions (PROC 1)			
Product characteristics				
Percentage (w/w) of substance in Physical form of the used product				
Frequency and duration of use				
Duration of activity: <= 8 h/day				
Technical conditions and measu	res to control dispersion from source towards the worker			
Occupational Health and Safety M	l ventilation (1-3 air changes per hour) [Effectiveness, Inhalation: 0%] Aanagement System: Advanced fectiveness, Inhalation: 0%, Dermal: 0%]			
Conditions and measures relate	d to personal protection, hygiene and health evaluation			
Respiratory protection: No [Effect Dermal protection: No [Effective				
Other given operational conditi	ons affecting workers exposure			
Place of use: Indoor Operating temperature: <= 40 °C				
2.3	<b>Contributing scenario controlling worker exposure:</b> 4.3 Chemical production or refinery in closed continuous process with occasional controlled exposure or processes with equivalent containment conditions (PROC 2)			
Product characteristics				
Percentage (w/w) of substance in Physical form of the used product				
Frequency and duration of use				
Duration of activity: <= 8 h/day				
Technical conditions and measu	ires to control dispersion from source towards the worker			
General ventilation: Basic general ventilation (1-3 air changes per hour) [Effectiveness, Inhalation: 0%] Occupational Health and Safety Management System: Advanced Local exhaust ventilation: No [Effectiveness, Inhalation: 0%, Dermal: 0%]				
Conditions and measures related to personal protection, hygiene and health evaluation				
Respiratory protection: No [Effectiveness, Inhalation: 0%] Dermal protection: No [Effectiveness, Dermal: 0%]				
Other given operational conditions affecting workers exposure				
Place of use: Indoor Operating temperature: <= 40 °C				
2.4	Contributing scenario controlling worker exposure: 4.4 Manufacture or formulation in the chemical industry in closed batch processes with occasional controlled exposure or processes with equivalent containment conditions (PROC 3)			
Product characteristics				
Percentage (w/w) of substance in Physical form of the used product				



#### Frequency and duration of use

Duration of activity: <= 8 h/day

#### Technical conditions and measures to control dispersion from source towards the worker

General ventilation: Basic general ventilation (1-3 air changes per hour) [Effectiveness, Inhalation: 0%] Occupational Health and Safety Management System: Advanced

Local exhaust ventilation: No [Effectiveness, Inhalation: 0%, Dermal: 0%]

#### Conditions and measures related to personal protection, hygiene and health evaluation

Respiratory protection: No [Effectiveness, Inhalation: 0%]

Dermal protection: No [Effectiveness, Dermal: 0%]

#### Other given operational conditions affecting workers exposure

Place of use: Indoor

Operating temperature: <= 40 °C

2.5

Contributing scenario controlling worker exposure: 4.5 Chemical production where opportunity for exposure arises (PROC 4)

#### Product characteristics

Percentage (w/w) of substance in mixture/article: <= 100 % Physical form of the used product: Solid (medium dusty form)

Frequency and duration of use

Duration of activity: <= 8 h/day

#### Technical conditions and measures to control dispersion from source towards the worker

General ventilation: Basic general ventilation (1-3 air changes per hour) [Effectiveness, Inhalation: 0%] Occupational Health and Safety Management System: Advanced

Local exhaust ventilation: No [Effectiveness, Inhalation: 0%, Dermal: 0%]

#### Conditions and measures related to personal protection, hygiene and health evaluation

Respiratory protection: No [Effectiveness, Inhalation: 0%]

Dermal protection: Yes (Chemically resistant gloves conforming to EN374) and (other) appropriate dermal protection [Effectiveness, Dermal: 80%]

Other given operational conditions affecting workers exposure

#### Place of use: Indoor

2.6

Operating temperature: <= 40 °C

**Contributing scenario controlling worker exposure:** 4.6 Mixing or blending in batch processes (PROC 5)

#### Product characteristics

Percentage (w/w) of substance in mixture/article: <= 100 % Physical form of the used product: Solid (medium dusty form)

#### Frequency and duration of use

Duration of activity: <= 8 h/day

#### Technical conditions and measures to control dispersion from source towards the worker

General ventilation: Basic general ventilation (1-3 air changes per hour) [Effectiveness, Inhalation: 0%] Occupational Health and Safety Management System: Advanced

Local exhaust ventilation: No [Effectiveness, Inhalation: 0%, Dermal: 0%]

#### Conditions and measures related to personal protection, hygiene and health evaluation

Respiratory protection: No [Effectiveness, Inhalation: 0%]

Dermal protection: Yes (Chemically resistant gloves conforming to EN374) and (other) appropriate dermal protection [Effectiveness, Dermal: 80%]

#### Other given operational conditions affecting workers exposure

Place of use: Indoor

2.7

Operating temperature:  $\leq 40 \degree C$ 

Contri

Contributing scenario controlling worker exposure:



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	4.7 Transfer of substance or mixture (charging and discharging) at non-dedicated facilities (PROC 8a)				
Product characteristics					
Percentage (w/w) of substance in Physical form of the used produc					
Frequency and duration of use					
Duration of activity: <= 8 h/day	Duration of activity: <= 8 h/day				
Technical conditions and measures to control dispersion from source towards the worker					
Occupational Health and Safety M	l ventilation (1-3 air changes per hour) [Effectiveness, Inhalation: 0%] Management System: Advanced fectiveness, Inhalation: 0%, Dermal: 0%]				
Conditions and measures relate	ed to personal protection, hygiene and health evaluation				
Respiratory protection: No [Effectiveness, Inhalation: 0%] Dermal protection: Yes (Chemically resistant gloves conforming to EN374) and (other) appropriate dermal protection [Effectiveness, Dermal: 80%]					
Other given operational condition	ions affecting workers exposure				
Place of use: Indoor Operating temperature: <= 40 °C					
2.8	<b>Contributing scenario controlling worker exposure:</b> 4.8 Transfer of substance or mixture (charging and discharging) at dedicated facilities (PROC 8b)				
Product characteristics					
Percentage (w/w) of substance in Physical form of the used produc					
Frequency and duration of use					
Duration of activity: <= 8 h/day					
Technical conditions and measu	ares to control dispersion from source towards the worker				
Occupational Health and Safety M	General ventilation: Basic general ventilation (1-3 air changes per hour) [Effectiveness, Inhalation: 0%] Occupational Health and Safety Management System: Advanced Local exhaust ventilation: No [Effectiveness, Inhalation: 0%, Dermal: 0%]				
Conditions and measures relate	ed to personal protection, hygiene and health evaluation				
Respiratory protection: No [Effec Dermal protection: Yes (Chemica [Effectiveness, Dermal: 80%]	ctiveness, Inhalation: 0%] ally resistant gloves conforming to EN374) and (other) appropriate dermal protection				
Other given operational conditional	ions affecting workers exposure				
Place of use: Indoor Operating temperature: <= 40 °C					
2.9	<b>Contributing scenario controlling worker exposure:</b> 4.9 Transfer of substance or mixture into small containers (dedicated filling line, including weighing) (PROC 9)				
Product characteristics					
Percentage (w/w) of substance in mixture/article: <= 100 % Physical form of the used product: Solid (medium dusty form)					
Frequency and duration of use					
Duration of activity: <= 8 h/day					
Technical conditions and measures to control dispersion from source towards the worker					
General ventilation: Basic general ventilation (1-3 air changes per hour) [Effectiveness, Inhalation: 0%] Occupational Health and Safety Management System: Advanced Local exhaust ventilation: No [Effectiveness, Inhalation: 0%, Dermal: 0%]					
Conditions and measures related to personal protection, hygiene and health evaluation					



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Respiratory protection: No [Effectiveness, Inhalation: 0%] Dermal protection: Yes (Chemically resistant gloves conforming to EN374) and (other) appropriate dermal protection [Effectiveness, Dermal: 80%]					
Other given operational condition	Other given operational conditions affecting workers exposure				
Place of use: Indoor Operating temperature: <= 40 °C					
2.10		Contributing scenario controlling worker exposure: 1.10 Use as laboratory reagent (PROC 15)			
Product characteristics					
Percentage (w/w) of substance in mixture/article: <= 100 % Physical form of the used product: Solid (medium dusty form)					
Frequency and duration of use					
Duration of activity: <= 8 h/day					
Technical conditions and measu	res to control disp	ersion from source toward	s the work	er	
General ventilation: Basic general ventilation (1-3 air changes per hour) [Effectiveness, Inhalation: 0%] Occupational Health and Safety Management System: Advanced Local exhaust ventilation: No [Effectiveness, Inhalation: 0%, Dermal: 0%]					
Conditions and measures relate	d to personal prote	ection, hygiene and health	evaluation		
Respiratory protection: No [Effec Dermal protection: No [Effective		: 0%]			
Other given operational condition	ons affecting work	ers exposure			
Place of use: Indoor Operating temperature: <= 40 °C					
2.11		nario controlling worker extended to the second sec		ery (PROC 28)	
Product characteristics					
Percentage (w/w) of substance in Physical form of the used product					
Frequency and duration of use					
Duration of activity: <= 8 h/day					
Technical conditions and measu	res to control disp	ersion from source toward	s the work	er	
General ventilation: Basic general Occupational Health and Safety M Local exhaust ventilation: No [Ef	Ianagement System	: Advanced	eness, Inha	lation: 0%]	
Conditions and measures relate	d to personal prote	ection, hygiene and health	evaluation		
Respiratory protection: No [Effec Dermal protection: Yes (Chemica [Effectiveness, Dermal: 80%]			(other) appr	opriate dermal protection	
Other given operational conditions affecting workers exposure					
Place of use: Indoor Operating temperature: <= 40 °C					
SECTION 3: 4.12 Exposure estimation					
3.1. Environment					
Release		Release estimation method		Explanations	
Water	Estimated rel	Estimated release rate		Local release rate: 3 kg/day	
Air	Estimated rel	Estimated release rate		Local release rate: 0.5 kg/day	
Non-Agricultural Soil	Non-Agricultural SoilEstimated release factorRelease factor after on-site RMM: 0%			actor after on-site RMM: 0%	
Protection targetExposure concentrationRisk quantification (RCR)					



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	1	
Fresh water	Local PEC: 0.155 mg/l	0.3
Sedimentation (Fresh water)	Local PEC: 0.766 mg/kg dw	0.3
Marine water	Local PEC: 0.0155 mg/l	0.3
Sedimentation (Marine water)	Local PEC: 0.077 mg/kg dw	0.3
Sewage Treatment Plant	Local PEC: 1.497 mg/l	< 0.01
Agricultural soil	Local PEC: 0.02917 mg/kg dw	0.08
Man via Environment - Inhalation (Systemic effects)	Concentration in air: 3.97E-5 mg/m <sup>3</sup>	< 0.01
Man via Environment - Oral	Exposure via food consumption: 9.7E-3 mg/kg bw/day	0.02
Man via Environment – Combined routes		0.02
3.2. Worker		
<b>Contributing scenario controlling worker exposur</b> likelihood of exposure or processes with equivalent of		closed process without
Exposure route	Exposure estimate - Worker	Risk quantification (RCR)
Inhalation, Systemic effects, Long Term	0.01 mg/m <sup>3</sup>	< 0.01
Inhalation, Systemic effects, Acute	0.04 mg/m <sup>3</sup>	< 0.01
Dermal, Systemic effects, Long Term	0.034 mg/kg bw/day	< 0.01
Combined routes, Systemic effects, Long Term		< 0.01
Contributing scenario controlling worker exposur occasional controlled exposure or processes with equ		
Exposure route	Exposure estimate - Worker	Risk quantification (RCR)
Inhalation, Systemic effects, Long Term	0.5 mg/m <sup>3</sup>	0.06
Inhalation Systemic offects Acute	2 mg/m <sup>3</sup>	0.024
Inhalation, Systemic effects, Acute	2 1116/111	
Dermal, Systemic effects, Long Term	1.37 mg/kg bw/day	0.116
· · · · · · · · · · · · · · · · · · ·	-	0.116 0.176
Dermal, Systemic effects, Long Term	1.37 mg/kg bw/day e: Manufacture or formulation in the ch	0.176 nemical industry in closed
Dermal, Systemic effects, Long Term Combined routes, Systemic effects, Long Term <b>Contributing scenario controlling worker exposur</b>	1.37 mg/kg bw/day e: Manufacture or formulation in the ch	0.176 nemical industry in closed
Dermal, Systemic effects, Long Term Combined routes, Systemic effects, Long Term <b>Contributing scenario controlling worker exposur</b> batch processes with occasional controlled exposure of	1.37 mg/kg bw/day re: Manufacture or formulation in the ch or processes with equivalent containment	0.176 nemical industry in closed nt conditions (PROC 3)
Dermal, Systemic effects, Long Term Combined routes, Systemic effects, Long Term <b>Contributing scenario controlling worker exposur</b> batch processes with occasional controlled exposure of <b>Exposure route</b>	1.37 mg/kg bw/day re: Manufacture or formulation in the chor processes with equivalent containment Exposure estimate - Worker	0.176 nemical industry in closed nt conditions (PROC 3) <b>Risk quantification (RCR)</b>
Dermal, Systemic effects, Long Term Combined routes, Systemic effects, Long Term <b>Contributing scenario controlling worker exposur</b> batch processes with occasional controlled exposure of <b>Exposure route</b> Inhalation, Systemic effects, Long Term	1.37 mg/kg bw/day         re: Manufacture or formulation in the chor processes with equivalent containment         Exposure estimate - Worker         1 mg/m <sup>3</sup>	0.176         nemical industry in closed         nt conditions (PROC 3)         Risk quantification (RCR)         0.12
Dermal, Systemic effects, Long Term Combined routes, Systemic effects, Long Term <b>Contributing scenario controlling worker exposure</b> batch processes with occasional controlled exposure of <b>Exposure route</b> Inhalation, Systemic effects, Long Term Inhalation, Systemic effects, Acute	1.37 mg/kg bw/day         1.37 mg/kg bw/day         re: Manufacture or formulation in the chor processes with equivalent containment         Exposure estimate - Worker         1 mg/m <sup>3</sup> 4 mg/m <sup>3</sup>	0.176         nemical industry in closed         nt conditions (PROC 3)         Risk quantification (RCR)         0.12         0.049
Dermal, Systemic effects, Long Term Combined routes, Systemic effects, Long Term <b>Contributing scenario controlling worker exposur</b> batch processes with occasional controlled exposure of <b>Exposure route</b> Inhalation, Systemic effects, Long Term Inhalation, Systemic effects, Acute Dermal, Systemic effects, Long Term	1.37 mg/kg bw/day         1.37 mg/kg bw/day         re: Manufacture or formulation in the chor processes with equivalent containment         Exposure estimate - Worker         1 mg/m³         4 mg/m³         0.69 mg/kg bw/day	0.176nemical industry in closed nt conditions (PROC 3)Risk quantification (RCR)0.120.0490.0580.179
Dermal, Systemic effects, Long Term Combined routes, Systemic effects, Long Term <b>Contributing scenario controlling worker exposur</b> batch processes with occasional controlled exposure of <b>Exposure route</b> Inhalation, Systemic effects, Long Term Inhalation, Systemic effects, Acute Dermal, Systemic effects, Long Term Combined routes, Systemic effects, Long Term <b>Contributing scenario controlling worker exposure</b>	1.37 mg/kg bw/day         1.37 mg/kg bw/day         re: Manufacture or formulation in the chor processes with equivalent containment         Exposure estimate - Worker         1 mg/m³         4 mg/m³         0.69 mg/kg bw/day	0.176         nemical industry in closed         nt conditions (PROC 3)         Risk quantification (RCR)         0.12         0.049         0.058         0.179
Dermal, Systemic effects, Long Term Combined routes, Systemic effects, Long Term <b>Contributing scenario controlling worker exposur</b> batch processes with occasional controlled exposure of <b>Exposure route</b> Inhalation, Systemic effects, Long Term Inhalation, Systemic effects, Acute Dermal, Systemic effects, Long Term Combined routes, Systemic effects, Long Term <b>Contributing scenario controlling worker exposur</b> 4)	1.37 mg/kg bw/day         1.37 mg/kg bw/day         re: Manufacture or formulation in the chor processes with equivalent containment         Exposure estimate - Worker         1 mg/m <sup>3</sup> 4 mg/m <sup>3</sup> 0.69 mg/kg bw/day	0.176         nemical industry in closed         nt conditions (PROC 3) <b>Risk quantification (RCR)</b> 0.12         0.049         0.058         0.179         nity for exposure arises (PROC
Dermal, Systemic effects, Long Term Combined routes, Systemic effects, Long Term <b>Contributing scenario controlling worker exposure</b> batch processes with occasional controlled exposure of <b>Exposure route</b> Inhalation, Systemic effects, Long Term Inhalation, Systemic effects, Acute Dermal, Systemic effects, Long Term Combined routes, Systemic effects, Long Term <b>Contributing scenario controlling worker exposur</b> 4) <b>Exposure route</b>	1.37 mg/kg bw/day         1.37 mg/kg bw/day         re: Manufacture or formulation in the chor processes with equivalent containment         Exposure estimate - Worker         1 mg/m³         4 mg/m³         0.69 mg/kg bw/day         re: Chemical production where opportu         Exposure estimate - Worker	0.176         nemical industry in closed         nt conditions (PROC 3) <b>Risk quantification (RCR)</b> 0.12         0.049         0.058         0.179         nity for exposure arises (PROC <b>Risk quantification (RCR)</b>
Dermal, Systemic effects, Long Term Combined routes, Systemic effects, Long Term <b>Contributing scenario controlling worker exposur</b> batch processes with occasional controlled exposure of <b>Exposure route</b> Inhalation, Systemic effects, Long Term Inhalation, Systemic effects, Acute Dermal, Systemic effects, Long Term Combined routes, Systemic effects, Long Term 4) <b>Exposure route</b> Inhalation, Systemic effects, Long Term	1.37 mg/kg bw/day         1.37 mg/kg bw/day         re: Manufacture or formulation in the chor processes with equivalent containment         Exposure estimate - Worker         1 mg/m <sup>3</sup> 4 mg/m <sup>3</sup> 0.69 mg/kg bw/day         re: Chemical production where opportu         Exposure estimate - Worker         5 mg/m <sup>3</sup>	0.176         nemical industry in closed         nt conditions (PROC 3) <b>Risk quantification (RCR)</b> 0.12         0.049         0.058         0.179         nity for exposure arises (PROC <b>Risk quantification (RCR)</b> 0.602
Dermal, Systemic effects, Long Term Combined routes, Systemic effects, Long Term <b>Contributing scenario controlling worker exposure</b> batch processes with occasional controlled exposure of <b>Exposure route</b> Inhalation, Systemic effects, Long Term Inhalation, Systemic effects, Acute Dermal, Systemic effects, Long Term Combined routes, Systemic effects, Long Term <b>Contributing scenario controlling worker exposur</b> 4) <b>Exposure route</b> Inhalation, Systemic effects, Long Term Inhalation, Systemic effects, Long Term	1.37 mg/kg bw/day         1.37 mg/kg bw/day         re: Manufacture or formulation in the chor processes with equivalent containment         Exposure estimate - Worker         1 mg/m³         4 mg/m³         0.69 mg/kg bw/day         re: Chemical production where opportu         Exposure estimate - Worker         5 mg/m³         20 mg/m³	0.176         nemical industry in closed         nt conditions (PROC 3) <b>Risk quantification (RCR)</b> 0.12         0.049         0.058         0.179         nity for exposure arises (PROC <b>Risk quantification (RCR)</b> 0.602         0.243
Dermal, Systemic effects, Long Term Combined routes, Systemic effects, Long Term <b>Contributing scenario controlling worker exposur</b> batch processes with occasional controlled exposure of <b>Exposure route</b> Inhalation, Systemic effects, Long Term Inhalation, Systemic effects, Acute Dermal, Systemic effects, Long Term Combined routes, Systemic effects, Long Term <b>Contributing scenario controlling worker exposur</b> 4) <b>Exposure route</b> Inhalation, Systemic effects, Long Term Inhalation, Systemic effects, Long Term Inhalation, Systemic effects, Long Term Inhalation, Systemic effects, Long Term	1.37 mg/kg bw/day         1.37 mg/kg bw/day         re: Manufacture or formulation in the chor processes with equivalent containment         Exposure estimate - Worker         1 mg/m³         4 mg/m³         0.69 mg/kg bw/day         re: Chemical production where opportu         Exposure estimate - Worker         5 mg/m³         20 mg/m³         1.372 mg/kg bw/day	0.176         nemical industry in closed         nt conditions (PROC 3) <b>Risk quantification (RCR)</b> 0.12         0.049         0.058         0.179         nity for exposure arises (PROC <b>Risk quantification (RCR)</b> 0.602         0.243         0.116         0.719
Dermal, Systemic effects, Long Term Combined routes, Systemic effects, Long Term <b>Contributing scenario controlling worker exposure</b> batch processes with occasional controlled exposure of <b>Exposure route</b> Inhalation, Systemic effects, Long Term Inhalation, Systemic effects, Acute Dermal, Systemic effects, Long Term Combined routes, Systemic effects, Long Term <b>Contributing scenario controlling worker exposure</b> 4) <b>Exposure route</b> Inhalation, Systemic effects, Long Term Inhalation, Systemic effects, Long Term Contributing scenario controlling worker exposure 4) <b>Exposure route</b> Inhalation, Systemic effects, Long Term Combined routes, Systemic effects, Long Term Combined routes, Systemic effects, Long Term	1.37 mg/kg bw/day         1.37 mg/kg bw/day         re: Manufacture or formulation in the chor processes with equivalent containment         Exposure estimate - Worker         1 mg/m³         4 mg/m³         0.69 mg/kg bw/day         re: Chemical production where opportu         Exposure estimate - Worker         5 mg/m³         20 mg/m³         1.372 mg/kg bw/day	0.176         nemical industry in closed         nt conditions (PROC 3) <b>Risk quantification (RCR)</b> 0.12         0.049         0.058         0.179         nity for exposure arises (PROC <b>Risk quantification (RCR)</b> 0.602         0.243         0.116         0.719
Dermal, Systemic effects, Long Term Combined routes, Systemic effects, Long Term <b>Contributing scenario controlling worker exposur</b> batch processes with occasional controlled exposure of <b>Exposure route</b> Inhalation, Systemic effects, Long Term Inhalation, Systemic effects, Acute Dermal, Systemic effects, Long Term Combined routes, Systemic effects, Long Term <b>Contributing scenario controlling worker exposur</b> 4) <b>Exposure route</b> Inhalation, Systemic effects, Long Term Inhalation, Systemic effects, Long Term Combined routes, Long Term Inhalation, Systemic effects, Long Term Combined routes, Systemic effects, Long Term Combined routes, Systemic effects, Long Term	1.37 mg/kg bw/day         1.37 mg/kg bw/day         re: Manufacture or formulation in the chor processes with equivalent containment         Exposure estimate - Worker         1 mg/m <sup>3</sup> 4 mg/m <sup>3</sup> 0.69 mg/kg bw/day         re: Chemical production where opportu         Exposure estimate - Worker         5 mg/m <sup>3</sup> 20 mg/m <sup>3</sup> 1.372 mg/kg bw/day	0.176         nemical industry in closed         nt conditions (PROC 3) <b>Risk quantification (RCR)</b> 0.12         0.049         0.058         0.179         nity for exposure arises (PROC <b>Risk quantification (RCR)</b> 0.602         0.243         0.116         0.719         es (PROC 5)
Dermal, Systemic effects, Long Term Combined routes, Systemic effects, Long Term Contributing scenario controlling worker exposure batch processes with occasional controlled exposure of Exposure route Inhalation, Systemic effects, Long Term Inhalation, Systemic effects, Acute Dermal, Systemic effects, Long Term Combined routes, Systemic effects, Long Term Contributing scenario controlling worker exposure 4) Exposure route Inhalation, Systemic effects, Long Term Inhalation, Systemic effects, Long Term Contributing scenario controlling worker exposure 4) Exposure route Combined routes, Systemic effects, Long Term Combined routes, Systemic effects, Long Term	1.37 mg/kg bw/day         1.37 mg/kg bw/day         re: Manufacture or formulation in the chor processes with equivalent containment         Exposure estimate - Worker         1 mg/m³         4 mg/m³         0.69 mg/kg bw/day         re: Chemical production where opportu         Exposure estimate - Worker         5 mg/m³         20 mg/m³         1.372 mg/kg bw/day         re: Mixing or blending in batch process         Exposure estimate - Worker	0.176         nemical industry in closed         nt conditions (PROC 3) <b>Risk quantification (RCR)</b> 0.12         0.049         0.058         0.179         nity for exposure arises (PROC <b>Risk quantification (RCR)</b> 0.602         0.243         0.116         0.719         es (PROC 5) <b>Risk quantification (RCR)</b>



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Melamine

Combined routes, Systemic effects, I	Long Term		0.835
<b>Contributing scenario controlling</b> dedicated facilities (PROC 8a)	worker exposur	re: Transfer of substance or mixture (	charging and discharging) at non-
Exposure route		Exposure estimate - Worker	Risk quantification (RCR)
Inhalation, Systemic effects, Long T	erm	5 mg/m <sup>3</sup>	0.602
Inhalation, Systemic effects, Acute		20 mg/m <sup>3</sup>	0.243
Dermal, Systemic effects, Long Terr	n	2.742 mg/kg bw/day	0.232
Combined routes, Systemic effects, I	Long Term		0.835
<b>Contributing scenario controlling</b> dedicated facilities (PROC 8b)	worker exposur	<b>:e:</b> Transfer of substance or mixture (	charging and discharging) at non-
Exposure route		Exposure estimate - Worker	Risk quantification (RCR)
Inhalation, Systemic effects, Long T	erm	1 mg/m <sup>3</sup>	0.12
Inhalation, Systemic effects, Acute		4 mg/m <sup>3</sup>	0.049
Dermal, Systemic effects, Long Terr	n	2.742 mg/kg bw/day	0.232
Combined routes, Systemic effects, I	Long Term		0.353
<b>Contributing scenario controlling</b> filling line, including weighing) (PR		e: Transfer of substance or mixture i	nto small containers (dedicated
Exposure route		Exposure estimate - Worker	Risk quantification (RCR)
Inhalation, Systemic effects, Long T	erm	5 mg/m <sup>3</sup>	0.602
Inhalation, Systemic effects, Acute		20 mg/m <sup>3</sup>	0.243
Dermal, Systemic effects, Long Term		1.372 mg/kg bw/day	0.116
Combined routes, Systemic effects, Long Term			0.719
Contributing scenario controlling	worker exposur	e: Use as laboratory reagent (PROC	15)
Exposure route		Exposure estimate - Worker	Risk quantification (RCR)
Inhalation, Systemic effects, Long T	erm	0.5 mg/m <sup>3</sup>	0.06
Inhalation, Systemic effects, Acute		2 mg/m <sup>3</sup>	0.024
Dermal, Systemic effects, Long Terr	n	0.34 mg/kg bw/day	0.029
Combined routes, Systemic effects, I	Long Term		0.089
Contributing scenario controlling	worker exposur	e: Manual maintenance (cleaning an	d repair) of machinery (PROC 28)
Exposure route		Exposure estimate - Worker	Risk quantification (RCR)
Inhalation, Systemic effects, Long T	erm	5 mg/m <sup>3</sup>	0.602
Inhalation, Systemic effects, Acute		20 mg/m <sup>3</sup>	0.243
Dermal, Systemic effects, Long Term		2.742 mg/kg bw/day	0.232
Combined routes, Systemic effects, Long Term			0.835
SECTION 4:	4.13 Guidance the ES	to DU to evaluate whether he wor	ks inside the boundaries set by
Remarks on exposure data from exter ECETOC TRA Workers 3.1: Explanation: The exposure estimates these estimates can be considered su	for PROC 8a a	e used, as TRA Workers cannot pred	dict exposure for PROC 28 and enance.

## 5. Exposure Scenario 5: Use at industrial sites - Use as additive in foams

SECTION	ON 1:	Title of exposure scenario		
		Use at industrial sites - Use as additive in foams		
Contributing scenario controlling environmental exposure				
CS1	CS1 Use as additive in foams		ERC5	

1



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Contrib	outing scenario controllin	ng worker exposure	
CS2	Chemical production or refinery in closed process without likelihood of exposure or processes with equivalent containment conditions PROC1		
CS3	Chemical production or refinery in closed continuous process with occasional controlled exposure or processes with equivalent containment conditions PROC2		
CS4	Manufacture or formulation in the chemical industry in closed batch processes with occasional controlled exposure or processes with equivalent containment conditions		
CS5	Chemical production wh	here opportunity for exposure arises	PROC4
CS6	Mixing or blending in b	atch processes	PROC5
CS7	Transfer of substance or facilities	mixture (charging and discharging) at non-dedicated	PROC8a
CS8	Transfer of substance or	mixture (charging and discharging) at dedicated facilities	PROC8b
CS9	Transfer of substance or including weighing)	mixture into small containers (dedicated filling line,	PROC9
CS10	Use as laboratory reagen	nt	PROC15
CS11	Hand-mixing with intim	ate contact and only PPE available	PROC19
CS12	Manual maintenance (cl	eaning and repair) of machinery	PROC28
Subseq	uent service life exposur	e scenario(s):	
ES8	Service life (worker at in	ndustrial site) - PU foams - Workers (industrial)	
ES11	Service life (consumers)	- PU foams – Consumers	
SECTI	ON 2:	Conditions of use	
2.1		<b>Contributing scenario controlling environmental exposur</b> 5.1 Use as additive in foams (ERC 5)	·e:
Amoun	t used, frequency and du	iration of use (or from service life)	
		vant for the assessment as scenario specific releases are estima evant for the assessment as scenario specific releases are estim	
Conditi	ons and measures related t	o biological sewage treatment plant	
Dischar	cal STP: Standard [Effecti ge rate of STP: >= 2E3 m tion of the STP sludge on	3/day	
	-	ons affecting environmental exposure	
-	ng surface water flow: >=		
2.2		Contributing scenario controlling worker exposure: 5.2 Chemical production or refinery in closed process withou processes with equivalent containment conditions (PROC 1)	
Produc	t characteristics		
		mixture/article: <= 100 % :: Solid (medium dusty form)	
Freque	ncy and duration of use		
Duratio	n of activity: <= 8 h/day		
Technie	cal conditions and measu	rres to control dispersion from source towards the worker	
Occupa	tional Health and Safety N	l ventilation (1-3 air changes per hour) [Effectiveness, Inhalati Management System: Advanced fectiveness, Inhalation: 0%, Dermal: 0%]	on: 0%]
Conditi	ions and measures relate	d to personal protection, hygiene and health evaluation	
	tory protection: No [Effec protection: No [Effective		
	-	ons affecting workers exposure	



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Place of use: Indoor	
Operating temperature: <= 40 °C	
2.3	<b>Contributing scenario controlling worker exposure:</b> 5.3 Chemical production or refinery in closed continuous process with occasional controlled exposure or processes with equivalent containment conditions (PROC 2)
Product characteristics	
Percentage (w/w) of substance in Physical form of the used produc	
Frequency and duration of use	
Duration of activity: <= 8 h/day	
Technical conditions and measu	ires to control dispersion from source towards the worker
Occupational Health and Safety M	l ventilation (1-3 air changes per hour) [Effectiveness, Inhalation: 0%] Management System: Advanced fectiveness, Inhalation: 0%, Dermal: 0%]
Conditions and measures relate	d to personal protection, hygiene and health evaluation
Respiratory protection: No [Effect Dermal protection: No [Effective]	
Other given operational conditional	ons affecting workers exposure
Place of use: Indoor Operating temperature: <= 40 °C	
2.4	Contributing scenario controlling worker exposure: 5.4 Manufacture or formulation in the chemical industry in closed batch processes with occasional controlled exposure or processes with equivalent containment conditions (PROC 3)
Product characteristics	
Percentage (w/w) of substance in Physical form of the used produc	
Frequency and duration of use	
Duration of activity: <= 8 h/day	
Technical conditions and measu	res to control dispersion from source towards the worker
Occupational Health and Safety M	l ventilation (1-3 air changes per hour) [Effectiveness, Inhalation: 0%] Management System: Advanced fectiveness, Inhalation: 0%, Dermal: 0%]
Conditions and measures relate	d to personal protection, hygiene and health evaluation
Respiratory protection: No [Effec Dermal protection: No [Effective	
Other given operational conditional	ons affecting workers exposure
Place of use: Indoor Operating temperature: <= 40 °C	
2.5	Contributing scenario controlling worker exposure: 5.5 Chemical production where opportunity for exposure arises (PROC 4)
Product characteristics	
Percentage (w/w) of substance in Physical form of the used produc	
Frequency and duration of use	
Duration of activity: <= 8 h/day	
Technical conditions and measu	res to control dispersion from source towards the worker
Occupational Health and Safety M	l ventilation (1-3 air changes per hour) [Effectiveness, Inhalation: 0%] Management System: Advanced fectiveness, Inhalation: 0%, Dermal: 0%]



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QATAR MELAMINE CO.		
	d to personal protection, hygiene and health evaluation	
Respiratory protection: No [Effec Dermal protection: Yes (Chemica [Effectiveness, Dermal: 80%]	tiveness, Inhalation: 0%] Illy resistant gloves conforming to EN374) and (other) appropriate dermal protection	
Other given operational conditi	ons affecting workers exposure	
Place of use: Indoor Operating temperature: <= 40 °C		
2.6	<b>Contributing scenario controlling worker exposure:</b> 5.6 Mixing or blending in batch processes (PROC 5)	
Product characteristics		
Percentage (w/w) of substance in Physical form of the used product		
Frequency and duration of use		
Duration of activity: <= 8 h/day		
Technical conditions and measu	ires to control dispersion from source towards the worker	
Occupational Health and Safety M	l ventilation (1-3 air changes per hour) [Effectiveness, Inhalation: 0%] Management System: Advanced fectiveness, Inhalation: 0%, Dermal: 0%]	
Conditions and measures relate	d to personal protection, hygiene and health evaluation	
Respiratory protection: No [Effec Dermal protection: Yes (Chemica [Effectiveness, Dermal: 80%]	tiveness, Inhalation: 0%] Illy resistant gloves conforming to EN374) and (other) appropriate dermal protection	
Other given operational conditi	ons affecting workers exposure	
Place of use: Indoor Operating temperature: <= 40 °C		
2.7	<b>Contributing scenario controlling worker exposure:</b> 5.7 Transfer of substance or mixture (charging and discharging) at non-dedicated facilities (PROC 8a)	
Product characteristics		
Percentage (w/w) of substance in Physical form of the used product		
Frequency and duration of use		
Duration of activity: <= 8 h/day		
Technical conditions and measu	ires to control dispersion from source towards the worker	
Occupational Health and Safety M	l ventilation (1-3 air changes per hour) [Effectiveness, Inhalation: 0%] Management System: Advanced fectiveness, Inhalation: 0%, Dermal: 0%]	
Conditions and measures relate	d to personal protection, hygiene and health evaluation	
Respiratory protection: No [Effec Dermal protection: Yes (Chemica [Effectiveness, Dermal: 80%]	tiveness, Inhalation: 0%] Illy resistant gloves conforming to EN374) and (other) appropriate dermal protection	
Other given operational conditi	ons affecting workers exposure	
Place of use: Indoor Operating temperature: <= 40 °C		
2.8	<b>Contributing scenario controlling worker exposure:</b> 5.8 Transfer of substance or mixture (charging and discharging) at dedicated facilities (PROC 8b)	
Product characteristics		
Percentage (w/w) of substance in Physical form of the used product		



#### Frequency and duration of use

Duration of activity: <= 8 h/day

### Technical conditions and measures to control dispersion from source towards the worker

General ventilation: Basic general ventilation (1-3 air changes per hour) [Effectiveness, Inhalation: 0%] Occupational Health and Safety Management System: Advanced

Local exhaust ventilation: No [Effectiveness, Inhalation: 0%, Dermal: 0%]

### Conditions and measures related to personal protection, hygiene and health evaluation

Respiratory protection: No [Effectiveness, Inhalation: 0%]

Dermal protection: Yes (Chemically resistant gloves conforming to EN374) and (other) appropriate dermal protection [Effectiveness, Dermal: 80%]

#### Other given operational conditions affecting workers exposure

Place of use: Indoor

Operating temperature: <= 40 °C

2.9

**Contributing scenario controlling worker exposure:** 5.9 Transfer of substance or mixture into small containers (dedicated filling line, including weighing) (PROC 9)

#### **Product characteristics**

Percentage (w/w) of substance in mixture/article: <= 100 % Physical form of the used product: Solid (medium dusty form)

### Frequency and duration of use

Duration of activity: <= 8 h/day

#### Technical conditions and measures to control dispersion from source towards the worker

General ventilation: Basic general ventilation (1-3 air changes per hour) [Effectiveness, Inhalation: 0%] Occupational Health and Safety Management System: Advanced

Local exhaust ventilation: No [Effectiveness, Inhalation: 0%, Dermal: 0%]

#### Conditions and measures related to personal protection, hygiene and health evaluation

Respiratory protection: No [Effectiveness, Inhalation: 0%] Dermal protection: Yes (Chemically resistant gloves conforming to EN374) and (other) appropriate dermal protection [Effectiveness, Dermal: 80%]

### Other given operational conditions affecting workers exposure

Place of use: Indoor

Operating temperature: <= 40 °C

2.10

**Contributing scenario controlling worker exposure:** 5.10 Use as laboratory reagent (PROC 15)

#### Product characteristics

Percentage (w/w) of substance in mixture/article: <= 100 % Physical form of the used product: Solid (medium dusty form)

### Frequency and duration of use

Duration of activity: <= 8 h/day

### Technical conditions and measures to control dispersion from source towards the worker

General ventilation: Basic general ventilation (1-3 air changes per hour) [Effectiveness, Inhalation: 0%] Occupational Health and Safety Management System: Advanced

Local exhaust ventilation: No [Effectiveness, Inhalation: 0%, Dermal: 0%]

### Conditions and measures related to personal protection, hygiene and health evaluation

Respiratory protection: No [Effectiveness, Inhalation: 0%]

Dermal protection: No [Effectiveness, Dermal: 0%]

### Other given operational conditions affecting workers exposure

Place of use: Indoor

Operating temperature: <= 40 °C



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2.11	Contributing scer 5.11 Hand-mixing	nario controlling worker en with intimate contact and o	<b>xposure:</b> nly PPE av	ailable (PROC 19)
Product characteristics				
Percentage (w/w) of substance in n Physical form of the used product:				
Frequency and duration of use				
Duration of activity: <= 4 h/day				
Technical conditions and measur	es to control disp	ersion from source toward	ls the work	er
General ventilation: Basic general Occupational Health and Safety Ma Local exhaust ventilation: No [Effe	anagement System	: Advanced	veness, Inha	lation: 0%]
Conditions and measures related	to personal prote	ection, hygiene and health	evaluation	
Respiratory protection: No [Effecti Dermal protection: Yes (Chemicall appropriate dermal protection [Effe	y resistant gloves	conforming to EN374 with	specific acti	vity training) and (other)
Other given operational condition	ns affecting work	ers exposure		
Place of use: Indoor Operating temperature: <= 40 °C				
		nario controlling worker en tenance (cleaning and repair		nery (PROC 28)
Product characteristics				
Percentage (w/w) of substance in n Physical form of the used product:				
Frequency and duration of use				
Duration of activity: <= 8 h/day				
Technical conditions and measur	es to control disp	ersion from source toward	ls the work	er
General ventilation: Basic general Occupational Health and Safety Ma Local exhaust ventilation: No [Effe	anagement System	: Advanced	veness, Inha	lation: 0%]
Conditions and measures related	to personal prote	ection, hygiene and health	evaluation	
Respiratory protection: No [Effecti Dermal protection: Yes (Chemicall [Effectiveness, Dermal: 80%]			(other) appr	opriate dermal protection
Other given operational condition	ns affecting work	ers exposure		
Place of use: Indoor Operating temperature: <= 40 °C				
SECTION 3:	5.13 Exposure	estimation		
3.1. Environment				
Release	Release estir	nation method	Explanat	ions
Water	Estimated rel	ease rate	Local rele	ase rate: 3 kg/day
Air	Estimated rel	ease rate	Local rele	ase rate: 0.5 kg/day
Non-Agricultural Soil	Estimated rel	ease factor	Release fa	actor after on-site RMM: 0%
Protection target		Exposure concentration		Risk quantification (RCR)
Fresh water		Local PEC: 0.155 mg/l		0.3
Sedimentation (Fresh water)		Local PEC: 0.766 mg/kg	dw	0.3
Marine water		Local PEC: 0.0155 mg/l		0.3
Sedimentation (Marine water)		Local PEC: 0.077 mg/kg	dw	0.3
Sewage Treatment Plant		Local PEC: 1.497 mg/l		< 0.01



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Agricultural soil	Local PEC: 0.017 mg/kg dw	0.08
Man via Environment - Inhalation (Systemic effects)	Concentration in air: 3.971E-5 mg/m <sup>3</sup>	< 0.01
Man via Environment - Oral	Exposure via food consumption: 9.7E-3 mg/kg bw/day	0.02
Man via Environment – Combined routes		0.02
3.2. Worker	•	
<b>Contributing scenario controlling worker exposur</b> likelihood of exposure or processes with equivalent of		n closed process without
Exposure route	Exposure estimate - Worker	Risk quantification (RCR)
Inhalation, Systemic effects, Long Term	0.01 mg/m <sup>3</sup>	< 0.01
Inhalation, Systemic effects, Acute	0.04 mg/m <sup>3</sup>	< 0.01
Dermal, Systemic effects, Long Term	0.034 mg/kg bw/day	< 0.01
Combined routes, Systemic effects, Long Term		< 0.01
Contributing scenario controlling worker exposur occasional controlled exposure or processes with equ		
Exposure route	Exposure estimate - Worker	Risk quantification (RCR)
Inhalation, Systemic effects, Long Term	0.5 mg/m <sup>3</sup>	0.06
Inhalation, Systemic effects, Acute	2 mg/m <sup>3</sup>	0.024
Dermal, Systemic effects, Long Term	1.37 mg/kg bw/day	0.116
Combined routes, Systemic effects, Long Term		0.176
<b>Contributing scenario controlling worker exposur</b> batch processes with occasional controlled exposure of		
Exposure route	Exposure estimate - Worker	Risk quantification (RCR)
Inhalation, Systemic effects, Long Term	1 mg/m <sup>3</sup>	0.12
initiation, Systemic cricets, Long Term	1 1115/111	0.12
Inhalation, Systemic effects, Acute	4 mg/m <sup>3</sup>	0.049
· · ·		
Inhalation, Systemic effects, Acute	4 mg/m <sup>3</sup>	0.049
Inhalation, Systemic effects, Acute Dermal, Systemic effects, Long Term	4 mg/m <sup>3</sup> 0.69 mg/kg bw/day	0.049 0.058 0.179
Inhalation, Systemic effects, Acute Dermal, Systemic effects, Long Term Combined routes, Systemic effects, Long Term <b>Contributing scenario controlling worker exposur</b> 4)	4 mg/m <sup>3</sup> 0.69 mg/kg bw/day	0.049 0.058 0.179 tunity for exposure arises (PROC
Inhalation, Systemic effects, Acute Dermal, Systemic effects, Long Term Combined routes, Systemic effects, Long Term <b>Contributing scenario controlling worker exposur</b> 4)	4 mg/m <sup>3</sup> 0.69 mg/kg bw/day re: Chemical production where opport	0.049 0.058 0.179 tunity for exposure arises (PROC
Inhalation, Systemic effects, Acute Dermal, Systemic effects, Long Term Combined routes, Systemic effects, Long Term <b>Contributing scenario controlling worker exposur</b> 4) <b>Exposure route</b>	4 mg/m <sup>3</sup> 0.69 mg/kg bw/day re: Chemical production where opport Exposure estimate - Worker	0.049 0.058 0.179 nunity for exposure arises (PROC Risk quantification (RCR
Inhalation, Systemic effects, Acute Dermal, Systemic effects, Long Term Combined routes, Systemic effects, Long Term <b>Contributing scenario controlling worker exposur</b> 4) <b>Exposure route</b> Inhalation, Systemic effects, Long Term	4 mg/m <sup>3</sup> 0.69 mg/kg bw/day re: Chemical production where opport Exposure estimate - Worker 5 mg/m <sup>3</sup>	0.049           0.058           0.179           cunity for exposure arises (PROC           Risk quantification (RCR)           0.602
Inhalation, Systemic effects, Acute Dermal, Systemic effects, Long Term Combined routes, Systemic effects, Long Term <b>Contributing scenario controlling worker exposur</b> 4) <b>Exposure route</b> Inhalation, Systemic effects, Long Term Inhalation, Systemic effects, Acute	4 mg/m <sup>3</sup> 0.69 mg/kg bw/day re: Chemical production where opport Exposure estimate - Worker 5 mg/m <sup>3</sup> 20 mg/m <sup>3</sup>	0.049           0.058           0.179           cunity for exposure arises (PROC           Risk quantification (RCR)           0.602           0.243
Inhalation, Systemic effects, Acute Dermal, Systemic effects, Long Term Combined routes, Systemic effects, Long Term <b>Contributing scenario controlling worker exposur</b> 4) <b>Exposure route</b> Inhalation, Systemic effects, Long Term Inhalation, Systemic effects, Acute Dermal, Systemic effects, Long Term	4 mg/m <sup>3</sup> 0.69 mg/kg bw/day re: Chemical production where opport Exposure estimate - Worker 5 mg/m <sup>3</sup> 20 mg/m <sup>3</sup> 1.372 mg/kg bw/day	0.049         0.058         0.179         cunity for exposure arises (PROC         Risk quantification (RCR)         0.602         0.243         0.116         0.719
Inhalation, Systemic effects, Acute Dermal, Systemic effects, Long Term Combined routes, Systemic effects, Long Term <b>Contributing scenario controlling worker exposur</b> 4) <b>Exposure route</b> Inhalation, Systemic effects, Long Term Inhalation, Systemic effects, Acute Dermal, Systemic effects, Long Term Combined routes, Systemic effects, Long Term	4 mg/m <sup>3</sup> 0.69 mg/kg bw/day re: Chemical production where opport Exposure estimate - Worker 5 mg/m <sup>3</sup> 20 mg/m <sup>3</sup> 1.372 mg/kg bw/day	0.049           0.058           0.179           tunity for exposure arises (PROC <b>Risk quantification (RCR)</b> 0.602           0.243           0.116           0.719           sses (PROC 5)
Inhalation, Systemic effects, Acute Dermal, Systemic effects, Long Term Combined routes, Systemic effects, Long Term <b>Contributing scenario controlling worker exposur</b> 4) <b>Exposure route</b> Inhalation, Systemic effects, Long Term Inhalation, Systemic effects, Acute Dermal, Systemic effects, Long Term Combined routes, Systemic effects, Long Term	4 mg/m <sup>3</sup> 0.69 mg/kg bw/day re: Chemical production where opport Exposure estimate - Worker 5 mg/m <sup>3</sup> 20 mg/m <sup>3</sup> 1.372 mg/kg bw/day re: Mixing or blending in batch proces	0.049           0.058           0.179           tunity for exposure arises (PROC <b>Risk quantification (RCR)</b> 0.602           0.243           0.116           0.719           sses (PROC 5)
Inhalation, Systemic effects, Acute Dermal, Systemic effects, Long Term Combined routes, Systemic effects, Long Term <b>Contributing scenario controlling worker exposur</b> 4) <b>Exposure route</b> Inhalation, Systemic effects, Long Term Inhalation, Systemic effects, Acute Dermal, Systemic effects, Long Term Combined routes, Systemic effects, Long Term <b>Contributing scenario controlling worker exposur</b> <b>Exposure route</b>	4 mg/m <sup>3</sup> 0.69 mg/kg bw/day re: Chemical production where opport Exposure estimate - Worker 5 mg/m <sup>3</sup> 20 mg/m <sup>3</sup> 1.372 mg/kg bw/day re: Mixing or blending in batch proces Exposure estimate - Worker	0.049           0.058           0.179           cunity for exposure arises (PROC           Risk quantification (RCR)           0.602           0.243           0.116           0.719           sses (PROC 5)           Risk quantification (RCR)
Inhalation, Systemic effects, Acute Dermal, Systemic effects, Long Term Combined routes, Systemic effects, Long Term <b>Contributing scenario controlling worker exposur</b> 4) <b>Exposure route</b> Inhalation, Systemic effects, Long Term Inhalation, Systemic effects, Acute Dermal, Systemic effects, Long Term Combined routes, Systemic effects, Long Term <b>Contributing scenario controlling worker exposur</b> <b>Exposure route</b> Inhalation, Systemic effects, Long Term	4 mg/m <sup>3</sup> 0.69 mg/kg bw/day re: Chemical production where opport Exposure estimate - Worker 5 mg/m <sup>3</sup> 20 mg/m <sup>3</sup> 1.372 mg/kg bw/day re: Mixing or blending in batch proces Exposure estimate - Worker 5 mg/m <sup>3</sup>	0.049           0.058           0.179           tunity for exposure arises (PROC <b>Risk quantification (RCR)</b> 0.602           0.243           0.116           0.719           sses (PROC 5) <b>Risk quantification (RCR)</b> 0.602
Inhalation, Systemic effects, Acute Dermal, Systemic effects, Long Term Combined routes, Systemic effects, Long Term <b>Contributing scenario controlling worker exposur</b> 4) <b>Exposure route</b> Inhalation, Systemic effects, Long Term Inhalation, Systemic effects, Acute Dermal, Systemic effects, Long Term Combined routes, Systemic effects, Long Term <b>Contributing scenario controlling worker exposur</b> <b>Exposure route</b> Inhalation, Systemic effects, Long Term Inhalation, Systemic effects, Long Term	4 mg/m <sup>3</sup> 0.69 mg/kg bw/day re: Chemical production where opport Exposure estimate - Worker 5 mg/m <sup>3</sup> 20 mg/m <sup>3</sup> 1.372 mg/kg bw/day re: Mixing or blending in batch proces Exposure estimate - Worker 5 mg/m <sup>3</sup> 20 mg/m <sup>3</sup>	0.049         0.058         0.179         cunity for exposure arises (PROC <b>Risk quantification (RCR)</b> 0.602         0.243         0.116         0.719         sses (PROC 5) <b>Risk quantification (RCR)</b> 0.602         0.243
Inhalation, Systemic effects, Acute Dermal, Systemic effects, Long Term Combined routes, Systemic effects, Long Term <b>Contributing scenario controlling worker exposur</b> 4) <b>Exposure route</b> Inhalation, Systemic effects, Long Term Inhalation, Systemic effects, Acute Dermal, Systemic effects, Long Term Combined routes, Systemic effects, Long Term <b>Contributing scenario controlling worker exposur</b> <b>Exposure route</b> Inhalation, Systemic effects, Long Term <b>Contributing scenario controlling worker exposur</b> <b>Exposure route</b> Inhalation, Systemic effects, Long Term Inhalation, Systemic effects, Long Term	4 mg/m <sup>3</sup> 0.69 mg/kg bw/day re: Chemical production where opport Exposure estimate - Worker 5 mg/m <sup>3</sup> 20 mg/m <sup>3</sup> 1.372 mg/kg bw/day re: Mixing or blending in batch proces Exposure estimate - Worker 5 mg/m <sup>3</sup> 20 mg/m <sup>3</sup> 20 mg/m <sup>3</sup> 2.742 mg/kg bw/day	0.049         0.058         0.179         cunity for exposure arises (PROC <b>Risk quantification (RCR</b> 0.602         0.243         0.116         0.719         sses (PROC 5) <b>Risk quantification (RCR</b> 0.602         0.243         0.116         0.719         sses (PROC 5) <b>Risk quantification (RCR</b> 0.602         0.243         0.232         0.835
Inhalation, Systemic effects, Acute Dermal, Systemic effects, Long Term Combined routes, Systemic effects, Long Term <b>Contributing scenario controlling worker exposur</b> 4) <b>Exposure route</b> Inhalation, Systemic effects, Long Term Inhalation, Systemic effects, Acute Dermal, Systemic effects, Long Term Combined routes, Systemic effects, Long Term <b>Contributing scenario controlling worker exposur</b> <b>Exposure route</b> Inhalation, Systemic effects, Long Term Contributing scenario controlling worker exposur Inhalation, Systemic effects, Acute Dermal, Systemic effects, Long Term Inhalation, Systemic effects, Long Term Combined routes, Systemic effects, Long Term Combined routes, Systemic effects, Long Term	4 mg/m <sup>3</sup> 0.69 mg/kg bw/day re: Chemical production where opport Exposure estimate - Worker 5 mg/m <sup>3</sup> 20 mg/m <sup>3</sup> 1.372 mg/kg bw/day re: Mixing or blending in batch proces Exposure estimate - Worker 5 mg/m <sup>3</sup> 20 mg/m <sup>3</sup> 20 mg/m <sup>3</sup> 2.742 mg/kg bw/day	0.049         0.058         0.179         cunity for exposure arises (PROC <b>Risk quantification (RCR)</b> 0.602         0.243         0.116         0.719         sses (PROC 5) <b>Risk quantification (RCR)</b> 0.602         0.243         0.116         0.719         sses (PROC 5) <b>Risk quantification (RCR)</b> 0.602         0.243         0.232         0.835



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Melamine

Inhalation, Systemic effects, Acute		20 mg/m <sup>3</sup>	0.243
Dermal, Systemic effects, Long Term		2.742 mg/kg bw/day	0.232
Combined routes, Systemic effects, Long Term			0.835
<b>Contributing scenario controlling</b> dedicated facilities (PROC 8b)	worker exposu	re: Transfer of substance or mixture (	charging and discharging) at non-
Exposure route		Exposure estimate - Worker	Risk quantification (RCR)
Inhalation, Systemic effects, Long Te	erm	1 mg/m³	0.12
Inhalation, Systemic effects, Acute		4 mg/m <sup>3</sup>	0.049
Dermal, Systemic effects, Long Term	n	2.742 mg/kg bw/day	0.232
Combined routes, Systemic effects, I	.ong Term		0.353
<b>Contributing scenario controlling</b> filling line, including weighing) (PR		re: Transfer of substance or mixture i	nto small containers (dedicated
Exposure route		Exposure estimate - Worker	Risk quantification (RCR)
Inhalation, Systemic effects, Long Te	erm	5 mg/m <sup>3</sup>	0.602
Inhalation, Systemic effects, Acute		20 mg/m <sup>3</sup>	0.243
Dermal, Systemic effects, Long Term	n	1.372 mg/kg bw/day	0.116
Combined routes, Systemic effects, I	.ong Term		0.719
Contributing scenario controlling	worker exposu	re: Use as laboratory reagent (PROC	15)
Exposure route		Exposure estimate - Worker	Risk quantification (RCR)
Inhalation, Systemic effects, Long Te	erm	0.5 mg/m <sup>3</sup>	0.06
Inhalation, Systemic effects, Acute		2 mg/m <sup>3</sup>	0.024
Dermal, Systemic effects, Long Term		0.34 mg/kg bw/day	0.029
Combined routes, Systemic effects, Long Term			0.089
<b>Contributing scenario controlling</b> 19)	worker exposu	re: Hand-mixing with intimate contac	t and only PPE available (PROC
Exposure route		Exposure estimate - Worker	Risk quantification (RCR)
Inhalation, Systemic effects, Long Te	erm	3 mg/m <sup>3</sup>	0.361
Inhalation, Systemic effects, Acute		20 mg/m <sup>3</sup>	0.243
Dermal, Systemic effects, Long Term	n	7.072 mg/kg bw/day	0.599
Combined routes, Systemic effects, I	.ong Term		0.961
Contributing scenario controlling v	vorker exposu	e: Manual maintenance (cleaning and	d repair) of machinery (PROC 28)
Exposure route		Exposure estimate - Worker	Risk quantification (RCR)
Inhalation, Systemic effects, Long Te	erm	5 mg/m <sup>3</sup>	0.602
Inhalation, Systemic effects, Acute	Inhalation, Systemic effects, Acute		0.243
Dermal, Systemic effects, Long Term		2.742 mg/kg bw/day	0.232
Combined routes, Systemic effects, Long Term			0.835
SECTION 4: 5.14 Guidance the ES		e to DU to evaluate whether he wor	ks inside the boundaries set by
Remarks on exposure data from exter ECETOC TRA Workers 3.1: Explanation: The exposure estimates these estimates can be considered sui	for PROC 8a a	re used, as TRA Workers cannot pred	

6. Exposure Scenario 6: Use at industrial sites - Use as additive in intumescent coatings

SECTION 1:	Title of exposure scenario
	Use at industrial sites - Use as additive in intumescent coatings



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Contrib	outing scenario controlli	ng environmental exposure		
CS1	Use as additive in intumescent coatings ERC5			
Contrib	uting scenario controlli	ng worker exposure		
CS2	Manufacture or formulation in the chemical industry in closed batch processes with occasional controlled exposure or processes with equivalent containment conditionsPROC3			
CS3	Chemical production where opportunity for exposure arises PROC4			
CS4	Mixing or blending in b	atch processes	PROC5	
CS5	Industrial spraying with	Local Exhaust Ventilation (LEV)	PROC7	
CS6	Industrial spraying with	out Local Exhaust Ventilation (LEV)	PROC7	
CS7	Transfer of substance or facilities	mixture (charging and discharging) at non-dedicated	PROC8a	
CS8	Transfer of substance or	mixture (charging and discharging) at dedicated facilities	PROC8b	
CS9	Transfer of substance or including weighing)	mixture into small containers (dedicated filling line,	PROC9	
CS10	Roller application or bru	ishing	PROC10	
CS11	Treatment of articles by	dipping and pouring	PROC13	
CS12	Use as laboratory reagen	nt	PROC15	
CS13	Hand-mixing with intim	ate contact and only PPE available	PROC19	
CS14	Manual maintenance (cl	PROC28		
Subseq	uent service life exposure	e scenario(s):		
ES9	Service life (worker at industrial site) - Intumescent coatings - Workers (industrial)			
ES10	Service life (professional worker) - Intumescent coatings - Professional Workers			
ES12	Service life (consumers)	) - Intumescent coating – Consumers		
SECTI	ON 2:	Conditions of use		
2.1		<b>Contributing scenario controlling environmental exposur</b> 6.1 Use as additive in intumescent coatings (ERC 5)	re:	
Amoun	t used, frequency and du	uration of use (or from service life)		
		vant for the assessment as scenario specific releases are estima evant for the assessment as scenario specific releases are estim		
Conditio	ons and measures related t	to biological sewage treatment plant		
Dischar	cal STP: Standard [Effecti ge rate of STP: >= 2E3 m tion of the STP sludge on			
Other g	given operational conditi	ons affecting environmental exposure		
Receivin	ng surface water flow: >=	1.8E4 m3/day		
2.2		<b>Contributing scenario controlling worker exposure:</b> 6.2 Manufacture or formulation in the chemical industry in closed batch processes with occasional controlled exposure or processes with equivalent containment conditions (PROC 3)		
Produc	t characteristics			
		mixture/article: <= 100 % :: Solid (medium dusty form)		
Freque	ncy and duration of use			
Duration	n of activity: <= 8 h/day			
Technic	cal conditions and measu	rres to control dispersion from source towards the worker		
		l ventilation (1-3 air changes per hour) [Effectiveness, Inhalati Management System: Advanced	on: 0%]	



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Local exhaust ventilation: No [Effectiveness, Inhalation: 0%, Dermal: 0%]				
Conditions and measures related to personal protection, hygiene and health evaluation				
Respiratory protection: No [Effectiveness, Inhalation: 0%] Dermal protection: No [Effectiveness, Dermal: 0%]				
Other given operational conditions affecting workers exposure				
Place of use: Indoor Operating temperature: <= 40 °C				
2.3	2.3 Contributing scenario controlling worker exposure: 6.3 Chemical production where opportunity for exposure arises (PROC 4)			
Product characteristics				
Percentage (w/w) of substance in Physical form of the used product				
Frequency and duration of use				
Duration of activity: <= 8 h/day				
Technical conditions and measu	res to control dispersion from source towards the worker			
Occupational Health and Safety N	l ventilation (1-3 air changes per hour) [Effectiveness, Inhalation: 0%] Management System: Advanced fectiveness, Inhalation: 0%, Dermal: 0%]			
Conditions and measures relate	d to personal protection, hygiene and health evaluation			
Respiratory protection: No [Effec Dermal protection: Yes (Chemica [Effectiveness, Dermal: 80%]	tiveness, Inhalation: 0%] Illy resistant gloves conforming to EN374) and (other) appropriate dermal protection			
Other given operational conditi	ons affecting workers exposure			
Place of use: Indoor Operating temperature: <= 40 °C				
2.4	Contributing scenario controlling worker exposure: 6.4 Mixing or blending in batch processes (PROC 5)			
Product characteristics				
Percentage (w/w) of substance in Physical form of the used product				
Frequency and duration of use				
Duration of activity: <= 8 h/day				
Technical conditions and measu	res to control dispersion from source towards the worker			
Occupational Health and Safety N	l ventilation (1-3 air changes per hour) [Effectiveness, Inhalation: 0%] Aanagement System: Advanced fectiveness, Inhalation: 0%, Dermal: 0%]			
Conditions and measures related to personal protection, hygiene and health evaluation				
Respiratory protection: No [Effectiveness, Inhalation: 0%] Dermal protection: Yes (Chemically resistant gloves conforming to EN374) and (other) appropriate dermal protection [Effectiveness, Dermal: 80%]				
Other given operational conditions affecting workers exposure				
Place of use: Indoor Operating temperature: <= 40 °C				
2.5	<b>Contributing scenario controlling worker exposure:</b> 6.5 Industrial spraying with Local Exhaust Ventilation (LEV) (PROC 7)			
Product characteristics				
Trouter characteristics				
Percentage (w/w) of substance in Physical form of the used product				



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Duration of activity: <= 8 h/day	
	ures to control dispersion from source towards the worker
Ventilation working room: Gener Occupational Health and Safety I Local exhaust ventilation: Yes (T	
Conditions and measures relate	ed to personal protection, hygiene and health evaluation
Respiratory protection: No [Effect Dermal protection: Yes (Chemica [Effectiveness, Dermal: 80%]	ctiveness, Inhalation: 0%] ally resistant gloves conforming to EN374) and (other) appropriate dermal protection
Other given operational condit	ions affecting workers exposure
Place of use: Indoor Operating temperature: <= 40 °C	
2.6	Contributing scenario controlling worker exposure: 6.6 Industrial spraying without Local Exhaust Ventilation (LEV) (PROC 7)
Product characteristics	
Percentage (w/w) of substance in Physical form of the used produc	
Frequency and duration of use	
Duration of activity: <= 8 h/day	
Technical conditions and measured	ures to control dispersion from source towards the worker
Ventilation working room: Gener Occupational Health and Safety I Local exhaust ventilation: No [Et	
Conditions and measures relate	ed to personal protection, hygiene and health evaluation
	pirator with APF of 10) [Effectiveness, Inhalation: 90%] ally resistant gloves conforming to EN374) and (other) appropriate dermal protection
Other given operational condit	ions affecting workers exposure
Place of use: Indoor Operating temperature: <= 40 °C	
2.7	<b>Contributing scenario controlling worker exposure:</b> 6.7 Transfer of substance or mixture (charging and discharging) at non-dedicated facilities (PROC 8a)
Product characteristics	
Percentage (w/w) of substance in Physical form of the used produc	
Frequency and duration of use	
Duration of activity: <= 8 h/day	
Technical conditions and measure	ures to control dispersion from source towards the worker
Occupational Health and Safety I	l ventilation (1-3 air changes per hour) [Effectiveness, Inhalation: 0%] Management System: Advanced ffectiveness, Inhalation: 0%, Dermal: 0%]
Conditions and measures relate	ed to personal protection, hygiene and health evaluation
Respiratory protection: No [Effect Dermal protection: Yes (Chemica [Effectiveness, Dermal: 80%]	ctiveness, Inhalation: 0%] ally resistant gloves conforming to EN374) and (other) appropriate dermal protection
Other given operational condit	ions affecting workers exposure
Place of use: Indoor	
Operating temperature: <= 40 °C	



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	6.8 Transfer of substance or mixture (charging and discharging) at dedicated facilities (PROC 8b)	
Product characteristics		
Percentage (w/w) of substance in Physical form of the used produc		
Frequency and duration of use		
Duration of activity: <= 8 h/day		
Technical conditions and measured	res to control dispersion from source towards the worker	
Occupational Health and Safety M	l ventilation (1-3 air changes per hour) [Effectiveness, Inhalation: 0%] Management System: Advanced fectiveness, Inhalation: 0%, Dermal: 0%]	
Conditions and measures relate	ed to personal protection, hygiene and health evaluation	
Respiratory protection: No [Effect Dermal protection: Yes (Chemica [Effectiveness, Dermal: 80%]	tiveness, Inhalation: 0%] ally resistant gloves conforming to EN374) and (other) appropriate dermal protection	
Other given operational conditional	ons affecting workers exposure	
Place of use: Indoor Operating temperature: <= 40 °C		
2.9	<b>Contributing scenario controlling worker exposure:</b> 6.9 Transfer of substance or mixture into small containers (dedicated filling line, including weighing) (PROC 9)	
Product characteristics		
Percentage (w/w) of substance in Physical form of the used produc		
Frequency and duration of use		
Duration of activity: <= 8 h/day		
Technical conditions and measured	ares to control dispersion from source towards the worker	
Occupational Health and Safety M	l ventilation (1-3 air changes per hour) [Effectiveness, Inhalation: 0%] Management System: Advanced fectiveness, Inhalation: 0%, Dermal: 0%]	
Conditions and measures relate	ed to personal protection, hygiene and health evaluation	
Respiratory protection: No [Effect Dermal protection: Yes (Chemica [Effectiveness, Dermal: 80%]	ctiveness, Inhalation: 0%] ally resistant gloves conforming to EN374) and (other) appropriate dermal protection	
Other given operational condition	ons affecting workers exposure	
Place of use: Indoor Operating temperature: <= 40 °C		
2.10	<b>Contributing scenario controlling worker exposure:</b> 6.10 Roller application or brushing (PROC 10)	
Product characteristics		
Percentage (w/w) of substance in Physical form of the used produc		
Frequency and duration of use		
Duration of activity: <= 8 h/day		
Technical conditions and measured	ares to control dispersion from source towards the worker	
Ventilation working room: Gener Occupational Health and Safety M Local exhaust ventilation: No [Ef		
Conditions and measures relate	ed to personal protection, hygiene and health evaluation	



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[Effectiveness, Dermal: 80%]	lly resistant gloves conforming to EN374) and (other) appropriate dermal protection	
Other given operational conditi	ons affecting workers exposure	
Place of use: Indoor Operating temperature: <= 40 °C		
2.11	<b>Contributing scenario controlling worker exposure:</b> 6.11 Treatment of articles by dipping and pouring (PROC 13)	
Product characteristics		
Percentage (w/w) of substance in Physical form of the used product		
Frequency and duration of use		
Duration of activity: <= 8 h/day		
Technical conditions and measu	ires to control dispersion from source towards the worker	
Occupational Health and Safety N	l ventilation (1-3 air changes per hour) [Effectiveness, Inhalation: 0%] Aanagement System: Advanced fectiveness, Inhalation: 0%, Dermal: 0%]	
Conditions and measures relate	d to personal protection, hygiene and health evaluation	
Respiratory protection: No [Effec Dermal protection: Yes (Chemica [Effectiveness, Dermal: 80%]	tiveness, Inhalation: 0%] Illy resistant gloves conforming to EN374) and (other) appropriate dermal protection	
Other given operational conditi	ons affecting workers exposure	
Place of use: Indoor Operating temperature: <= 40 °C		
2.12	<b>Contributing scenario controlling worker exposure:</b> 6.12 Use as laboratory reagent (PROC 15)	
Product characteristics		
Percentage (w/w) of substance in Physical form of the used product		
Frequency and duration of use		
Duration of activity: <= 8 h/day		
Technical conditions and measu	ires to control dispersion from source towards the worker	
Occupational Health and Safety M	l ventilation (1-3 air changes per hour) [Effectiveness, Inhalation: 0%] Management System: Advanced fectiveness, Inhalation: 0%, Dermal: 0%]	
Conditions and measures relate	d to personal protection, hygiene and health evaluation	
Respiratory protection: No [Effec Dermal protection: No [Effective		
Other given operational conditi	ons affecting workers exposure	
Place of use: Indoor Operating temperature: <= 40 °C		
2.13	<b>Contributing scenario controlling worker exposure:</b> 6.13 Hand-mixing with intimate contact and only PPE available (PROC 19)	
Product characteristics		
Percentage (w/w) of substance in Physical form of the used product		
Frequency and duration of use		
Duration of activity: <= 8 h/day		
Technical conditions and measu	res to control dispersion from source towards the worker	



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Ventilation working room: General Occupational Health and Safety Ma				
Local exhaust ventilation: No [Effect				
Conditions and measures related	to personal prot	ection, hygiene and health	evaluation	
Respiratory protection: No [Effective Dermal protection: Yes (Chemically appropriate dermal protection [Effective]	resistant gloves	conforming to EN374 with s	specific acti	ivity training) and (other)
Other given operational condition	s affecting work	ters exposure		
Place of use: Indoor Operating temperature: <= 40 °C				
	<b>Contributing scenario controlling worker exposure:</b> 6.14 Manual maintenance (cleaning and repair) of machinery (PROC 28)			
Product characteristics				
Percentage (w/w) of substance in m Physical form of the used product: S				
Frequency and duration of use				
Duration of activity: <= 8 h/day				
Technical conditions and measure	es to control disp	persion from source toward	ls the work	ter
General ventilation: Basic general v Occupational Health and Safety Ma Local exhaust ventilation: No [Effect	nagement System	n: Advanced	veness, Inha	lation: 0%]
Conditions and measures related	to personal prot	ection, hygiene and health	evaluation	
Respiratory protection: No [Effectiv Dermal protection: Yes (Chemically [Effectiveness, Dermal: 80%]			(other) appr	opriate dermal protection
Other given operational condition	s affecting work	ters exposure		
Place of use: Indoor Operating temperature: <= 40 °C				
SECTION 3:	6.15 Exposure	e estimation		
3.1. Environment				
Release	Release estin	mation method	Explanat	ions
Water	Estimated re	lease rate	Local rele	ease rate: 3 kg/day
Air	Estimated re	lease rate	Local rele	ease rate: 0.5 kg/day
Non-Agricultural Soil	Estimated re	lease factor	Release fa	actor after on-site RMM: 0%
Protection target		Exposure concentration		Risk quantification (RCR)
Fresh water		Local PEC: 0.155 mg/l		0.3
Sedimentation (Fresh water)		Local PEC: 0.766 mg/kg dw		0.3
Marine water		Local PEC: 0.0155 mg/l		0.3
Sedimentation (Marine water)		Local PEC: 0.077 mg/kg dw		0.3
Sewage Treatment Plant		Local PEC: 1.497 mg/l		< 0.01
Agricultural soil		Local PEC: 0.017 mg/kg	dw	0.08
Man via Environment - Inhalat effects)	ion (Systemic	Concentration in air: 3.97E-5 mg/m <sup>3</sup>		< 0.01
Man via Environment - Oral		Exposure via food consun 9.7E-3 mg/kg bw/day	nption:	0.02
		JULE 5 mg/ ng 6 m/ duj		
Man via Environment – Combined r	outes	J. D. D. M. J. N. D. W. California		0.02
	outes			0.02



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Exposure route	Exposure estimate - Worker	Risk quantification (RCR)
Inhalation, Systemic effects, Long Term	1 mg/m <sup>3</sup>	0.12
Inhalation, Systemic effects, Acute	4 mg/m <sup>3</sup>	0.049
Dermal, Systemic effects, Long Term	0.69 mg/kg bw/day	0.058
Combined routes, Systemic effects, Long Term	0.07 mg/kg 0w/day	0.179
Contributing scenario controlling worker expose	ure: Chemical production where oppor	
4)	r in r	, , , , , , , , , , , , , , , , , , ,
Exposure route	Exposure estimate - Worker	Risk quantification (RCR)
Inhalation, Systemic effects, Long Term	5 mg/m <sup>3</sup>	0.602
Inhalation, Systemic effects, Acute	20 mg/m <sup>3</sup>	0.243
Dermal, Systemic effects, Long Term	1.372 mg/kg bw/day	0.116
Combined routes, Systemic effects, Long Term		0.719
Contributing scenario controlling worker expose	ure: Mixing or blending in batch proce	sses (PROC 5)
Exposure route	Exposure estimate - Worker	Risk quantification (RCR)
Inhalation, Systemic effects, Long Term	5 mg/m <sup>3</sup>	0.602
Inhalation, Systemic effects, Acute	20 mg/m <sup>3</sup>	0.243
Dermal, Systemic effects, Long Term	2.742 mg/kg bw/day	0.232
Combined routes, Systemic effects, Long Term		0.835
<b>Contributing scenario controlling worker expose</b> 7)	ure: Industrial spraying with Local Ex	haust Ventilation (LEV) (PROC
Exposure route	Exposure estimate - Worker	Risk quantification (RCR)
Inhalation, Systemic effects, Long Term	0.4 mg/m <sup>3</sup>	0.048
Inhalation, Systemic effects, Acute	0.4 mg/m <sup>3</sup>	< 0.01
Dermal, Systemic effects, Long Term	8.572 mg/kg bw/day	0.726
Combined routes, Systemic effects, Long Term		0.775
<b>Contributing scenario controlling worker expose</b> (PROC 7)	ure: Industrial spraying without Local	Exhaust Ventilation (LEV)
Exposure route	Exposure estimate - Worker	Risk quantification (RCR)
Inhalation, Systemic effects, Long Term	0.795 mg/m <sup>3</sup>	0.096
Inhalation, Systemic effects, Acute	0.795 mg/m <sup>3</sup>	< 0.01
Dermal, Systemic effects, Long Term	8.572 mg/kg bw/day	0.726
Combined routes, Systemic effects, Long Term		0.822
<b>Contributing scenario controlling worker expose</b> dedicated facilities (PROC 8a)	ure: Transfer of substance or mixture (	charging and discharging) at non-
Exposure route	Exposure estimate - Worker	Risk quantification (RCR)
Inhalation, Systemic effects, Long Term	5 mg/m <sup>3</sup>	0.602
Inhalation, Systemic effects, Acute	20 mg/m <sup>3</sup>	0.243
Dermal, Systemic effects, Long Term	2.742 mg/kg bw/day	0.232
Combined routes, Systemic effects, Long Term		0.835
<b>Contributing scenario controlling worker expose</b> dedicated facilities (PROC 8b)	ure: Transfer of substance or mixture (	charging and discharging) at non-
Exposure route	Exposure estimate - Worker	Risk quantification (RCR)
Exposure route Inhalation, Systemic effects, Long Term	Exposure estimate - Worker	Risk quantification (RCR) 0.12



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Dermal, Systemic effects, Long Te	rm	2.742 mg/kg bw/day	0.232
Combined routes, Systemic effects,	Long Term		0.353
<b>Contributing scenario controlling</b> filling line, including weighing) (P		re: Transfer of substance or mixture ir	nto small containers (dedicated
Exposure route		Exposure estimate - Worker	Risk quantification (RCR)
Inhalation, Systemic effects, Long	Term	5 mg/m <sup>3</sup>	0.602
Inhalation, Systemic effects, Acute		20 mg/m <sup>3</sup>	0.243
Dermal, Systemic effects, Long Te	rm	1.372 mg/kg bw/day	0.116
Combined routes, Systemic effects, Long Term			0.719
Contributing scenario controlling	g worker exposur	re: Roller application or brushing (PR	OC 10)
Exposure route		Exposure estimate - Worker	Risk quantification (RCR)
Inhalation, Systemic effects, Long	Term	3.59 mg/m <sup>3</sup>	0.433
Inhalation, Systemic effects, Acute		3.59 mg/m <sup>3</sup>	0.044
Dermal, Systemic effects, Long Te	rm	5.486 mg/kg bw/day	0.465
Combined routes, Systemic effects,	Long Term		0.897
Contributing scenario controlling	g worker exposur	e: Treatment of articles by dipping ar	nd pouring (PROC 13)
Exposure route		Exposure estimate - Worker	Risk quantification (RCR)
Inhalation, Systemic effects, Long	Term	0.525 mg/m³	0.063
Inhalation, Systemic effects, Acute		0.525 mg/m <sup>3</sup>	< 0.01
Dermal, Systemic effects, Long Te	rm	2.743 mg/kg bw/day	0.232
Combined routes, Systemic effects,	Long Term		0.296
Contributing scenario controlling	g worker exposur	e: Use as laboratory reagent (PROC	15)
Exposure route		Exposure estimate - Worker	Risk quantification (RCR)
Inhalation, Systemic effects, Long	Term	0.5 mg/m <sup>3</sup>	0.06
Inhalation, Systemic effects, Acute		2 mg/m <sup>3</sup>	0.024
Dermal, Systemic effects, Long Te	rm	0.34 mg/kg bw/day	0.029
Combined routes, Systemic effects,	Long Term		0.089
<b>Contributing scenario controlling</b> 19)	g worker exposur	e: Hand-mixing with intimate contact	t and only PPE available (PROC
Exposure route		Exposure estimate - Worker	Risk quantification (RCR)
Inhalation, Systemic effects, Long	Term	1.74 mg/m <sup>3</sup>	0.21
Inhalation, Systemic effects, Acute		1.74 mg/m <sup>3</sup>	0.021
Dermal, Systemic effects, Long Te	rm	7.072 mg/kg bw/day	0.599
Combined routes, Systemic effects,	Long Term		0.809
Contributing scenario controlling	worker exposur	e: Manual maintenance (cleaning and	repair) of machinery (PROC 28)
Exposure route		Exposure estimate - Worker	Risk quantification (RCR)
Inhalation, Systemic effects, Long	Term	5 mg/m <sup>3</sup>	0.602
Inhalation, Systemic effects, Acute		20 mg/m <sup>3</sup>	0.243
Dermal, Systemic effects, Long Te	rm	2.742 mg/kg bw/day	0.232
Combined routes, Systemic effects,	Long Term		0.835
SECTION 4:	6.16 Guidance the ES	to DU to evaluate whether he work	ks inside the boundaries set by
Remarks on exposure data from ex Stoffenmanager 8: Explanation: Inhalation exposure co		ools: nated using Stoffenmanager® (version	n 8)



- Activity/type of task: Handling of liquids at high pressure resulting in substantial generation of mist or spray/haze
- Distance to task: In the breathing zone of the worker (distance head-product < 1 m) (worst-case assumption)

- Local controls: No control measures at the source (refinement due to LEV done outside Stoffenmanager®, see below)

- Ventilation working room: General ventilation (mechanical)
- Volume of the working room: 100-1000 m3
- Regular cleaning of work area (daily): Yes
- Regular inspection and maintenance (at least monthly): Yes
- Presence of secondary emission sources (worst-case assumptions);
- Other workers using the same substance simultaneously: Yes

A period of evaporation, drying or curing after the activity (with prolonged emission of vapours): Yes The concentration during the task due to the activity undertaken is estimated to be 7.95 mg/m3, resulting in an exposure concentration of 0.4 mg/m3 due to the use of LEV with an effectiveness of 95% (TRA effectiveness). As the task is performed for 8 hours, the daily average concentration equals the task concentration. In accordance with the ECHA Guidance (Chapter R.14), this estimated concentration is therefore considered to be the short-term as well as the long-term inhalation exposure estimate (90th percentiles).

#### Stoffenmanager 8:

Explanation: Inhalation exposure concentration estimated using Stoffenmanager® (version 8)

- Activity/type of task: Handling of liquids at high pressure resulting in substantial generation of mist or spray/haze
- Distance to task: In the breathing zone of the worker (distance head-product < 1 m) (worst-case assumption)
- Local controls: No control measures at the source
- Ventilation working room: General ventilation (mechanical)
- Volume of the working room: 100-1000 m3
- Regular cleaning of work area (daily): Yes
- Regular inspection and maintenance (at least monthly): Yes
- Presence of secondary emission sources (worst-case assumptions);
- Other workers using the same substance simultaneously: Yes
- A period of evaporation, drying or curing after the activity (with prolonged emission of vapours): Yes

The concentration during the task due to the activity undertaken is estimated to be 7.95 mg/m3, resulting in an exposure concentration of 0.795 mg/m3 due to the use of respiratory protection with an effectiveness of 90%. As the task is performed for 8 hours, the daily average concentration equals the task concentration. In accordance with the ECHA Guidance (Chapter R.14), this estimated concentration is therefore considered to be the short-term as well as the long-term

inhalation exposure estimate (90th percentiles).

Stoffenmanager 8:

Explanation: Inhalation exposure concentration estimated using Stoffenmanager® (version 8)

- Activity/type of task: Handling of liquids on large surfaces or large work pieces
- Distance to task: In the breathing zone of the worker (distance head-product < 1 m) (worst-case assumption)
- Local controls: No control measures at the source
- Ventilation working room: General ventilation (mechanical)
- Volume of the working room: 100-1000 m3
- Regular cleaning of work area (daily): Yes
- Regular inspection and maintenance (at least monthly): Yes
- Presence of secondary emission sources (worst-case assumptions);
- Other workers using the same substance simultaneously: Yes

A period of evaporation, drying or curing after the activity (with prolonged emission of vapours): Yes

The concentration that can be inhaled by the worker during the task due to the activity undertaken is obtained. As the task is performed for 8 hours, the daily average concentration equals the task concentration. In accordance with the ECHA Guidance (Chapter R.14), this estimated concentration is therefore considered to be the short-term as well as the long-term inhalation exposure estimate (90th percentiles).

### ECETOC TRA Workers 3.1:

Explanation: As solid is used as value for CSA, while liquid is used, it is considered appropriate to refine the exposure estimates, using the standalone version of TRA Workers (v3.1). The vapour pressure at operating temperature (40°C) used for the calculation is 3.71E-8 Pa (as calculated by Chesar).

Stoffenmanager 8:

Explanation: Inhalation exposure concentration estimated using Stoffenmanager® (version 8)

- Activity/type of task: Handling of liquids using low pressure, low speed or on medium-sized surfaces
- Distance to task: In the breathing zone of the worker (distance head-product < 1 m) (worst-case assumption)
- Local controls: No control measures at the source
- Ventilation working room: General ventilation (mechanical)
- Volume of the working room: 100-1000 m3
- Regular cleaning of work area (daily): Yes



- Regular inspection and maintenance (at least monthly): Yes

- Presence of secondary emission sources (worst-case assumptions);

Other workers using the same substance simultaneously: Yes

A period of evaporation, drying or curing after the activity (with prolonged emission of vapours): Yes

The concentration that can be inhaled by the worker during the task due to the activity undertaken is obtained. As the task is performed for 8 hours, the daily average concentration equals the task concentration. In accordance with the ECHA Guidance (Chapter R.14), this estimated concentration is therefore considered to be the short-term as well as the long-term inhalation exposure estimate (90th percentiles).

ECETOC TRA Workers 3.1:

Explanation: The exposure estimates for PROC 8a are used, as TRA Workers cannot predict exposure for PROC 28 and these estimates can be considered suitable for estimating exposures during manual maintenance.

# 7. Exposure Scenario 7: Widespread use by professional workers - Use as additive in intumescent coatings SECTION 1: Title of exposure scenario

SECTI	ON 1:	Title of exposure scenario	
		Widespread use by professional workers - Use as additiv	e in intumescent coatings
Contril	outing scenario controllin	ng environmental exposure	
CS1	Use as additive in intum	escent coatings	ERC5
Contril	outing scenario controllin	ng worker exposure	
CS2 Mixing or blending in batch processes PROC5			PROC5
CS3	Transfer of substance or mixture (charging and discharging) at non-dedicated facilitiesPROC8a		
CS4	Transfer of substance or	mixture (charging and discharging) at dedicated facilities	PROC8b
CS5	Transfer of substance or including weighing)	mixture into small containers (dedicated filling line,	PROC9
CS6	Roller application or bru	Ishing	PROC10
	Non industrial spraying		PROC11
CS7	Treatment of articles by	dipping and pouring	PROC13
CS8	Hand-mixing with intimate contact and only PPE available		PROC19
CS9	Manual maintenance (cl	eaning and repair) of machinery	PROC28
Subseq	uent service life exposure	e scenario(s):	
ES10	Service life (professiona	l worker) - Intumescent coatings - Professional Workers	
ES12	Service life (consumers)	- Intumescent coating – Consumers	
SECTI	ON 2:	Conditions of use	
2.1		<b>Contributing scenario controlling environmental exposu</b> 7.1 Use as additive in intumescent coatings (ERC 8c, ERC 8	
Amoun	t used, frequency and du	uration of use (or from service life)	
Daily lo	ocal widespread use amour	nt: not relevant for the assessment as scenario specific release	s are estimated
Conditi	ons and measures related t	o biological sewage treatment plant	
Dischar	cal STP: Standard [Effecti ge rate of STP: >= 2E3 mí tion of the STP sludge on	3/day	
Other g	given operational condition	ons affecting environmental exposure	
Receivi	ng surface water flow: >=	1.8E4 m3/day	
2.2		<b>Contributing scenario controlling worker exposure:</b> 7.2 Mixing or blending in batch processes (PROC 5)	
Produc	t characteristics		
	age (w/w) of substance in l form of the used product	mixture/article: <= 100 % : Solid (medium dusty form)	
	ncy and duration of use		



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Duration of activity - 9 h/day	
Duration of activity: <= 8 h/day	
	res to control dispersion from source towards the worker
Occupational Health and Safety M	ventilation (1-3 air changes per hour) [Effectiveness, Inhalation: 0%] Management System: Basic fectiveness, Inhalation: 0%, Dermal: 0%]
Conditions and measures relate	d to personal protection, hygiene and health evaluation
Respiratory protection: No [Effec Dermal protection: Yes (Chemica [Effectiveness, Dermal: 80%]	tiveness, Inhalation: 0%] Ily resistant gloves conforming to EN374) and (other) appropriate dermal protection
Other given operational condition	ons affecting workers exposure
Place of use: Indoor Operating temperature: <= 40 °C	
2.3	<b>Contributing scenario controlling worker exposure:</b> 7.3 Transfer of substance or mixture (charging and discharging) at non-dedicated facilities (PROC 8a)
Product characteristics	
Percentage (w/w) of substance in Physical form of the used product	
Frequency and duration of use	
Duration of activity: <= 8 h/day	
Technical conditions and measu	res to control dispersion from source towards the worker
Occupational Health and Safety M	ventilation (1-3 air changes per hour) [Effectiveness, Inhalation: 0%] Ianagement System: Basic fectiveness, Inhalation: 0%, Dermal: 0%]
Conditions and measures relate	d to personal protection, hygiene and health evaluation
Respiratory protection: No [Effec Dermal protection: Yes (Chemica [Effectiveness, Dermal: 80%]	tiveness, Inhalation: 0%] Ily resistant gloves conforming to EN374) and (other) appropriate dermal protection
Other given operational condition	ons affecting workers exposure
Place of use: Indoor Operating temperature: <= 40 °C	
2.4	<b>Contributing scenario controlling worker exposure:</b> 7.4 Transfer of substance or mixture (charging and discharging) at dedicated facilities (PROC 8b)
Product characteristics	
Percentage (w/w) of substance in Physical form of the used product	
Frequency and duration of use	
Duration of activity: <= 8 h/day	
Technical conditions and measu	res to control dispersion from source towards the worker
Occupational Health and Safety M	ventilation (1-3 air changes per hour) [Effectiveness, Inhalation: 0%] Ianagement System: Basic fectiveness, Inhalation: 0%, Dermal: 0%]
Conditions and measures relate	d to personal protection, hygiene and health evaluation
Respiratory protection: No [Effec Dermal protection: Yes (Chemica [Effectiveness, Dermal: 80%]	tiveness, Inhalation: 0%] Ily resistant gloves conforming to EN374) and (other) appropriate dermal protection
Other given operational condition	ons affecting workers exposure
Place of use: Indoor Operating temperature: <= 40 °C	



QATAR MELAMINE CO.	
2.5	Contributing scenario controlling worker exposure: 7.5 Transfer of substance or mixture into small containers (dedicated filling line, including weighing) (PROC 9)
Product characteristics	
Percentage (w/w) of substance in Physical form of the used produc	
Frequency and duration of use	
Duration of activity: <= 8 h/day	
Technical conditions and measured	ares to control dispersion from source towards the worker
Occupational Health and Safety M	l ventilation (1-3 air changes per hour) [Effectiveness, Inhalation: 0%] Management System: Basic ffectiveness, Inhalation: 0%, Dermal: 0%]
Conditions and measures relate	ed to personal protection, hygiene and health evaluation
Respiratory protection: No [Effect Dermal protection: Yes (Chemica [Effectiveness, Dermal: 80%]	ctiveness, Inhalation: 0%] ally resistant gloves conforming to EN374) and (other) appropriate dermal protection
Other given operational condition	ions affecting workers exposure
Place of use: Indoor Operating temperature: <= 40 °C	
2.6	<b>Contributing scenario controlling worker exposure:</b> 7.6 Roller application or brushing (PROC 10)
Product characteristics	
Percentage (w/w) of substance in Physical form of the used produc	
Frequency and duration of use	
Duration of activity: <= 8 h/day	
Technical conditions and measured	ures to control dispersion from source towards the worker
Ventilation working room: Gener Occupational Health and Safety M Local exhaust ventilation: No [Ef	
Conditions and measures relate	ed to personal protection, hygiene and health evaluation
Respiratory protection: No [Effec Dermal protection: Yes (Chemica [Effectiveness, Dermal: 80%]	ctiveness, Inhalation: 0%] ally resistant gloves conforming to EN374) and (other) appropriate dermal protection
Other given operational conditional	ions affecting workers exposure
Place of use: Indoor Operating temperature: <= 40 °C	
2.7	<b>Contributing scenario controlling worker exposure:</b> 7.7 Non industrial spraying (PROC 11)
Product characteristics	
Percentage (w/w) of substance in Physical form of the used produc	
Frequency and duration of use	
Duration of activity: <= 8 h/day	
Technical conditions and measure	ures to control dispersion from source towards the worker
Ventilation working room: Gener Occupational Health and Safety M Local exhaust ventilation: No [Eff	
Conditions and measures relate	ed to personal protection, hygiene and health evaluation



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	irator with APF of 20) [Effectiveness, Inhala lly resistant gloves conforming to EN374 wit			
appropriate dermal protection [Ef				
Other given operational conditi	ons affecting workers exposure			
Place of use: Indoor Operating temperature: <= 40 °C				
2.8		<b>Atributing scenario controlling worker exposure:</b> Treatment of articles by dipping and pouring (PROC 13)		
Product characteristics				
Percentage (w/w) of substance in Physical form of the used product				
Frequency and duration of use				
Duration of activity: <= 8 h/day				
Technical conditions and measu	res to control dispersion from source towa	ards the worker		
Occupational Health and Safety M	ventilation (1-3 air changes per hour) [Effec Ianagement System: Basic fectiveness, Inhalation: 0%, Dermal: 0%]	tiveness, Inhalation: 0%]		
Conditions and measures relate	d to personal protection, hygiene and healt	th evaluation		
Respiratory protection: No [Effec Dermal protection: Yes (Chemica [Effectiveness, Dermal: 80%]	tiveness, Inhalation: 0%] lly resistant gloves conforming to EN374) an	d (other) appropriate dermal protection		
Other given operational conditi	ons affecting workers exposure			
Place of use: Indoor Operating temperature: <= 40 °C				
2.9	<b>Contributing scenario controlling worker</b> 7.9 Manual maintenance (cleaning and repa			
Product characteristics				
Percentage (w/w) of substance in Physical form of the used product				
Frequency and duration of use				
Duration of activity: <= 8 h/day				
Technical conditions and measu	res to control dispersion from source towa	rds the worker		
Occupational Health and Safety M	ventilation (1-3 air changes per hour) [Effec Ianagement System: Basic fectiveness, Inhalation: 0%, Dermal: 0%]	tiveness, Inhalation: 0%]		
Conditions and measures relate	d to personal protection, hygiene and healt	th evaluation		
Respiratory protection: No [Effec Dermal protection: Yes (Chemica [Effectiveness, Dermal: 80%]	tiveness, Inhalation: 0%] lly resistant gloves conforming to EN374) an	d (other) appropriate dermal protection		
Other given operational conditi	ons affecting workers exposure			
Place of use: Indoor Operating temperature: <= 40 °C				
SECTION 3:	7.10 Exposure estimation			
3.1. Environment				
Release	Release estimation method	Explanations		
Water	Estimated release rate	Local release rate: 0 kg/day		
Air	Estimated release rate	Local release rate: 0 kg/day		
Non-Agricultural Soil	Estimated release factor	Release factor after on-site RMM: 0%		
Protection target	Exposure concentration	on Risk quantification (RCR)		



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Fresh waterLocal PEC: 5.0E-3 mg/l0.01Sedimentation (Fresh water)Local PEC: 0.025 mg/kg dw0.01Marine waterLocal PEC: 5.0E 4 mg/l0.01Sedimentation (Marine water)Local PEC: 2.4E-3 mg/kg dw0.01Agricultural soilLocal PEC: 2.2E-12 mg/kg dw<0.01Agricultural soilLocal PEC: 2.2E-12 mg/kg dw<0.01Agricultural soilLocal PEC: 2.2E-12 mg/kg dw<0.01Man via Environment - Inhalation (Systemi)Concentration in air: 1.62E-21 mg/m <sup>3</sup> <0.01Man via Environment - Combined routesExposure in food consumption: 1.74E-4 mg/kg bw/day<0.012. WorkerContributing scenario controlling worker exposure: Trading scenario controlling worker exposure: Tradification (RCR) Inhalation, Systemic effects, Long TermSigm/m <sup>3</sup> 0.602Inhalation, Systemic effects, Long Term2.742 mg/kg bw/day0.2320.031Contributing scenario controlling worker exposure: Tradification (RCR) Inhalation, Systemic effects, Long Term0.525 mg/m <sup>3</sup> 0.043Inhalation, Systemic effects, Long Term0.525 mg/m <sup>3</sup> 0.0310.043Dermal, Systemic effects, Long Term0.2260.0110.232Contributing scenario controlling worker exposure: Tradifier of substance or mixture (t-Ling) ng ma di discha			
Marine water     Local PEC: 5.0E-4 mg/l     0.01       Sedimentation (Marine water)     Local PEC: 2.4E-3 mg/kg dw     0.01       Sewage Treatment Plant     Local PEC: 2.4E-3 mg/kg dw     0.01       Sewage Treatment Plant     Local PEC: 2.4E-3 mg/kg dw      0.01       Man via Environment - Inhulation (Systemic effects)     Local PEC: 2.32E-12 mg/kg dw         Man via Environment - Oral     Exposure to food consumption: 1.74E-4 mg/kg bw/day         Man via Environment - Combined routes           32. Worker     Exposure info docd consumption: 1.74E-4 mg/kg bw/day          Contributing scenario controlling worker exposure: Mixing or blending in batch processes (PROC 5)          Exposure route     Exposure form           Inhulation, Systemic effects, Long Term     5 mg/m <sup>3</sup> 0.602         Dernal, Systemic effects, Long Term     2.742 mg/kg bw/day     0.232        Combined routes, Systemic effects, Long Term     0.525 mg/m <sup>3</sup> 0.063        Inhalation, Systemic effects, Long Term     0.525 mg/m <sup>3</sup> 0.063        Inhalation, Systemic effects, Long Term     0.525 mg/m <sup>3</sup> 0.063        Inhalation, Systemic effects, Long Term     0.525 mg/m <sup>3</sup>	Fresh water	Local PEC: 5.0E-3 mg/l	0.01
Sedimentation (Marine water)     Local PEC: 2.4E-3 mg/kg dw     0.01       Sewage Treatment Plant     Local PEC: 0 mg/l     <0.01	Sedimentation (Fresh water)	Local PEC: 0.025 mg/kg dw	0.01
Sewage Treatment Plant         Local PEC: 0 mg/l         < 0.01	Marine water	Local PEC: 5.0E-4 mg/l	0.01
Agricultural soil     Local PEC: 2.52E-12 mg/kg dw     < 0.01	Sedimentation (Marine water)	Local PEC: 2.4E-3 mg/kg dw	0.01
Man via Environment - Inhalation (Systemic effects)     Concentration in sir: 1.62E 21 mg/m³     < 0.01	Sewage Treatment Plant	Local PEC: 0 mg/l	< 0.01
effects)1.62E-21 mg/m²Man via Environment - OralExposure via food consumption: 1.74E-4 mg/kg bw/day<0.01	Agricultural soil	Local PEC: 2.52E-12 mg/kg dw	< 0.01
1.74E-4 mg/kg bw/dayMan via Environment – Combined routes<.0.01			< 0.01
3.2. Worker         Contributing scenario controlling worker exposure: Mixing or blending in batch processes (PROC 5)         Exposure route       Exposure estimate - Worker       Risk quantification (RCR)         Inhalation, Systemic effects, Long Term       5 mg/m³       0.602         Combined routes, Systemic effects, Acute       20 mg/m³       0.243         Combined routes, Systemic effects, Long Term       2.742 mg/kg bw/day       0.232         Combined routes, Systemic effects, Long Term       0.835       Contributing scenario controlling worker exposure: Transfer of substance or mixture (charging) and discharging) at non-dedicated facilities (PROC 8a)         Exposure route       Exposure estimate - Worker       Risk quantification (RCR)         Inhalation, Systemic effects, Long Term       0.525 mg/m³       0.063         Inhalation, Systemic effects, Long Term       2.743 mg/kg bw/day       0.232         Combined routes, Systemic effects, Long Term       2.743 mg/kg bw/day       0.232         Combined routes, Systemic effects, Long Term       2.743 mg/kg bw/day       0.232         Combined routes, Systemic effects, Long Term       5 mg/m³       0.602         Inhalation, Systemic effects, Long Term       5 mg/m³       0.602         Inhalation, Systemic effects, Long Term       5 mg/m³       0.602         Inhalation, Systemic effects, Long	Man via Environment - Oral		< 0.01
Contributing scenario controlling worker exposure: Mixing or blending in batch processes (PROC 5)Exposure routeExposure estimate - WorkerRisk quantification (RCR)Inhalation, Systemic effects, Long Term5 mg/m³0.602Inhalation, Systemic effects, Acute20 mg/m³0.243Dermal, Systemic effects, Long Term2.742 mg/kg bw/day0.232Combined routes, Systemic effects, Long Term2.742 mg/kg bw/day0.232Contributing scenario controlling worker exposure: Transfer of substance or mixture (barring) at non- dedicated facilities (PROC 8a)Risk quantification (RCR)Inhalation, Systemic effects, Long Term0.525 mg/m³0.063Inhalation, Systemic effects, Long Term0.525 mg/m³<0.01	Man via Environment – Combined routes		< 0.01
Exposure routeExposure estimate - WorkerRisk quantification (RCR)Inhalation, Systemic effects, Long Term5 mg/m³0.602Inhalation, Systemic effects, Acute20 mg/m³0.243Dermal, Systemic effects, Long Term2.742 mg/kg bw/day0.232Combined routes, Systemic effects, Long Term0.8350.835Contributing scenario controlling worker exposure:Transfer of substance or mixture (charging and discharging) at non- dedicated facilities (PROC 8a)Risk quantification (RCR)Inhalation, Systemic effects, Long Term0.525 mg/m³0.063Inhalation, Systemic effects, Long Term0.525 mg/m³0.063Inhalation, Systemic effects, Long Term0.525 mg/m³0.232Combined routes, Systemic effects, Long Term0.743 mg/kg bw/day0.232Combined routes, Systemic effects, Long Term0.743 mg/kg bw/day0.232Combined routes, Systemic effects, Long Term0.743 mg/kg bw/day0.232Combined routes, Systemic effects, Long Term0.2960.296Contributing scenario controlling worker exposure: Transfer of substance or mixture (charging and discharging) at non- dedicated facilities (PROC 8b)8isk quantification (RCR)Inhalation, Systemic effects, Long Term5 mg/m³0.602Inhalation, Systemic effects, Long Term5 mg/m³0.602Inhalation, Systemic effects, Long Term5 mg/m³0.602Inhalation, Systemic effects, Long Term0.742 mg/kg bw/day0.232Combined routes, Systemic effects, Long Term2.742 mg/kg bw/day0.232Contributing scena	3.2. Worker		
Inhalation, Systemic effects, Long Term5 mg/m³0.602Inhalation, Systemic effects, Acute20 mg/m³0.243Dermal, Systemic effects, Long Term2.742 mg/kg bw/day0.232Combined routes, Systemic effects, Long Term0.8350.835Contributing scenario controlling worker exposure: Exposure estimate - WorkerRisk quantification (RCR)Inhalation, Systemic effects, Long Term0.525 mg/m³0.063Inhalation, Systemic effects, Long Term0.525 mg/m³0.063Inhalation, Systemic effects, Long Term0.525 mg/m³0.232Combined routes, Systemic effects, Long Term0.743 mg/kg bw/day0.232Combined routes, Systemic effects, Long Term0.2960.206Contributing scenario controlling worker exposure: Exposure routeRisk quantification (RCR)Inhalation, Systemic effects, Long Term0.2060.202Inhalation, Systemic effects, Long Term0.2060.202Combined routes, Systemic effects, Long Term5 mg/m³0.602Inhalation, Systemic effects, Long Term5 mg/m³0.602Inhalation, Systemic effects, Long Term0.2430.243Dermal, Systemic effects, Long Term0.2420.232Combined routes, Systemic effects, Long Term5 mg/m³0.602Inhalation, Systemic effects, Long Term1.372 mg/kg bw/day0.243 </td <td>Contributing scenario controlling worker exposu</td> <td>re: Mixing or blending in batch process</td> <td>ses (PROC 5)</td>	Contributing scenario controlling worker exposu	re: Mixing or blending in batch process	ses (PROC 5)
Inhalation, Systemic effects, Acute20 mg/m³0.243Dermal, Systemic effects, Long Term2.742 mg/kg bw/day0.232Combined routes, Systemic effects, Long Term0.835Contributing scenario controlling worker exposure:Transfer of substance or mixture (charging and discharging) at non- dedicated facilities (PROC 8a)Exposure routeExposure estimate - WorkerRisk quantification (RCR)Inhalation, Systemic effects, Long Term0.525 mg/m³0.063Inhalation, Systemic effects, Long Term0.723<0.01	Exposure route	Exposure estimate - Worker	Risk quantification (RCR)
Dermal, Systemic effects, Long Term2.742 mg/kg bw/day0.232Combined routes, Systemic effects, Long Term0.835Contributing scenario controlling worker exposure:Transfer of substance or mixture (charging and discharging) at non- dedicated facilities (PROC 8a)Exposure routeExposure estimate - WorkerRisk quantification (RCR)Inhalation, Systemic effects, Long Term0.525 mg/m³0.063Inhalation, Systemic effects, Long Term2.743 mg/kg bw/day0.232Combined routes, Systemic effects, Long Term2.743 mg/kg bw/day0.232Contributing scenario controlling worker exposure:Transfer of substance or mixture (charging and discharging) at non- dedicated facilities (PROC 8b)Exposure routeExposure estimate - WorkerRisk quantification (RCR)Inhalation, Systemic effects, Long Term5 mg/m³0.602Inhalation, Systemic effects, Long Term2.742 mg/kg bw/day0.232Combined routes, Systemic effects, Long Term2.742 mg/kg bw/day0.232Combined routes, Systemic effects, Long Term5 mg/m³0.602Inhalation, Systemic effects, Long Term2.742 mg/kg bw/day0.232Combined routes, Systemic effects, Long Term2.742 mg/kg bw/day0.243Inhalation, Sys	Inhalation, Systemic effects, Long Term	5 mg/m <sup>3</sup>	0.602
Combined routes, Systemic effects, Long Term0.835Contributing scenario controlling worker exposure: Transfer of substance or mixture (charging) at non- dedicated facilities (PROC 8a)Exposure estimate - WorkerRisk quantification (RCR)Inhalation, Systemic effects, Long Term0.525 mg/m³0.063Inhalation, Systemic effects, Acute0.525 mg/m³0.0232Combined routes, Systemic effects, Long Term2.743 mg/kg bw/day0.232Combined routes, Systemic effects, Long Term0.2960.296Contributing scenario controlling worker exposure: Transfer of substance or mixture (charging) at non- dedicated facilities (PROC 8b)Risk quantification (RCR)Inhalation, Systemic effects, Long Term5 mg/m³0.602Inhalation, Systemic effects, Long Term5 mg/m³0.602Inhalation, Systemic effects, Long Term2.742 mg/kg bw/day0.232Combined routes, Systemic effects, Long Term0.2960.243Dermal, Systemic effects, Long Term2.742 mg/kg bw/day0.232Combined routes, Systemic effects, Long Term0.8350.602Inhalation, Systemic effects, Long Term2.742 mg/kg bw/day0.232Combined routes, Systemic effects, Long Term0.2430.602Inhalation, Systemic effects, Long Term0.7190.602Inhalation, Systemic effects, Long Term5 mg/m³0.602Inhalation, Systemic effects, Long Term1.372 mg/kg bw/day0.116Combined routes, Systemic effects, Long Term0.719Contributing scenario controlling worker exposure:Risk quantification (R	Inhalation, Systemic effects, Acute	20 mg/m <sup>3</sup>	0.243
Contributing scenario controlling worker exposure: Transfer of substance or mixture (charging and discharging) at non- dedicated facilities (PROC 8a)Exposure routeExposure estimate - WorkerRisk quantification (RCR)Inhalation, Systemic effects, Long Term0.525 mg/m³0.063Inhalation, Systemic effects, Long Term0.525 mg/m³0.063Dermal, Systemic effects, Long Term2.743 mg/kg bw/day0.232Combined routes, Systemic effects, Long Term0.2960.0296Contributing scenario controlling worker exposure: Transfer of substance or mixture (charging) at non- dedicated facilities (PROC 8b)Exposure routeExposure estimate - WorkerRisk quantification (RCR)Inhalation, Systemic effects, Long Term5 mg/m³0.602Inhalation, Systemic effects, Long Term5 mg/m³0.602Inhalation, Systemic effects, Long Term2.742 mg/kg bw/day0.232Combined routes, Systemic effects, Long Term2.742 mg/kg bw/day0.232Combined routes, Systemic effects, Long Term2.742 mg/kg bw/day0.232Combined routes, Systemic effects, Long Term0.8350.602Inhalation, Systemic effects, Long Term2.742 mg/kg bw/day0.835Exposure routeExposure estimate - WorkerRisk quantification (RCR)Inhalation, Systemic effects, Long Term0.2430.243Dermal, Systemic effects, Long Term5 mg/m³0.602Inhalation, Systemic effects, Long Term5 mg/m³0.602Inhalation, Systemic effects, Long Term1.372 mg/kg bw/day0.116 <td>Dermal, Systemic effects, Long Term</td> <td>2.742 mg/kg bw/day</td> <td>0.232</td>	Dermal, Systemic effects, Long Term	2.742 mg/kg bw/day	0.232
dedicated facilities (PROC 8a)Exposure estimate - WorkerRisk quantification (RCR)Inhalation, Systemic effects, Long Term0.525 mg/m³0.063Inhalation, Systemic effects, Acute0.525 mg/m³<0.01	Combined routes, Systemic effects, Long Term		0.835
Inhalation, Systemic effects, Long Term0.525 mg/m³0.063Inhalation, Systemic effects, Acute0.525 mg/m³<0.01		re: Transfer of substance or mixture (cl	harging and discharging) at non-
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Dermal, Systemic effects, Long Term2.743 mg/kg bw/day0.232Combined routes, Systemic effects, Long Term0.296Contributing scenario controlling worker exposure: transfer of substance or mixture (charging) at non- dedicated facilities (PROC 8b)Risk quantification (RCR)Exposure routeExposure estimate - WorkerRisk quantification (RCR)Inhalation, Systemic effects, Long Term5 mg/m³0.602Inhalation, Systemic effects, Long Term2.742 mg/kg bw/day0.232Combined routes, Systemic effects, Long Term2.742 mg/kg bw/day0.232Combined routes, Systemic effects, Long Term0.8350.835Contributing scenario controlling worker exposure: Transfer of substance or mixture into- sulling ine, including weighing) (PROC 9)0.602Inhalation, Systemic effects, Long Term5 mg/m³0.602Inhalation, Systemic effects, Long Term1.372 mg/kg bw/day0.243Dermal, Systemic effects, Long Term1.372 mg/kg bw/day0.116Contributing scenario controlling worker exposure: Roller application or brushing (PROC V)VExposure routeExposure estimate - WorkerRisk quantification (RCR)Inhalation, Systemic effects, Long Term3.61 mg/m³0.435Contributing scenario controlling worker exposure: Roller application or brushing (PROC V)VExposure routeExposure estimate -	Inhalation, Systemic effects, Long Term	0.525 mg/m <sup>3</sup>	0.063
Combined routes, Systemic effects, Long Term0.296Contributing scenario controlling worker exposure:Transfer of substance or mixture (charging and discharging) at non- dedicated facilities (PROC 8b)Exposure routeExposure estimate - WorkerRisk quantification (RCR)Inhalation, Systemic effects, Long Term5 mg/m³0.602Inhalation, Systemic effects, Long Term2.742 mg/kg bw/day0.232Combined routes, Systemic effects, Long Term2.742 mg/kg bw/day0.232Combined routes, Systemic effects, Long Term0.8350.602Contributing scenario controlling worker exposure:Transfer of substance or mixture intoExposure routeExposure estimate - WorkerRisk quantification (RCR)Inhalation, Systemic effects, Long Term0.6020.602Inhalation, Systemic effects, Long Term5 mg/m³0.602Inhalation, Systemic effects, Long Term5 mg/m³0.602Inhalation, Systemic effects, Long Term5 mg/m³0.602Inhalation, Systemic effects, Long Term1.372 mg/kg bw/day0.116Combined routes, Systemic effects, Long Term1.372 mg/kg bw/day0.116Combined routes, Systemic effects, Long Term3.61 mg/m³0.435Inhalation, Systemic effects, Long Term3.61 mg/m³0.435Inhalation, Systemic effects, Long Term3.61 mg/m³0.445Exposure routeExposure estimate - WorkerRisk quantification (RCR)Inhalation, Systemic effects, Long Term3.61 mg/m³0.435Inhalation, Systemic effects, Long Term3.61 mg/	Inhalation, Systemic effects, Acute	0.525 mg/m <sup>3</sup>	< 0.01
Contributing scenario controlling worker exposure: Transfer of substance or mixture (charging) at non-dedicated facilities (PROC 8b)Exposure routeExposure estimate - WorkerRisk quantification (RCR)Inhalation, Systemic effects, Long Term5 mg/m³0.602Inhalation, Systemic effects, Acute20 mg/m³0.243Dermal, Systemic effects, Long Term2.742 mg/kg bw/day0.232Combined routes, Systemic effects, Long Term0.8350.602Contributing scenario controlling worker exposure: Transfer of substance or mixture into small containers (dedicated filling line, including weighing) (PROC 9)Exposure routeExposure estimate - WorkerRisk quantification (RCR)Inhalation, Systemic effects, Long Term5 mg/m³0.602Inhalation, Systemic effects, Long Term1.372 mg/kg bw/day0.116Combined routes, Systemic effects, Long Term0.7190.719Contributing scenario controlling worker exposure: Roller application or brushing (PROC 10)Exposure routeExposure estimate - WorkerRisk quantification (RCR)Inhalation, Systemic effects, Long Term3.61 mg/m³0.435Inhalation, Systemic effects, Long Term3.61 mg/m³0.435Inhalation, Systemic effects, Long Term3.61 mg/m³0.435Inhalation, Systemic effects, Long Term3.61 mg/m³0.445Inha	Dermal, Systemic effects, Long Term	2.743 mg/kg bw/day	0.232
dedicated facilities (PROC 8b)Exposure estimate - WorkerRisk quantification (RCR)Inhalation, Systemic effects, Long Term5 mg/m³0.602Inhalation, Systemic effects, Acute20 mg/m³0.243Dermal, Systemic effects, Long Term2.742 mg/kg bw/day0.232Combined routes, Systemic effects, Long Term0.8350.602Contributing scenario controlling worker exposure filling line, including weighing) (PROC 9)0.8350.602Exposure routeExposure estimate - WorkerRisk quantification (RCR)Inhalation, Systemic effects, Long Term5 mg/m³0.602Inhalation, Systemic effects, Long Term5 mg/m³0.602Inhalation, Systemic effects, Long Term5 mg/m³0.602Inhalation, Systemic effects, Long Term1.372 mg/kg bw/day0.116Combined routes, Systemic effects, Long Term0.7190.719Contributing scenario controlling worker exposure terter to the systemic effects, Long Term0.435Contributing scenario controlling worker exposure terter to the systemic effects, Long Term0.435Exposure routeExposure estimate - WorkerRisk quantification (RCR)Inhalation, Systemic effects, Long Term3.61 mg/m³0.435Inhalation, Systemic effects, Long Term3.61 mg/m³0.435Inhalation, Systemic effects, Acute3.61 mg/m³0.444Dermal, Systemic effects, Long Term5.486 mg/kg bw/day0.465	Combined routes, Systemic effects, Long Term		0.296
Inhalation, Systemic effects, Long Term5 mg/m³0.602Inhalation, Systemic effects, Acute20 mg/m³0.243Dermal, Systemic effects, Long Term2.742 mg/kg bw/day0.232Combined routes, Systemic effects, Long Term0.835Contributing scenario controlling worker exposure: Transfer of substance or mixture into small containers (dedicated filling line, including weighing) (PROC 9)Exposure routeExposure estimate - WorkerRisk quantification (RCR)Inhalation, Systemic effects, Long Term5 mg/m³0.602Inhalation, Systemic effects, Long Term5 mg/m³0.602Inhalation, Systemic effects, Long Term1.372 mg/kg bw/day0.116Combined routes, Systemic effects, Long Term1.372 mg/kg bw/day0.719Contributing scenario controlling worker exposure: Roller application or brushing (PROC 10)Exposure routeRisk quantification (RCR)Inhalation, Systemic effects, Long Term3.61 mg/m³0.4350.435Inhalation, Systemic effects, Long Term3.61 mg/m³0.435Inhalation, Systemic effects, Long Term3.61 mg/m³0.445		re: Transfer of substance or mixture (cl	harging and discharging) at non-
Inhalation, Systemic effects, Acute20 mg/m³0.243Dermal, Systemic effects, Long Term2.742 mg/kg bw/day0.232Combined routes, Systemic effects, Long Term0.835Contributing scenario controlling worker exposure: Transfer of substance or mixture into small containers (dedicated filling line, including weighing) (PROC 9)NaiseExposure routeExposure estimate - WorkerRisk quantification (RCR)Inhalation, Systemic effects, Long Term5 mg/m³0.602Inhalation, Systemic effects, Acute20 mg/m³0.243Dermal, Systemic effects, Long Term1.372 mg/kg bw/day0.116Combined routes, Systemic effects, Long Term0.7190.719Contributing scenario controlling worker exposure: Roller application or brushing (PROC 10)Exposure routeExposure routeExposure estimate - WorkerRisk quantification (RCR)Inhalation, Systemic effects, Long Term3.61 mg/m³0.435Inhalation, Systemic effects, Acute3.61 mg/m³0.445Dermal, Systemic effects, Long Term5.486 mg/kg bw/day0.465	Exposure route	Exposure estimate - Worker	Risk quantification (RCR)
Dermal, Systemic effects, Long Term2.742 mg/kg bw/day0.232Combined routes, Systemic effects, Long Term0.835Contributing scenario controlling worker exposure: filling line, including weighing) (PROC 9)Exposure or mixture into small containers (dedicated filling line, including weighing) (PROC 9)Exposure routeExposure estimate - WorkerRisk quantification (RCR)Inhalation, Systemic effects, Long Term5 mg/m³0.602Inhalation, Systemic effects, Acute20 mg/m³0.243Dermal, Systemic effects, Long Term1.372 mg/kg bw/day0.116Combined routes, Systemic effects, Long Term0.719Contributing scenario controlling worker exposure: Roller application or brushing (PROC 10)Exposure routeExposure estimate - WorkerRisk quantification (RCR)Inhalation, Systemic effects, Long Term3.61 mg/m³0.435Inhalation, Systemic effects, Acute3.61 mg/m³0.044Dermal, Systemic effects, Long Term5.486 mg/kg bw/day0.465	Inhalation, Systemic effects, Long Term	5 mg/m <sup>3</sup>	0.602
Combined routes, Systemic effects, Long Term0.835Contributing scenario controlling worker exposure: filling line, including weighing) (PROC 9)Transfer of substance or mixture into small containers (dedicated filling line, including weighing) (PROC 9)Exposure routeExposure estimate - WorkerRisk quantification (RCR)Inhalation, Systemic effects, Long Term5 mg/m³0.602Inhalation, Systemic effects, Acute20 mg/m³0.243Dermal, Systemic effects, Long Term1.372 mg/kg bw/day0.116Combined routes, Systemic effects, Long Term0.719Contributing scenario controlling worker exposure: Roller application or brushing (PROC 10)Exposure routeExposure estimate - WorkerRisk quantification (RCR)Inhalation, Systemic effects, Long Term3.61 mg/m³0.435Inhalation, Systemic effects, Acute3.61 mg/m³0.465	Inhalation, Systemic effects, Acute	20 mg/m <sup>3</sup>	0.243
Contributing scenario controlling worker exposure: Transfer of substance or mixture into small containers (dedicated filling line, including weighing) (PROC 9)Exposure routeExposure estimate - WorkerRisk quantification (RCR)Inhalation, Systemic effects, Long Term5 mg/m³0.602Inhalation, Systemic effects, Acute20 mg/m³0.243Dermal, Systemic effects, Long Term1.372 mg/kg bw/day0.116Combined routes, Systemic effects, Long Term0.719Contributing scenario controlling worker exposure: Roller application or brushing (PROC 10)Exposure routeExposure estimate - WorkerRisk quantification (RCR)Inhalation, Systemic effects, Long Term3.61 mg/m³0.435Inhalation, Systemic effects, Acute3.61 mg/m³0.044Dermal, Systemic effects, Long Term5.486 mg/kg bw/day0.465	Dermal, Systemic effects, Long Term	2.742 mg/kg bw/day	0.232
filling line, including weighing) (PROC 9)Exposure routeExposure estimate - WorkerRisk quantification (RCR)Inhalation, Systemic effects, Long Term5 mg/m³0.602Inhalation, Systemic effects, Acute20 mg/m³0.243Dermal, Systemic effects, Long Term1.372 mg/kg bw/day0.116Combined routes, Systemic effects, Long Term0.719Contributing scenario controlling worker exposureRoller application or brushing (PROC 10)Exposure routeExposure estimate - WorkerRisk quantification (RCR)Inhalation, Systemic effects, Long Term3.61 mg/m³0.435Inhalation, Systemic effects, Acute3.61 mg/m³0.044Dermal, Systemic effects, Long Term5.486 mg/kg bw/day0.465	Combined routes, Systemic effects, Long Term		0.835
Inhalation, Systemic effects, Long Term5 mg/m³0.602Inhalation, Systemic effects, Acute20 mg/m³0.243Dermal, Systemic effects, Long Term1.372 mg/kg bw/day0.116Combined routes, Systemic effects, Long Term0.719Contributing scenario controlling worker exposure: Roller application or brushing (PROC 10)Exposure routeExposure estimate - WorkerRisk quantification (RCR)Inhalation, Systemic effects, Long Term3.61 mg/m³0.435Inhalation, Systemic effects, Acute3.61 mg/m³0.044Dermal, Systemic effects, Long Term5.486 mg/kg bw/day0.465		re: Transfer of substance or mixture in	to small containers (dedicated
Inhalation, Systemic effects, Acute20 mg/m³0.243Dermal, Systemic effects, Long Term1.372 mg/kg bw/day0.116Combined routes, Systemic effects, Long Term0.719Contributing scenario controlling worker exposure: Roller application or brushing (PROC 10)Exposure routeExposure estimate - WorkerRisk quantification (RCR)Inhalation, Systemic effects, Long Term3.61 mg/m³0.435Inhalation, Systemic effects, Acute3.61 mg/m³0.044Dermal, Systemic effects, Long Term5.486 mg/kg bw/day0.465	Exposure route	Exposure estimate - Worker	Risk quantification (RCR)
Dermal, Systemic effects, Long Term1.372 mg/kg bw/day0.116Combined routes, Systemic effects, Long Term0.719Contributing scenario controlling worker exposure: Roller application or brushing (PROC 10)Exposure routeExposure estimate - WorkerRisk quantification (RCR)Inhalation, Systemic effects, Long Term3.61 mg/m³0.435Inhalation, Systemic effects, Acute3.61 mg/m³0.044Dermal, Systemic effects, Long Term5.486 mg/kg bw/day0.465	Inhalation, Systemic effects, Long Term	5 mg/m <sup>3</sup>	0.602
Combined routes, Systemic effects, Long Term0.719Contributing scenario controlling worker exposure: Roller application or brushing (PROC 10)Exposure routeExposure estimate - WorkerRisk quantification (RCR)Inhalation, Systemic effects, Long Term3.61 mg/m³0.435Inhalation, Systemic effects, Acute3.61 mg/m³0.044Dermal, Systemic effects, Long Term5.486 mg/kg bw/day0.465	Inhalation, Systemic effects, Acute	20 mg/m <sup>3</sup>	0.243
Contributing scenario controlling worker exposure: Roller application or brushing (PROC 10)Exposure routeExposure estimate - WorkerRisk quantification (RCR)Inhalation, Systemic effects, Long Term3.61 mg/m³0.435Inhalation, Systemic effects, Acute3.61 mg/m³0.044Dermal, Systemic effects, Long Term5.486 mg/kg bw/day0.465	Dermal, Systemic effects, Long Term	1.372 mg/kg bw/day	0.116
Exposure routeExposure estimate - WorkerRisk quantification (RCR)Inhalation, Systemic effects, Long Term3.61 mg/m³0.435Inhalation, Systemic effects, Acute3.61 mg/m³0.044Dermal, Systemic effects, Long Term5.486 mg/kg bw/day0.465	Combined routes, Systemic effects, Long Term		0.719
Inhalation, Systemic effects, Long Term3.61 mg/m³0.435Inhalation, Systemic effects, Acute3.61 mg/m³0.044Dermal, Systemic effects, Long Term5.486 mg/kg bw/day0.465	Contributing scenario controlling worker exposu	re: Roller application or brushing (PRO	DC 10)
Inhalation, Systemic effects, Acute3.61 mg/m³0.044Dermal, Systemic effects, Long Term5.486 mg/kg bw/day0.465	Exposure route	Exposure estimate - Worker	Risk quantification (RCR)
Inhalation, Systemic effects, Acute3.61 mg/m³0.044Dermal, Systemic effects, Long Term5.486 mg/kg bw/day0.465	Inhalation, Systemic effects, Long Term	3.61 mg/m <sup>3</sup>	0.435
	Inhalation, Systemic effects, Acute	3.61 mg/m <sup>3</sup>	0.044
Combined routes, Systemic effects, Long Term 0.9	Dermal, Systemic effects, Long Term	5.486 mg/kg bw/day	0.465
	Combined routes, Systemic effects, Long Term		0.9



<b>F</b> 4	B exposu	re: Non industrial spraying (PROC 11	
Exposure route		Exposure estimate - Worker	Risk quantification (RCR)
Inhalation, Systemic effects, Long		0.398 mg/m <sup>3</sup>	0.048
Inhalation, Systemic effects, Acute		0.398 mg/m <sup>3</sup>	< 0.01
Dermal, Systemic effects, Long Term		10.71 mg/kg bw/day	0.908
Combined routes, Systemic effects, Long Term			0.956
Contributing scenario controllin	ig worker exposu	re: Treatment of articles by dipping a	
Exposure route		Exposure estimate - Worker	Risk quantification (RCR)
Inhalation, Systemic effects, Long	Term	0.525 mg/m <sup>3</sup>	0.063
Inhalation, Systemic effects, Acute	:	0.525 mg/m <sup>3</sup>	< 0.01
Dermal, Systemic effects, Long Te	erm	2.743 mg/kg bw/day	0.232
Combined routes, Systemic effects	s, Long Term		0.296
Contributing scenario controllin	g worker exposu	e: Manual maintenance (cleaning and	d repair) of machinery (PROC 28
Exposure route		Exposure estimate - Worker	Risk quantification (RCR)
Inhalation, Systemic effects, Long	Term	0.525 mg/m <sup>3</sup>	0.063
Inhalation, Systemic effects, Acute	;	0.525 mg/m <sup>3</sup>	< 0.01
Dermal, Systemic effects, Long Te	erm	2.743 mg/kg bw/day	0.232
Combined routes, Systemic effects	s, Long Term		0.296
SECTION 4:	7.11 Guidance	e to DU to evaluate whether he wor	ks inside the boundaries set by
	alue for CSA, whi	tools: le liquid is used, it is considered appro kers (v3.1). The vapour pressure at o	opriate to refine the exposure
ECETOC TRA Workers 3.1: Explanation: As solid is used as va estimates, using the standalone ver for the calculation is 3.71E-8 Pa (a	Aternal estimation alue for CSA, whi rsion of TRA Wor	tools: le liquid is used, it is considered appro kers (v3.1). The vapour pressure at o	opriate to refine the exposure
ECETOC TRA Workers 3.1: Explanation: As solid is used as vastimates, using the standalone ver for the calculation is 3.71E-8 Pa (a Stoffenmanager 8: Explanation: Inhalation exposure of Activity/type of task: Handling of Distance to task: In the breathing Local controls: No control measu Ventilation working room: Gene Volume of the working room: 10 Regular cleaning of work area (d Regular inspection and maintena Presence of secondary emission Other workers using the same sub A period of evaporation, drying of The concentration that can be inhap performed for 8 hours, the daily av	ternal estimation alue for CSA, whi rsion of TRA Wor as calculated by C concentration estin of liquids on large grane of the work tres at the source ral ventilation (me 00-1000 m3 aily): No nce (at least mont sources (worst-cas stance simultaneou curing after the a led by the worker verage concentrati	tools: le liquid is used, it is considered appro kers (v3.1). The vapour pressure at op hesar). nated using Stoffenmanager® (versio surfaces or large work pieces er (distance head-product < 1 m) (wor schanical) hly): No e assumptions);	opriate to refine the exposure perating temperature (40°C) used n 8) rst-case assumption) apours): Yes dertaken is obtained. As the task i ccordance with the ECHA

- Regular inspection and maintenance (at least monthly): NoPresence of secondary emission sources (worst-case assumptions);



### Other workers using the same substance simultaneously: Yes

A period of evaporation, drying or curing after the activity (with prolonged emission of vapours): Yes The concentration during the task due to the activity undertaken is estimated to be 7.96 mg/m3, resulting in an exposure concentration of 0.398 mg/m3 due to the use of respiratory protection. As the task is performed for 8 hours, the daily average concentration equals the task concentration. In accordance with the ECHA Guidance (Chapter R.14), this estimated concentration is therefore considered to be the short-term as well as the long-term inhalation exposure estimate (90th percentiles).

#### ECETOC TRA Workers 3.1:

Explanation: The exposure estimates for PROC 8a are used, as TRA Workers cannot predict exposure for PROC 28 and these estimates can be considered suitable for estimating exposures during manual maintenance. The exposure estimates are calculated for using a liquid, with the standalone version of TRA Workers (v3.1). The vapour pressure at operating temperature (40°C) used for the calculation is 3.71E-8 Pa (as calculated by Chesar).

#### 8. Exposure Scenario 8: Service life (worker at industrial site) - PU foams - Workers (industrial)

SECTI	ECTION 1: Title of exposure scenario				
		Service life (worker at industrial site) - PU foams - Worke	rs (industrial)		
Contrib	outing scenario controllin	ng environmental exposure			
CS1	CS1 PU foams - Workers (industrial) ERC12a				
Contrib	outing scenario controllin	ng worker exposure			
CS2 Low energy manipulation of substances bound in materials and/or articles PROC21			PROC21		
CS3 High (mechanical) energy work-up of substances bound in materials and/or articles PROC24			PROC24		
Exposu	re scenario(s) of the uses	leading to the inclusion of the substance into the article(s):			
ES5	Use at industrial sites -	Use as additive in foams			
SECTI	ON 2:	Conditions of use			
2.1		<b>Contributing scenario controlling environmental exposure</b> 8.1 PU foams - Workers (industrial) (ERC 12a)	2:		
Amoun	t used, frequency and du	uration of use (or from service life)			
•		vant for the assessment as scenario specific releases are estimate evant for the assessment as scenario specific releases are estimated.			
Conditio	ons and measures related t	o biological sewage treatment plant			
Dischar	cal STP: Standard [Effecti ge rate of STP: >= 2E3 m tion of the STP sludge on	3/day			
Other g	given operational condition	ons affecting environmental exposure			
Receivin	ng surface water flow: >=	1.8E4 m3/day			
2.2		<b>Contributing scenario controlling worker exposure:</b> 8.2 Low energy manipulation of substances bound in material (PROC 21)	s and/or articles		
Produc	t characteristics				
		mixture/article: <= 100 % : Solid (medium dusty form)			
Freque	ncy and duration of use				
Duration	n of activity: <= 8 h/day				
Technic	cal conditions and measu	res to control dispersion from source towards the worker			
Occupat	tional Health and Safety M	ventilation (1-3 air changes per hour) [Effectiveness, Inhalatio Ianagement System: Advanced fectiveness, Inhalation: 0%, Dermal: 0%]	on: 0%]		
Conditi	ons and measures relate	d to personal protection, hygiene and health evaluation			
	tory protection: No [Effec protection: No [Effective				



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Place of use: Indoor					
Operating temperature: <= 40 °C	Contributing sce	nario controlling worker (	vnosure		
	<b>Contributing scenario controlling worker exposure:</b> 8.3 High (mechanical) energy work-up of substances bound in materials and/or articles (PROC 24)				
Product characteristics					
Percentage (w/w) of substance in m Physical form of the used product:					
Frequency and duration of use					
Duration of activity: <= 8 h/day					
Technical conditions and measur	es to control disp	ersion from source towar	ds the wor	ker	
General ventilation: Basic general v Occupational Health and Safety Ma Local exhaust ventilation: No [Effe	nagement System	n: Advanced	veness, Inh	alation: 0%]	
Conditions and measures related	to personal prot	ection, hygiene and health	evaluation	1	
Respiratory protection: No [Effecti Dermal protection: No [Effectivene		:: 0%]			
Other given operational condition	ns affecting work	ters exposure			
Place of use: Indoor Operating temperature: <= 40 °C					
SECTION 3:	8.4 Exposure	estimation			
3.1. Environment	-				
Release	Release estin	mation method	Explana	tions	
Water	Estimated re	lease rate	Local rel	ease rate: 0 kg/day	
Air	Estimated re	lease rate	Local rel	ease rate: 0 kg/day	
Non-Agricultural Soil	Estimated re	lease factor	Release f	factor after on-site RMM: 0%	
Protection target		Exposure concentration	l	Risk quantification (RCR)	
Fresh water		Local PEC: 5.0E-3 mg/l		0.01	
Sedimentation (Fresh water)		Local PEC: 0.025 mg/kg dw		0.01	
Marine water		Local PEC: 5.0E-4 mg/l		0.01	
Sedimentation (Marine water)		Local PEC: 2.4E-3 mg/kg dw		0.01	
Sewage Treatment Plant		Local PEC: 0 mg/l		< 0.01	
Agricultural soil		Local PEC: 2.52E-12 mg/kg dw		< 0.01	
Man via Environment - Inhala effects)	tion (Systemic	Concentration in air: 1.62E-21 mg/m <sup>3</sup>		< 0.01	
Man via Environment - Oral		Exposure via food consumption: 1.74E-4 mg/kg bw/day		< 0.01	
Man via Environment - Combined	routes			< 0.01	
3.2. Worker					
Contributing scenario controlling	g worker exposur	e: Mixing or blending in ba	tch process	es (PROC 5)	
Exposure route		Exposure estimate - Wo	rker	Risk quantification (RCR)	
Inhalation, Systemic effects, Long	Гerm	3 mg/m <sup>3</sup>		0.361	
Inhalation, Systemic effects, Acute		12 mg/m³		0.146	
Dermal, Systemic effects, Long Ter	m	2.83 mg/kg bw/day		0.24	
Combined routes, Systemic effects,		2.00 mg/kg 0w/uay		0.601	



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Melamine

Exposure route			Exposure estimate - Worker	Ris	k quantification (RCR)
Inhalat	ion, Systemic effects, Long	g Term	1 mg/m <sup>3</sup>	0.1	2
Inhalat	ion, Systemic effects, Acute	2	4 mg/m <sup>3</sup>	0.0	49
Dermal, Systemic effects, Long Term 2.83 mg/kg bw/day		2.83 mg/kg bw/day	0.2	4	
Combined routes, Systemic effects, Long Term 0.3		6			
SECTI	ON 4:	8.5 Guidance the ES	to DU to evaluate whether he work	s inside	the boundaries set by
manage Guidan necessa	d to at least equivalent lev ce is based on assumed op	els. erating conditions e-specific risk mar	al Conditions are adopted, then users which may not be applicable to all sit nagement measures. If scaling reveals assessment is required.	es; thus	, scaling could be
9.			er at industrial site) - Intumescent o	coatings	s - Workers (industrial)
SECTI	ON 1:	Title of exposure			
			ker at industrial site) - Intumescent	coatin	gs - Workers (industria
Contri	buting scenario controllin	5	•		
CS1	Intumescent coatings - V	Vorkers (industrial	)		ERC12a
Contri	buting scenario controllin	ng worker exposu	re		
CS2	CS2 Low energy manipulation of substances bound in materials and/or articles			PROC21	
CS3	High (mechanical) energ	y work-up of subs	tances bound in materials and/or articl	es	PROC24
Exposu	re scenario(s) of the uses	leading to the inc	clusion of the substance into the art	icle(s):	
ES6	Use at industrial sites - U	Jse as additive in i	ntumescent coatings		
SECTI	ON 2:	Conditions of us	e		
2.1			enario controlling environmental ex coatings - Workers (industrial) (ERC		:
Amour	nt used, frequency and du	ration of use (or l	from service life)		
			nent as scenario specific releases are e sment as scenario specific releases are		
Conditi	ons and measures related t	o biological sewag	e treatment plant		
Dischar	cal STP: Standard [Effecti ge rate of STP: >= 2E3 m ation of the STP sludge on	3/day			
Other a	given operational condition	ons affecting envi	ronmental exposure		
	ng surface water flow: >=	_			
2.2 Contributing sce		enario controlling worker exposure nanipulation of substances bound in n		s and/or articles	
	et characteristics				
Produc		mixture/article: <=	100 %		
Percent	age (w/w) of substance in ll form of the used product		usty form)		
Percent Physica			usty form)		
Percent Physica Freque	l form of the used product		usty form)		

General ventilation: Basic general ventilation (1-3 air changes per hour) [Effectiveness, Inhalation: 0%] Occupational Health and Safety Management System: Advanced Local exhaust ventilation: No [Effectiveness, Inhalation: 0%, Dermal: 0%]



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Conditions and measures related t	o personal prot	ection, hygiene and health	evaluation	
Respiratory protection: No [Effective Dermal protection: No [Effectivenes		: 0%]		
Other given operational conditions	affecting work	ers exposure		
Place of use: Indoor Operating temperature: <= 40 °C				
9	<b>Contributing scenario controlling worker exposure:</b> 9.3 High (mechanical) energy work-up of substances bound in materials and/or articles (PROC 24)			
Product characteristics				
Percentage (w/w) of substance in mi Physical form of the used product: S				
Frequency and duration of use				
Duration of activity: <= 8 h/day				
Technical conditions and measures	s to control disp	ersion from source toward	s the work	ter
General ventilation: Basic general ve Occupational Health and Safety Mar Local exhaust ventilation: No [Effec	agement System	n: Advanced	eness, Inha	lation: 0%]
Conditions and measures related t	o personal prot	ection, hygiene and health	evaluation	
Respiratory protection: No [Effective Dermal protection: No [Effectivenes		: 0%]		
Other given operational conditions	affecting work	ers exposure		
Place of use: Indoor Operating temperature: <= 40 °C				
SECTION 3:	9.4 Exposure	estimation		
3.1. Environment				
Release	Release estin	mation method	Explanat	ions
Water	Estimated re	lease rate	Local rele	ease rate: 0 kg/day
Air	Estimated re	lease rate	Local rele	ease rate: 0 kg/day
Non-Agricultural Soil	Estimated re	lease factor	Release fa	actor after on-site RMM: 0%
Protection target		Exposure concentration		Risk quantification (RCR)
Fresh water		Local PEC: 5.0E-3 mg/l		0.01
Sedimentation (Fresh water)		Local PEC: 0.025 mg/kg	dw	0.01
Marine water		Local PEC: 5.0E-4 mg/l		0.01
Sedimentation (Marine water)		Local PEC: 2.4E-3 mg/kg dw		0.01
Sewage Treatment Plant		Local PEC: 0 mg/l		< 0.01
Agricultural soil		Local PEC: 2.52E-12 mg/kg dw		< 0.01
Man via Environment - Inhalati effects)	on (Systemic	Concentration in air: 1.62E-21 mg/m <sup>3</sup>		< 0.01
Man via Environment - Oral		Exposure via food consumption: 1.74E-4 mg/kg bw/day		< 0.01
Man via Environment – Combined ro	outes			< 0.01
3.2. Worker				
<b>Contributing scenario controlling</b> articles (PROC 21)	worker exposur	re: Low energy manipulation	of substan	ces bound in materials and/or
Exposure route		Exposure estimate - Wo	rker	Risk quantification (RCR)
			-	



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Inhalation, Systemic effects, Acute		12 mg/m <sup>3</sup>	0.146
Dermal, Systemic effects, Long Term		2.83 mg/kg bw/day	0.24
Combined routes, Systemic effects, Long Term			0.601
<b>Contributing scenario controlling</b> and/or articles (PROC 24)	g worker exposur	e: High (mechanical) energy work-u	p of substances bound in materials
Exposure route		Exposure estimate - Worker	Risk quantification (RCR)
Inhalation, Systemic effects, Long Term		1 mg/m <sup>3</sup>	0.12
Inhalation, Systemic effects, Acute		4 mg/m <sup>3</sup>	0.049
Dermal, Systemic effects, Long Term		2.83 mg/kg bw/day	0.24
Combined routes, Systemic effects, Long Term			0.36
SECTION 4: 9.5 Guidance t the ES		o DU to evaluate whether he work	s inside the boundaries set by
Where other Risk Management Measures/Operational Conditions are adopted, then users should ensure that risks are managed to at least equivalent levels. Guidance is based on assumed operating conditions which may not be applicable to all sites; thus, scaling could be necessary to define appropriate site-specific risk management measures. If scaling reveals a condition of unsafe use, additional RMMs or a site-specific chemical safety assessment is required.			
		essional worker) - Intumescent coa	tings - Professional Workers
	Title of exposure		<b>.</b>

SECTI	SECTION 1: Title of exposure scenario				
	Service life (professional worker) - Intumescent coatings - Professional Workers				
Contributing scenario controlling environmental exposure					
CS1	CS1 Intumescent coatings - Professional Workers ERC10a, ERC11a				
Contributing scenario controlling worker exposure					
CS2 Low energy manipulation of substances bound in materials and/or articles PROC21					
Exposu	re scenario(s) of the uses	e leading to the inclusion of the substance into the article(s):			
ES6	Use at industrial sites - U	Use as additive in intumescent coatings			
ES7	Widespread use by profe	essional workers - Use as additive in intumescent coatings			
SECTI	ON 2:	Conditions of use	•		
2.1		Contributing scenario controlling environmental exposure 10.1 Intumescent coatings - Professional Workers (ERC 10a, J			
Amoun	t used, frequency and du	ration of use (or from service life)			
Daily lo	ocal widespread use amour	nt: not relevant for the assessment as scenario specific releases a	are estimated		
Conditi	ons and measures related t	o biological sewage treatment plant			
Dischar	cal STP: Standard [Effecti ge rate of STP: >= 2E3 m tion of the STP sludge on	3/day			
Other g	given operational condition	ons affecting environmental exposure			
Receivi	ng surface water flow: >=	1.8E4 m3/day			
2.2 Contributing scenario controlling worker exposure: 10.2 Low energy manipulation of substances bound in materials and/or articles (PROC 21)					
Product characteristics					
	age (w/w) of substance in l form of the used product	mixture/article: <= 100 % : Solid (medium dusty form)			
Freque	ncy and duration of use				
Duration of activity: <= 8 h/day					
Technical conditions and measures to control dispersion from source towards the worker					



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General ventilation: Basic general ven Occupational Health and Safety Man Local exhaust ventilation: No [Effec	agement Systen	n: Basic	veness, Inha	lation: 0%]
Conditions and measures related t	o personal prot	ection, hygiene and health	evaluation	
Respiratory protection: No [Effective Dermal protection: No [Effectivenes		:: 0%]		
Other given operational conditions	affecting work	ters exposure		
Place of use: Indoor Operating temperature: <= 40 °C				
SECTION 3:	10.3 Exposure estimation			
3.1. Environment				
Release	Release esti	mation method	Explanat	ions
Water	Estimated re	lease rate	Local rele	ease rate: 0 kg/day
Air	Estimated re	lease rate	Local rele	ease rate: 0 kg/day
Non-Agricultural Soil	Estimated re	lease factor	Release fa	actor after on-site RMM: 0%
Protection target		Exposure concentration		Risk quantification (RCR)
Fresh water		Local PEC: 5.0E-3 mg/l		0.01
Sedimentation (Fresh water)		Local PEC: 0.025 mg/kg dw		0.01
Marine water		Local PEC: 5.0E-4 mg/l		0.01
Sedimentation (Marine water)		Local PEC: 2.4E-3 mg/kg dw		0.01
Sewage Treatment Plant		Local PEC: 0 mg/l		< 0.01
Agricultural soil		Local PEC: 2.52E-12 mg/	'kg dw	< 0.01
Man via Environment - Inhalation (Systemic effects)		Concentration in air: 1.62E-21 mg/m <sup>3</sup>		< 0.01
Man via Environment - Oral		Exposure via food consun 1.74E-4 mg/kg bw/day	nption:	< 0.01
Man via Environment – Combined ro	outes			< 0.01
3.2. Worker				
<b>Contributing scenario controlling</b> articles (PROC 21)	worker exposur	e: Low energy manipulation	ı of substan	ces bound in materials and/or
Exposure route		Exposure estimate - Worker		Risk quantification (RCR)
Inhalation, Systemic effects, Long To	erm	5 mg/m <sup>3</sup>		0.602
Inhalation, Systemic effects, Acute		20 mg/m <sup>3</sup>		0.243
Dermal, Systemic effects, Long Terr	n	2.83 mg/kg bw/day		0.24
Combined routes, Systemic effects, Long Term				0.842
SECTION 4:	10.4 Guidance the ES	to DU to evaluate whether	he works	inside the boundaries set by
Where other Risk Management Measures/Operational Conditions are adopted, then users should ensure that risks are managed to at least equivalent levels. Guidance is based on assumed operating conditions which may not be applicable to all sites; thus, scaling could be necessary to define appropriate site-specific risk management measures. If scaling reveals a condition of unsafe use, additional RMMs or a site-specific chemical safety assessment is required.				

11. Exposure Scenario 11: Service life (consumers) - PU foams – Consumers					
SECTI	ON 1:	Title of exposure scenario			
	Service life (consumers) - PU foams – Consumers				
Contributing scenario controlling environmental exposure					
CS1	CS1 PU foams – Consumers ERC10a, ERC11a				



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	buting seenario controlin	ng we	orker exposur	e		
CS2	Use of articles containin	ng foam with encapsulated the substance				AC1, AC1a, AC 13, AC 13e
Exposu			ę	lusion of the substance inte	o the article(s	s):
ES5	Use at industrial sites - Use as additive in foams					
SECTION 2: Conditions of use						
2.1				nario controlling environn Consumers (ERC 10a, ERC		Ire:
Amoun	nt used, frequency and du	iratio	on of use (or f	rom service life)		
Daily lo	ocal widespread use amour	nt: no	t relevant for t	he assessment as scenario s	pecific release	es are estimated
Conditi	ions and measures related t	o bio	logical sewage	e treatment plant		
Dischar	ical STP: Standard [Effecti rge rate of STP: >= 2E3 m ation of the STP sludge on	3/day	,			
	given operational condition					
	ing surface water flow: >=		_			
2.2		Contributing scenario controlling consumer exposure: 11.2 Use of articles containing foam with encapsulated the substance (AC1, AC1a, AC 13, AC13e)				
Produc	ct characteristics					
Exposu	tage (w/w) of substance in ire via inhalation route: Inh ire via oral route: Oral expo	nalati	on exposure is	considered to be not relevan	nt	
SECTI	ION 3:	1	11.3 Exposure	estimation		
3.1. En	nvironment					
Release	e		Release estin	mation method	Explanatio	ns
Water			Estimated re	lease rate	Local release	se rate: 0 kg/day
Air			Estimated re	lease rate	Local releas	e rate: 0 kg/day
Non-Ag	gricultural Soil		Estimated re	lease factor	Release fact	tor after on-site RMM: 0%
Protect	tion target			Exposure concentration		
Fresh w	Fresh water		Exposure concentration		Risk quantification (RCR)	
Sedimentation (Fresh water)				Local PEC: 5.0E-3 mg/l		<b>Risk quantification (RCR)</b> 0.01
Sedime					(	_
Sedime Marine	entation (Fresh water)			Local PEC: 5.0E-3 mg/l	dw (	0.01
Marine	entation (Fresh water)			Local PEC: 5.0E-3 mg/l Local PEC: 0.025 mg/kg	dw (	0.01 0.01
Marine Sedime	entation (Fresh water) e water			Local PEC: 5.0E-3 mg/l Local PEC: 0.025 mg/kg Local PEC: 5.0E-4 mg/l	dw ( g dw (	0.01 0.01 0.01
Marine Sedime Sewage	entation (Fresh water) e water entation (Marine water)			Local PEC: 5.0E-3 mg/l Local PEC: 0.025 mg/kg Local PEC: 5.0E-4 mg/l Local PEC: 2.4E-3 mg/kg	dw ( g dw (	D.01       D.01       D.01       D.01
Marine Sedime Sewage Agricul Man v	entation (Fresh water) e water entation (Marine water) e Treatment Plant ltural soil via Environment - Inha	lation	(Systemic	Local PEC: 5.0E-3 mg/l Local PEC: 0.025 mg/kg Local PEC: 5.0E-4 mg/l Local PEC: 2.4E-3 mg/kg Local PEC: 0 mg/l	dw ( g dw ( kg dw ·	0.01       0.01       0.01       0.01       0.01       < 0.01
Marine Sedime Sewage Agricul Man v effects)	entation (Fresh water) e water entation (Marine water) e Treatment Plant ltural soil via Environment - Inha	lation	(Systemic	Local PEC: 5.0E-3 mg/l Local PEC: 0.025 mg/kg Local PEC: 5.0E-4 mg/l Local PEC: 2.4E-3 mg/kg Local PEC: 0 mg/l Local PEC: 2.52E-12 mg Concentration in air:	dw ( g dw ( /kg dw ·	0.01       0.01       0.01       0.01       0.01       < 0.01
Marine Sedime Sewage Agricul Man v effects) Man via	entation (Fresh water) water entation (Marine water) e Treatment Plant ltural soil via Environment - Inha			Local PEC: 5.0E-3 mg/l Local PEC: 0.025 mg/kg Local PEC: 5.0E-4 mg/l Local PEC: 2.4E-3 mg/kg Local PEC: 0 mg/l Local PEC: 2.52E-12 mg Concentration in air: 1.62E-21 mg/m <sup>3</sup> Exposure via food consur	dw ( dw ( g dw ( /kg dw ·	0.01       0.01       0.01       0.01       0.01       < 0.01
Marine Sedime Sewage Agricul Man v effects) Man via Man via	entation (Fresh water) e water entation (Marine water) e Treatment Plant ltural soil via Environment - Inha ) a Environment - Oral			Local PEC: 5.0E-3 mg/l Local PEC: 0.025 mg/kg Local PEC: 5.0E-4 mg/l Local PEC: 2.4E-3 mg/kg Local PEC: 0 mg/l Local PEC: 2.52E-12 mg Concentration in air: 1.62E-21 mg/m <sup>3</sup> Exposure via food consur	dw ( dw ( g dw ( /kg dw ·	0.01       0.01       0.01       0.01       0.01       < 0.01
Marine Sedime Sewage Agricul Man v effects) Man via <b>3.2. Co</b> <b>Contri</b>	entation (Fresh water) e water entation (Marine water) e Treatment Plant ltural soil via Environment - Inha ) a Environment - Oral a Environment - Combinec	d rout	es	Local PEC: 5.0E-3 mg/l Local PEC: 0.025 mg/kg Local PEC: 5.0E-4 mg/l Local PEC: 2.4E-3 mg/kg Local PEC: 0 mg/l Local PEC: 0.52E-12 mg Concentration in air: 1.62E-21 mg/m <sup>3</sup> Exposure via food consur 1.74E-4 mg/kg bw/day	dw ( dw ( g dw ( /kg dw · nption: ·	0.01       0.01       0.01       0.01       0.01       < 0.01
Marine Sedime Sewage Agricul Man v effects) Man via <b>3.2. Co</b> <b>Contri</b> (AC1,	entation (Fresh water) e water entation (Marine water) e Treatment Plant ltural soil via Environment - Inha ) a Environment - Oral a Environment - Combined onsumer ibuting scenario controlli	d rout	es	Local PEC: 5.0E-3 mg/l Local PEC: 0.025 mg/kg Local PEC: 5.0E-4 mg/l Local PEC: 2.4E-3 mg/kg Local PEC: 0 mg/l Local PEC: 0.52E-12 mg Concentration in air: 1.62E-21 mg/m <sup>3</sup> Exposure via food consur 1.74E-4 mg/kg bw/day	dw ( dw ( g dw ( /kg dw · nption: ·	0.01       0.01       0.01       0.01       0.01       < 0.01
Marine Sedime Sewage Agricul Man v effects) Man via <b>3.2. Co</b> <b>Contri</b> (AC1, <b>Exposu</b>	entation (Fresh water) e water entation (Marine water) e Treatment Plant ltural soil via Environment - Inha ) a Environment - Oral a Environment – Combined onsumer ibuting scenario controlli AC1a, AC 13, AC13e)	d rout	es onsumer expo	Local PEC: 5.0E-3 mg/l Local PEC: 0.025 mg/kg Local PEC: 5.0E-4 mg/l Local PEC: 2.4E-3 mg/kg Local PEC: 0 mg/l Local PEC: 0.52E-12 mg Concentration in air: 1.62E-21 mg/m <sup>3</sup> Exposure via food consur 1.74E-4 mg/kg bw/day	dw ( dw ( g dw ( /kg dw · /kg dw · /kg dw · /kg	2.01 2.01 2.01 2.01 2.01 2.001 2.001 2.001 2.001 2.001 2.001 2.001 2.001 3.001



SECTION 4:	11.4 Guidance	to DU to evaluate whether he works	inside the boundaries set by
Combined routes, Systemic effects, L	ong Term		0.035 for a baby 0.015 for an adult
Oral, Systemic effects, Long Term		Negligible (Migration study)	< 0.01
		<ul> <li>mattress protection and comfort (Migration study)</li> <li>0.06375 mg/kg bw/day: for an adult, when using additional sheets for mattress protection and comfort (Migration study)</li> <li>0.6375 mg/kg bw/day: for an adult, when sleeping directly on the mattress cover (Migration study)</li> <li>1.484 mg/kg bw/day: for a baby, when sleeping directly on the mattress cover (Migration study)</li> </ul>	0.015
		when using additional sheets for	

Remarks on exposure data:

Migration study:

Explanation: The substance is used in foam mattresses, as a non-halogenated flame retardant. The European association of flexible polyurethane foam blocks manufacturers (EUROPUR) commissioned a migration study, to evaluate the potential exposure of humans from melamine used in flexible PU foam used in mattresses. The study was submitted to ECHA by EUROPUR, as part of their response to the public consultation on the CLH report for melamine dated November 2019 and can be found on the ECHA website.

the ES

Based on the vapour pressure of the substance and since mattresses are flat and not mouthed, inhalation and oral exposure are considered negligible, while potential dermal exposure is deemed the most relevant route of exposure due to the prolonged contact duration, with a large part of the body and the possible effect of sweat as a vehicle.

The migration of melamine into synthetic sweat soaked filter papers from these foams was investigated. As a mattress typically consists of a PUR foam core surrounded with a fabric layer, migration was investigated with and without the use of a polyester-polypropylene mattress cover placed between the foam and filter paper. The set-up was compressed to 70% of its depth in order to simulate a person sleeping on the mattress and incubated at 40°C for 2 hours.

When the foam was covered, a standard practice for every mattress with flexible PU foam, the migration was below the limit of detection (LOD) and LOD/2 was used as estimate for people sleeping directly on the mattress cover (0.6375 mg/kg bw/day for an adult and 1.484 for a baby). Note that this is a worst-case assessment as usually people don't sleep directly on the mattress cover but put additional sheets for additional mattress protection and comfort. When refined due to the use of additional sheets for mattress protection and comfort, the dermal exposure estimates were concluded to be 0.06375 for an adult and 0.1484 for a baby. Note that no melamine was detected when the mattress cover was included in the test set-up and that the calculations are therefore done based on the LOD/2.

### 12. Exposure Scenario 12: Service life (consumers) - Intumescent coating – Consumers

SECTI	ON 1:	Title of exposure scenario			
	Service life (consumers) - Intumescent coating – Consumers				
Contrib	Contributing scenario controlling environmental exposure				
CS1	Intumescent coating – Consumers ERC10a, ERC11a				
Contrib	Contributing scenario controlling worker exposure				
CS2	Use of articles with intumescent coating with encapsulated the substance AC13				
Exposu	Exposure scenario(s) of the uses leading to the inclusion of the substance into the article(s):				
ES6	Use at industrial sites - Use as additive in intumescent coatings				
ES7	7 Widespread use by professional workers - Use as additive in intumescent coatings				
SECTI	SECTION 2: Conditions of use				
2.1	Contributing scenario controlling environmental exposure:           12.1 Intumescent coating – Consumers (ERC 10a, ERC 11a)				



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Amount used, frequency and durat	ion of use (or f	rom service life)			
			pecific relea	ases are estimated	
Daily local widespread use amount: not relevant for the assessment as scenario specific releases are estimated Conditions and measures related to biological sewage treatment plant					
Biological STP: Standard [Effectiven Discharge rate of STP: >= 2E3 m3/da Application of the STP sludge on agr	ess, Water: 0.16	59%]			
Other given operational conditions	affecting envir	onmental exposure			
Receiving surface water flow: $>= 1.8$	Receiving surface water flow: >= 1.8E4 m3/day				
Product characteristics					
Percentage (w/w) of substance in mix Exposure via inhalation route: Inhala Exposure via dermal route: Dermal e Exposure via oral route: Oral exposure	tion exposure is xposure assume	considered to be not relevar d to be negligible	nt		
SECTION 3:	12.3 Exposure	e estimation			
3.1. Environment					
Release	Release estin	mation method	Explanat	tions	
Water	Estimated re	lease rate	Local rele	ease rate: 0 kg/day	
Air	Estimated re	lease rate	Local rele	ease rate: 0 kg/day	
Non-Agricultural Soil	Estimated re	lease factor	Release f	actor after on-site RMM: 0%	
Protection target		Exposure concentration		Risk quantification (RCR)	
Fresh water		Local PEC: 5.0E-3 mg/l		0.01	
Sedimentation (Fresh water)		Local PEC: 0.025 mg/kg	dw	0.01	
Marine water		Local PEC: 5.0E-4 mg/l		0.01	
Sedimentation (Marine water)		Local PEC: 2.4E-3 mg/kg	dw	0.01	
Sewage Treatment Plant		Local PEC: 0 mg/l		< 0.01	
Agricultural soil		Local PEC: 2.52E-12 mg/	'kg dw	< 0.01	
Man via Environment - Inhalation effects)	on (Systemic	Concentration in air: 1.62E-21 mg/m <sup>3</sup>		< 0.01	
Man via Environment - Oral		Exposure via food consumption: 1.74E-4 mg/kg bw/day		< 0.01	
Man via Environment – Combined ro	utes			< 0.01	
3.2 Consumer					
<b>Contributing scenario controlling c</b> substance (AC 13)	onsumer expos	sure: Use of articles with int	umescent c	oating with encapsulated the	
As any (dermal) contact by consumers with these coatings will be incidental and as the substance is embedded in a matrix, inhalation, dermal and oral exposure (and therefore risks) are considered to be negligible.					
SECTION 4:	SECTION 4: 12.4 Guidance to DU to evaluate whether he works inside the boundaries set by the ES				
Where other Risk Management Meas managed to at least equivalent levels. Guidance is based on assumed operat necessary to define appropriate site-s additional RMMs or a site-specific ch	ing conditions v pecific risk man	which may not be applicable agement measures. If scalin	to all sites;	; thus, scaling could be	