

Orfom® CO210 Collector

Version 1.0

Revision Date 2023-01-12

According to Regulation (EC) No. 1907/2006, Regulation (EC) No. 2020/878

SECTION 1: Identification of the substance/mixture and of the company/undertaking

1.1 Product identifier

Product information

Product Name	: Orfom® CO210 Collector
Material	: 1122016, 1121512, 1118478, 1117769, 1117768, 1117418,
	1117417

EC-No.Registration number

Chemical name	CAS-No. EC-No. Index No.	Legal Entity Registration number
tert-Dodecanethiol	25103-58-6 246-619-1	Chevron Phillips Chemicals International NV 01-2119486132-42-0002
tert-Dodecanethiol	25103-58-6 246-619-1	Chevron Phillips Chemical Company LP 01-2119486132-42-0005

1.2

1.2	Relevant identified uses of th	e substance or mixture and uses advised against
	Relevant Identified Uses : Supported	Manufacture Formulation Use in polymer processing –industrial Lubricants - Industrial Use in mining – industrial
1.3	Details of the supplier of the	safety data sheet
	Company :	Chevron Phillips Chemical Company LP 10001 Six Pines Drive The Woodlands, TX 77380
	Local :	Chevron Phillips Chemicals International N.V. Airport Plaza (Stockholm Building) Leonardo Da Vincilaan 19 1831 Diegem Belgium
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SDS Requests: (800) 852-5530 Responsible Party: Product Safety Group Email:sds@cpchem.com
1.4 Emergency telephone:
Health: 866.442.9628 (North America) 1.832.813.4984 (International) Transport: CHEMTREC 800.424.9300 or 703.527.3887(int!) Asia: CHEMWATCH (+612.9186 Brazi): 632.8388.9090 Mexico CHEMTREC 01-800-681.9531 (24 hours) South America SOS-Cotec Inside Brazi): 0800.111.767 Outside Brazi): +55.19.3467.1600 Argentina: +(54)-1159839431 EUROPE: BIG +32.14.584545 (phone) or +32.14583516 (telefax) Austria: +1389 E1364 233 Croatia: +3382 E1348 342 (24 hours/day, 7 days/week) Belgium: 070.245.245 (24 hours/day, 7 days/week) Bulgaria: +339 E1354 233 Croatia: +3385 12348 342 (24 hours/day, 7 days/week) Cyprus: 1401 Czech Republic: Toxicological Information Center (+420.224 919.293, +420.224 915.402 Denmark: Danish Poison Center (Gittinjen): +45 8212 1212 Estonia: BIG +32.14.584545 (phone) or +32.14583516 (telefax) Frinland: 0800 147 111 09.471 977 (24 hours/day) France: ORFILA number (INRS): +33 (0) 145 425 59 59 (24 hours/day, 7 days/week) Gerence: (0030) 2107793777 (24 hours/day, 7 days/week) Hungary: +36-80-201-199 (24 hours/day, 7 days/week) Iceland: BIG +32.14.584545 (phone) or +32.14583516 (telefax) Italy: BIG +32.14.584545 (phone) or +32.14583516 (telefax) Datavia: +330 (85) 2002 5500 (24 hours/day, 7 days/week) Dischertstein: BIG +32.14.584545 (phone) or +32.14583516 (telefax) Dischertstein: BIG +32.14.584545 (phon
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SECTION 2: Hazards identification

2.1

Classification of the substance or mixture REGULATION (EC) No 1272/2008

	REGULATION (EC) No 1272	2/2008				
	Skin irritation, Category 2		H315: Causes skin irritation. H319:			
	Eye irritation, Category 2					
	Skin sensitization, Sub-categ	jory 1B	Causes serious eye irritation. H317:			
	Long-term (chronic) aquatic h Category 4	nazard,	May cause an allergic skin reaction. H413: May cause long lasting harmful effects to aquatic life.			
2.2	2 Labeling (REGULATION (E	C) No 1272/2	008)			
	Hazard pictograms					
	Signal Word	: Warning				
	Hazard Statements	: H315 H317 H319 H413	Causes skin irritation. May cause an allergic skin reaction. Causes serious eye irritation. May cause long lasting harmful effects to aquatic life.			
	Precautionary Statements	: Prevent P261 P264 P273 P280 Respon P333 + I P337 + I	Avoid breathing dust/ fume/ gas/ mist/ vapors/ spray. Wash skin thoroughly after handling. Avoid release to the environment. Wear protective gloves/ eye protection/ face protection. se: P313 If skin irritation or rash occurs: Get medical advice/ attention.			
	Hazardous ingredients which • 25103-58-6 tert-	n must be liste Dodecanethie				
2.:	3 Other hazards					

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Results of PBT and vPv assessment	В	: This substance/mixture considered to be either toxic (PBT), or very per (vPvB) at levels of 0.1%	persistent, bioac rsistent and very	cumulative and
SECTION 3: Composition/in	formation o	on ingredients		
3.1 - 3.2				
Substance or Mixture				
Synonyms		M tiary Dodecyl Mercaptan t Dodecyl Mercaptan		
Molecular formula	: UV	СВ		
Hazardous ingredients				
Chemical name	CAS-No. EC-No. Index No.	Classification (REGULATION (EC) No 1272/2008)	Concentration [wt%]	Specific Conc. Limits, M-factors and ATEs
	25103-58-6 246-619-1	Skin Irrit. 2; H315 Eye Irrit. 2; H319 Skin Sens. 1B; H317 Aquatic Chronic 4; H413	90 - 100	
		mentioned in this Section,	see Section 16.	
ECTION 4: First aid measu	ires	nentioned in this Section,	see Section 16.	
ECTION 4: First aid measu	ires measures : Mo she	mentioned in this Section, we out of dangerous area. eet to the doctor in attenda ious, potentially fatal pneu	Show this mate	ay produce a
ECTION 4: First aid measu .1 Description of first-aid	ires measures : Mo she ser : If u	ve out of dangerous area.	Show this mate ince. Material ma imonia if swallow very position and	ay produce a ed or vomited.
SECTION 4: First aid measu 1.1 Description of first-aid General advice	ires measures : Mo she ser : If u adv : If sl	ve out of dangerous area. eet to the doctor in attenda ious, potentially fatal pneu nconscious, place in recov	Show this mate ince. Material ma imonia if swallow very position and call a physician. a physician. If on	ay produce a ed or vomited. seek medical
ECTION 4: First aid measu .1 Description of first-aid General advice If inhaled	ires measures : Mo she ser : If u adv : If sl with : Imr lens	ve out of dangerous area. eet to the doctor in attenda ious, potentially fatal pneu nconscious, place in recov rice. If symptoms persist, kin irritation persists, call a	Show this mater ince. Material ma imonia if swallow very position and call a physician. a physician. If on nove clothes. plenty of water. ve. Keep eye wid	ay produce a ed or vomited. seek medical skin, rinse well Remove contact le open while
SECTION 4: First aid measu Description of first-aid General advice If inhaled In case of skin contact	rres measures : Mo she ser : If u adv : If sl with : Imr lens rins : Kee	ve out of dangerous area. eet to the doctor in attenda ious, potentially fatal pneu nconscious, place in recov vice. If symptoms persist, kin irritation persists, call a n water. If on clothes, rem nediately flush eye(s) with ses. Protect unharmed ey	Show this mater ince. Material ma imonia if swallow very position and call a physician. a physician. If on ove clothes. plenty of water. ve. Keep eye wid sts, consult a spe- lf symptoms pers	ay produce a ed or vomited. seek medical skin, rinse well Remove contact le open while cialist. sist, call a
ECTION 4: First aid measu Description of first-aid General advice If inhaled In case of skin contact In case of eye contact If swallowed	rres measures : Mo she ser : If u adv : If sl with : Imr lens rins : Kee phy	ve out of dangerous area. eet to the doctor in attenda ious, potentially fatal pneu nconscious, place in recov vice. If symptoms persist, kin irritation persists, call a n water. If on clothes, rem nediately flush eye(s) with ses. Protect unharmed ey sing. If eye irritation persis ep respiratory tract clear.	Show this mater ince. Material ma imonia if swallow very position and call a physician. a physician. If on hove clothes. plenty of water. ve. Keep eye wid sts, consult a spe- lf symptoms pers diately to hospita	ay produce a ed or vomited. seek medical skin, rinse well Remove contact le open while cialist. sist, call a
SECTION 4: First aid measu A.1 Description of first-aid General advice If inhaled In case of skin contact In case of eye contact If swallowed A.2 Most important sympto	measures Moishe Ser If u adv If sl with Inr lens rins Kee phy ms and effe	ve out of dangerous area. eet to the doctor in attenda ious, potentially fatal pneu nconscious, place in recov vice. If symptoms persist, kin irritation persists, call a n water. If on clothes, rem nediately flush eye(s) with ses. Protect unharmed ey sing. If eye irritation persis ep respiratory tract clear.	Show this mater ince. Material ma imonia if swallow very position and call a physician. a physician. If on hove clothes. plenty of water. ve. Keep eye wid sts, consult a spe- lf symptoms pers diately to hospita	ay produce a ed or vomited. seek medical skin, rinse well Remove contact le open while cialist. sist, call a
SECTION 4: First aid measu A.1 Description of first-aid General advice If inhaled In case of skin contact In case of eye contact If swallowed A.2 Most important sympto Notes to physician	measures Moishe Ser : Moishe ser : If u adv : If sl with : Imr lens rins : Kee phy ms and effe : No : No	ve out of dangerous area. bet to the doctor in attenda ious, potentially fatal pneu nconscious, place in recov vice. If symptoms persist, kin irritation persists, call a n water. If on clothes, rem nediately flush eye(s) with ses. Protect unharmed ey sing. If eye irritation persis ep respiratory tract clear. vsician. Take victim immed ects, both acute and dela information available.	Show this mater ince. Material ma imonia if swallow very position and call a physician. a physician. If on ove clothes. plenty of water. ve. Keep eye wid sts, consult a spe- lf symptoms pers diately to hospita	ay produce a ed or vomited. seek medical skin, rinse well Remove contact le open while cialist. sist, call a l.

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	Treatment	:	No information available.
SEC	CTION 5: Firefighting measur	es	
	Flash point	:	98-110°C (208-230°F) Method: closed cup
	Autoignition temperature	:	198-230°C (388-446°F)
5.1	Extinguishing media		
	Unsuitable extinguishing media	:	High volume water jet.
5.2	Special hazards arising from Specific hazards during fire fighting		he substance or mixture Do not allow run-off from fire fighting to enter drains or water courses.
5.3	Advice for firefighters Special protective equipment for fire-fighters	:	Wear self-contained breathing apparatus for firefighting if necessary.
	Further information	:	Collect contaminated fire extinguishing water separately. This must not be discharged into drains. Fire residues and contaminated fire extinguishing water must be disposed of in accordance with local regulations.
	Fire and explosion protection	:	Normal measures for preventive fire protection.
	Hazardous decomposition products	:	Carbon oxides. Sulfur oxides.
SEC	CTION 6: Accidental release	me	asures
6.1	Personal precautions, prote	ecti	ve equipment and emergency procedures
	Personal precautions	:	Use personal protective equipment. Ensure adequate ventilation.
6.2	Environmental precautions		
	Environmental precautions	:	Prevent product from entering drains. Prevent further leakage or spillage if safe to do so. If the product contaminates rivers and lakes or drains inform respective authorities.
6.3	Methods and materials for of Methods for cleaning up	con :	tainment and cleaning up Soak up with inert absorbent material (e.g. sand, silica gel, acid binder, universal binder, sawdust). Keep in suitable, closed containers for disposal.
6.4	Reference to other sections	5	
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	Reference to other sections	:		sonal protectic rations see se				
ΞC	CTION 7: Handling and stor	age						
1								
1	Precautions for safe hand Handling	ling						
	Advice on safe handling	:	instructi persona drinking of rinse regulatio or asthn	na, allergies, o not be employ	e. Avoid co e section 8 phibited in t rdance with susceptible chronic or re	ontact with 3. Smoking he applicat 1 local and 2 to skin se ecurrent re	skin a g, eatir tion are nation ensitiza	nd eyes. For ng and ea. Dispose al tion problems ory disease
	Advice on protection against fire and explosion	:	Normal	measures for	preventive	fire protect	tion.	
2								
	Conditions for safe storag	je, in	cluding	any incompa	tibilities			
	Storage							
	Requirements for storage areas and containers	:	Contain kept up Electrica	ontainer tightly ers which are right to preven al installations ogical safety s	opened mu t leakage. / working r	ust be care Observe la	fully re abel pr	sealed and ecautions.
3								
	Specific End Use Use	:	For add portion	itional details,	see the Ex	posure Sc	enario	in the Annex
EC	CTION 8: Exposure controls	s/per	sonal pr	otection				
			<u></u>					
1								
-	Control parameters							
	vron Phillips Chemical Company L							
	nponents -Dodecanethiol	Bas Man	IS ufacturer	TWA		ntrol paramet ppm,	ers	Note
					• • •		ľ	
	DNEL	:	Routes Potent	se: Workers s of exposure: ial health effe 0,5 mg/m3		erm system	nic effe	cts
	DNEL	:	Routes	se: Workers s of exposure:		ct erm system	nic effe	cts
				1,7 mg/kg	bio: Long it	,		
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DNEL	: End Use: Workers Routes of exposure: Skin contact Potential health effects: Acute effects Value: 0,665 mg/cm2
DNEL	 End Use: Consumers Routes of exposure: Inhalation Potential health effects: Long-term systemic effects Value: 0,09 mg/m3
DNEL	: End Use: Consumers Routes of exposure: Ingestion Potential health effects: Long-term systemic effects Value: 0,08 mg/kg
PNEC	: Fresh water sediment Value: 3 mg/kg
PNEC	: Marine sediment Value: 0,3 mg/kg

8.2

Exposure controls Engineering measures

Adequate ventilation to control airborned concentrations below the exposure guidelines/limits. Consider the potential hazards of this material (see Section 2), applicable exposure limits, job activities, and other substances in the work place when designing engineering controls and selecting personal protective equipment. If engineering controls or work practices are not adequate to prevent exposure to harmful levels of this material, the personal protective equipment listed below is recommended. The user should read and understand all instructions and limitations supplied with the equipment since protection is usually provided for a limited time or under certain circumstances.

Personal protective equipment

Respiratory protection	: If ventilation or other engineering controls are not adequate to maintain minimal oxygen content of 19.5% by volume under normal atmospheric pressure, a supplied-air NIOSH approved respirator may be appropriate. If exposure to harmful levels of airborne material may occur, a NIOSH approved respirator that provides protection may be appropriate, such as:. A positive pressure, air-supplying respirator may be appropriate if there is potential for uncontrolled release, aerosolization, exposure levels are not known, or other circumstances where air-purifying respirators may not provide adequate protection.
Hand protection	: The suitability for a specific workplace should be discussed with the producers of the protective gloves. Please observe the instructions regarding permeability and breakthrough time which are provided by the supplier of the gloves. Also take into consideration the specific local conditions under which the product is used, such as the danger of cuts, abrasion, and the contact time. Gloves should be discarded and replaced if there is any indication of degradation or chemical breakthrough.
Eye protection	: Eye wash bottle with pure water. Tightly fitting safety goggles.
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Skin and body protection	: Choose body protection in relation to its type, to the concentration and amount of dangerous substances, and to the specific work-place. Wear as appropriate:. Remove and wash contaminated clothing before re-use. Skin should be washed after contact. Footwear protecting against chemicals.
Hygiene measures	: When using do not eat or drink. When using do not smoke. Wash hands before breaks and at the end of workday.
Protective measures	: Wear suitable protective equipment. When using do not eat, drink or smoke. Avoid contact with skin.
For additional details, see th	e Exposure Scenario in the Annex portion
ECTION 9: Physical and chen	nical properties
.1 Information on basic phys	ical and chemical properties
Appearance	
Physical state Color Odor	: liquid : Colorless : mild hydrocarbon
Safety data	
Flash point	: 98-110°C (208-230°F) Method: closed cup
Lower explosion limit	: No data available
Upper explosion limit	: No data available
Oxidizing properties	: No
Autoignition temperature	: 198-230°C (388-446°F)
Thermal decomposition	: 300 °F
Molecular formula	: UVCB
Molecular weight	: Varies
рН	: Not applicable
Melting point/freezing point	: -16°C (3°F)
Pour point	No data available
Boiling point/boiling range	: 233°C (451°F)
Vapor pressure	: 4,00 Pa at 24°C (75°F)
Relative density	: 0,86
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			at 16 °C (61 °F)
	Water solubility	:	0,00393 mg/l Method: OECD Test Guideline 105
	Partition coefficient: n- octanol/water	:	Pow: 7,43 at 20°C (68°F)
	Viscosity, dynamic	:	2,6 cP at 20°C (68°F)
	Viscosity, kinematic	:	No data available
	Relative vapor density	:	3 (Air = 1.0)
	Evaporation rate	:	< 1
9.2	Other information Conductivity	:	No data available
SEC	TION 10: Stability and reactive	vity	1
10.1			
	Reactivity	:	Stable under recommended storage conditions.
10.2			
	Chemical stability	:	This material is considered stable under normal ambient and anticipated storage and handling conditions of temperature and pressure.
10.3			
	Possibility of hazardous rea	ctic	ons
	Hazardous reactions	:	Further information: No decomposition if stored and applied as directed.
10.4	Conditions to avoid	:	Heat, sparks, fire, and oxidizing agents.
10.5	Materials to avoid	:	May react with oxygen and strong oxidizing agents, such as chlorates, nitrates, peroxides, etc.
	Thermal decomposition	:	300 °F
10.6	Hazardous decomposition	:	Carbon oxides
	products		Sulfur oxides
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Other data	: No decomposition if stored and applied as directed.
SECTION 11: Toxicological inf	ormation
11.1 Information on toxicologic	cal effects
Acute oral toxicity	
tert-Dodecanethiol	: LD50: > 2.000 mg/kg Species: Rat Sex: female Method: OECD Test Guideline 423
Acute inhalation toxicity	
tert-Dodecanethiol	 LC50: > 1,97 mg/l Exposure time: 4 h Species: Rat Sex: male and female Method: OECD Test Guideline 403 Information given is based on data obtained from similar substances.
Acute dermal toxicity	
tert-Dodecanethiol	 LD50: > 2.000 mg/kg Species: Rat Sex: male Method: OECD Test Guideline 402 Information given is based on data obtained from similar substances.
Skin irritation	
tert-Dodecanethiol	: Skin irritation
Eye irritation tert-Dodecanethiol	: Eye irritation
Sensitization	
tert-Dodecanethiol	: The product is a skin sensitizer, sub-category 1B.
Repeated dose toxicity	
tert-Dodecanethiol	 Species: Rat, male Sex: male Application Route: Inhalation Dose: 0, 26, 98 ppm Exposure time: 4 wk Number of exposures: 6 h/d, 5 d/wk Lowest observable effect level: 26 ppm Method: OECD Test Guideline 412 Target Organs: Kidney, Liver
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	Species: Rat, female Sex: female Application Route: Inhalation Dose: 0, 26, 98 ppm
	Exposure time: 4 wk Number of exposures: 6 h/d, 5 d/wk NOEL: 26 ppm Method: OECD Guideline 412 Target Organs: Liver, Kidney
	Species: Dog, male and female Sex: male and female
	Application Route: Inhalation Dose: 0, 25, 106 ppm Exposure time: 4 wk Number of exposures: 6 h/d, 5 d/wk
	NOEL: 25 ppm Lowest observable effect level: 109 ppm Method: OECD Test Guideline 412 Target Organs: Liver
	Species: Mouse, male and female Sex: male and female Application Route: Inhalation Dose: 0, 25, 109 ppm
	Exposure time: 4 wk Number of exposures: 6 h/d, 5 d/wk Lowest observable effect level: 25 ppm Method: OECD Test Guideline 412
	Target Organs: Liver
	Species: Rat, male Sex: male Application Route: oral gavage
	Dose: 50, 100, 200 mg/kg Exposure time: 10 wk Number of exposures: once daily
	NOEL: 200 mg/kg Method: OECD Guideline 422 Target Organs: Kidney, Liver
	Species: Rat, female Sex: female
	Application Route: oral gavage Dose: 50, 100, 200 mg/kg
	Exposure time: 8 - 9 wk Number of exposures: once daily NOEL: 200 mg/kg
	Method: OECD Guideline 422 Target Organs: Liver
	Species: Rat, male Sex: male
	Application Route: Inhalation Dose: 5, 25, 100 ppm Exposure time: 13 wk
	Exposure time: 13 wk Number of exposures: 6h/d, 5d/wk NOEL: 25 ppm
	Method: OECD Test Guideline 413
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	Species: Rat, female Sex: female Application Route: Inhalation Dose: 5, 25, 100 ppm Exposure time: 13 wk Number of exposures: 6h/d, 5d/wk NOEL: 25 ppm Method: OECD Test Guideline 413
Genotoxicity in vitro	
tert-Dodecanethiol	: Test Type: Ames test Metabolic activation: with and without metabolic activation Method: OECD Test Guideline 471 Result: negative
	Test Type: Mouse lymphoma assay Metabolic activation: with and without metabolic activation Method: OECD Guideline 476 Result: negative
	Test Type: Sister Chromatid Exchange Assay Metabolic activation: with and without metabolic activation Method: OECD Guideline 479 Result: negative
	Test Type: Chromosome aberration test in vitro Metabolic activation: with and without metabolic activation Method: OECD Test Guideline 473 Result: negative
Genotoxicity in vivo	
tert-Dodecanethiol	 Test Type: In vivo micronucleus test Species: Mouse Route of Application: Oral Dose: 1250, 2500, 5000 mg/kg/bw Method: Mutagenicity (micronucleus test) Result: negative Remarks: Information given is based on data obtained from similar substances.
Reproductive toxicity	
tert-Dodecanethiol	 Species: Rat Sex: male Application Route: oral gavage Dose: 50, 100, 200 mg/kg/d Exposure time: 10 wk Number of exposures: Daily Method: OECD Guideline 422 NOAEL Parent: 200 mg/kg Animal testing did not show any effects on fertility.
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	Species: Bot
	Species: Rat Sex: female Application Route: oral gavage Dose: 50, 100, 200 mg/kg/d Exposure time: 8 - 9 wk Number of exposures: Daily Method: OECD Guideline 422 NOAEL Parent: 200 mg/kg NOAEL F1: 100 mg/kg Animal testing did not show any effects on fertility. Reduced fetal weight.
	Species: Rat Sex: male Application Route: oral gavage Dose: 25, 75, 200 mg/kg/d Exposure time: 18 wk Number of exposures: Daily Method: OECD Test Guideline 443 NOAEL Parent: 200 mg/kg NOAEL F1: 200 mg/kg NOAEL F2: 200 mg/kg Animal testing did not show any effects on fertility.
	Species: Rat Sex: female Application Route: oral gavage Dose: 25, 75, 200 mg/kg/d Exposure time: 16 - 18 wk Number of exposures: Daily Method: OECD Test Guideline 443 NOAEL Parent: 200 mg/kg NOAEL F1: 200 mg/kg NOAEL F2: 200 mg/kg Animal testing did not show any effects on fertility. Reduced fetal weight.
Developmental Toxicity	
tert-Dodecanethiol :	Species: Rat Application Route: Inhalation Dose: 0, 22.7, 88.6 ppm Number of exposures: 6 hrs/d Test period: GD 6-19 Method: OECD Guideline 414 NOAEL Teratogenicity: >= 88.6 ppm No adverse effects expected
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	Species: Mouse Application Route: Inhalation Dose: 0, 22.7, 88.6 ppm Number of exposures: 6 hrs/d Test period: GD 6-19 Method: OECD Guideline 414 NOAEL Teratogenicity: >= 88.6 ppm No adverse effects expected
	Species: Rabbit Application Route: oral gavage Dose: 0, 50, 100, 200 mg/kg/d Number of exposures: Daily Test period: GD 6-28 Method: OECD Guideline 414 NOAEL Teratogenicity: 100 mg/kg NOAEL Maternal: 100 mg/kg Embryotoxic effects and adverse effects on the offspring were detected only at high maternally toxic doses
Orfom® CO210 Collector Aspiration toxicity	: May be harmful if swallowed and enters airways.
CMR effects	
tert-Dodecanethiol	 Carcinogenicity: Not available Mutagenicity: Tests on bacterial or mammalian cell cultures did not show mutagenic effects. Teratogenicity: Animal testing did not show any effects on fetal development. Reproductive toxicity: No toxicity to reproduction
1.2 Information on other haza	rds
Orfom® CO210 Collector Further information Endocrine disrupting properties	 Solvents may degrease the skin. The substance/mixture does not contain components considered to have endocrine disrupting properties according to REACH Article 57(f) or Commission Delegated regulation (EU) 2017/2100 or Commission Regulation (EU) 2018/605 at levels of 0.1% or higher.
SECTION 12: Ecological inform	nation
2.1 Toxicity	
Toxicity to fish	
tert-Dodecanethiol	: LL50: > 100 mg/l Exposure time: 96 h Species: Danio rerio (Zebra Fish) static test Method: OECD Test Guideline 203
	No toxicity at the limit of solubility.

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Toxicity to daphnia and ot	her aquatic invertebrates
tert-Dodecanethiol	 EC50: > 0,056 mg/l Exposure time: 48 h Species: Daphnia magna (Water flea) semi-static test Method: OECD Test Guideline 202 No toxicity at the limit of solubility.
Toxicity to bacteria	
tert-Dodecanethiol	: NOEC: 8,6 mg/l Exposure time: 3 h Growth rate Respiration inhibition Method: OECD Test Guideline 209
	NOEC: > 10 mg/l Exposure time: 3 h Growth rate Respiration inhibition Method: OECD Test Guideline 209
Toxicity to daphnia and ot	ther aquatic invertebrates (Chronic toxicity)
tert-Dodecanethiol	 NOEC: 0,0108 mg/l Exposure time: 21 d Species: Daphnia magna (Water flea) semi-static test Method: OECD Test Guideline 211 No toxicity at the limit of solubility.
12.2 Persistence and degradab	bility
Biodegradability	
tert-Dodecanethiol	 aerobic Result: Not readily biodegradable. 0 % Testing period: 28 d Method: OECD Test Guideline 301D
12.3	
Bioaccumulative potential	
Bioaccumulation tert-Dodecanethiol	: Species: Danio rerio (zebra fish)
	Exposure time: 15 d Bioconcentration factor (BCF): > 500 - < 1.950 Method: OECD Test Guideline 305 Biomagnification factor <1 The product may be accumulated in organisms.
12.4 Mobility in soil	
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Mobility	
tert-Dodecanethiol	: After release, adsorbs onto soil.
2.5	
Results of PBT and vPvB as	 Sessment This substance/mixture contains no components considered to be either persistent, bioaccumulative and toxic (PBT), or very persistent and very bioaccumulative (vPvB) at levels of 0.1% or higher.
2.6 Endocrine disrupting prope	rties
Endocrine disrupting properties	: The substance/mixture does not contain components considered to have endocrine disrupting properties according to REACH Article 57(f) or Commission Delegated regulation (EU) 2017/2100 or Commission Regulation (EU) 2018/605 at levels of 0.1% or higher.
2.7 Other adverse effects	
Additional ecological information 2.8	: May cause long lasting harmful effects to aquatic life.
Additional Information	
Ecotoxicology Assessment	
Short-term (acute) aquatic haz tert-Dodecanethiol	zard : No toxicity at the limit of solubility.
Long-term (chronic) aquatic hat tert-Dodecanethiol	azard : May cause long lasting harmful effects to aquatic life.
SECTION 13: Disposal consideration	ations
3.1	
Waste treatment methods	ertains only to the product as shipped.
Use material for its intended p may meet the criteria of a haz other State and local regulatio regulated components may be	purpose or recycle if possible. This material, if it must be discarded, aardous waste as defined by US EPA under RCRA (40 CFR 261) or ons. Measurement of certain physical properties and analysis for e necessary to make a correct determination. If this material is ste, federal law requires disposal at a licensed hazardous waste
Product	: The product should not be allowed to enter drains, water courses or the soil. Do not contaminate ponds, waterways or ditches with chemical or used container. Send to a licensed waste management company.
Contaminated packaging	: Empty remaining contents. Dispose of as unused product. Do not re-use empty containers.
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For additional details, see the Exposure Scenario in the Annex portion

SECTION 14: Transport information

14.1 - 14.7

Transport information

The shipping descriptions shown here are for bulk shipments only, and may not apply to shipments in non-bulk packages (see regulatory definition).

Consult the appropriate domestic or international mode-specific and quantity-specific Dangerous Goods Regulations for additional shipping description requirements (e.g., technical name or names, etc.) Therefore, the information shown here, may not always agree with the bill of lading shipping description for the material. Flashpoints for the material may vary slightly between the SDS and the bill of lading.

US DOT (UNITED STATES DEPARTMENT OF TRANSPORTATION)

NOT REGULATED AS A HAZARDOUS MATERIAL OR DANGEROUS GOODS FOR TRANSPORTATION BY THIS AGENCY.

IMO / IMDG (INTERNATIONAL MARITIME DANGEROUS GOODS)

NOT REGULATED AS A HAZARDOUS MATERIAL OR DANGEROUS GOODS FOR TRANSPORTATION BY THIS AGENCY.

IATA (INTERNATIONAL AIR TRANSPORT ASSOCIATION)

UN3334, AVIATION REGULATED LIQUID, N.O.S., (TERT – DODECANETHIOL), 9, III

ADR (AGREEMENT ON DANGEROUS GOODS BY ROAD (EUROPE))

NOT REGULATED AS A HAZARDOUS MATERIAL OR DANGEROUS GOODS FOR TRANSPORTATION BY THIS AGENCY.

RID (REGULATIONS CONCERNING THE INTERNATIONAL TRANSPORT OF DANGEROUS GOODS (EUROPE))

NOT REGULATED AS A HAZARDOUS MATERIAL OR DANGEROUS GOODS FOR TRANSPORTATION BY THIS AGENCY.

ADN (EUROPEAN AGREEMENT CONCERNING THE INTERNATIONAL CARRIAGE OF DANGEROUS GOODS BY INLAND WATERWAYS)

NOT REGULATED AS A HAZARDOUS MATERIAL OR DANGEROUS GOODS FOR TRANSPORTATION BY THIS AGENCY.

Other information

: tert- Dodecanethiol, S.T. 3, Cat.Y

Maritime transport in bulk according to IMO instruments

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SECTION 15: Regulatory information

15.1					
	Safety, health and environmental regulations/legislation specific for the substance or mixture National legislation				
	Commission Regulation (EU) 2015/830 of 28 May 2015 amending Regulation (EC) No 1907/2006 of the European Parliament and of the Council on the Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH)				
	Water hazard class : (Germany)	WGK 2 VwVw		endangering	
15.2	Chemical Safety Assessment				
	Components : tert-do	decane	ethiol	A Chemical Safety Assessment has been carried out for this substance.	246-619-1
	Major Accident Hazard : Legislation	96/82/ Directi		Update: 2003 2/EC does not apply	
	:		SEVES3 plicable	Update:	
	Notification status				
	Europe REACH	:		oduct is in full compliance according	g to REACH
	Switzerland CH INV	:		inventory, or in compliance with the	e inventory
	United States of America (USA)	:	On or i	n compliance with the active portion	
	TSCA Canada DSL			nventory ponents of this product are on the (Canadian
	Canada DSE	•	DSL	ponents of this product are on the t	Janaulan
	Australia AIIC	:		inventory, or in compliance with the	
	New Zealand NZIoC	:		inventory, or in compliance with the	
	Japan ENCS Korea KECI	:		inventory, or in compliance with the stances in this product were registe	
		•		egistered, or exempted from registra	
				m through an Only Representative	
				CH regulations. Importation of this ed if the Korean Importer of Record	
				d on CPChem's notifications or if th	
			Record	themselves notified the substances	S.
	Philippines PICCS	:	On the	inventory, or in compliance with the	e inventorv
	Taiwan TCSI	:	On the	inventory, or in compliance with the	inventory
	China IECSC	:	On the	inventory, or in compliance with the	e inventory

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SECTION 16: Other information

NFPA Classification	: Health Hazard: 2 Fire Hazard: 1 Reactivity Hazard: 0	2 0
Further information		

Significant changes since the last version are highlighted in the margin. This version replaces all previous versions.

The information in this SDS pertains only to the product as shipped.

The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text.

ACGIH	American Conference of	LD50	Lethal Dose 50%
	Government Industrial Hygienists		
AIIC	Australian Inventory of Industrial	LOAEL	Lowest Observed Adverse Effe
	Chemicals		Level
DSL	Canada, Domestic Substances	NFPA	National Fire Protection Agenc
	List		
NDSL	Canada, Non-Domestic	NIOSH	National Institute for Occupatio
	Substances List		Safety & Health
CNS	Central Nervous System	NTP	National Toxicology Program
CAS	Chemical Abstract Service	NZIoC	New Zealand Inventory of
			Chemicals
EC50	Effective Concentration	NOAEL	No Observable Adverse Effect
			Level
EC50	Effective Concentration 50%	NOEC	No Observed Effect Concentra
EGEST	EOSCA Generic Exposure	OSHA	Occupational Safety & Health
	Scenario Tool		Administration
EOSCA	European Oilfield Specialty	PEL	Permissible Exposure Limit
	Chemicals Association		
EINECS	European Inventory of Existing	PICCS	Philippines Inventory of
	Chemical Substances		Commercial Chemical Substar
MAK	Germany Maximum Concentration	PRNT	Presumed Not Toxic
	Values		
GHS	Globally Harmonized System	RCRA	Resource Conservation Recov
		<u> </u>	Act
>=	Greater Than or Equal To	STEL	Short-term Exposure Limit
IC50	Inhibition Concentration 50%	SARA	Superfund Amendments and
			Reauthorization Act.
IARC	International Agency for Research	TLV	Threshold Limit Value
·	on Cancer		
IECSC	Inventory of Existing Chemical	TWA	Time Weighted Average
	Substances in China		
ENCS	Japan, Inventory of Existing and	TSCA	Toxic Substance Control Act
· · · · · · · · · · · · · · · · · · ·	New Chemical Substances		
KECI	Korea, Existing Chemical	UVCB	Unknown or Variable Composi
	Inventory		Complex Reaction Products, a

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	1		Biological Materials
<=	Less Than or Equal To	WHMIS	Workplace Hazardous Materials Information System
LC50	Lethal Concentration 50%	ATE	Acute toxicity estimate

Full text of H-Statements referred to under sections 2 and 3.

H315	Causes skin irritation.
H317	May cause an allergic skin reaction.
H319	Causes serious eve irritation.

11313	
H413	May cause long lasting harmful effects to aquatic life.

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Annex	
AIIIICA	

	nufacture
Main User Groups Sector of use Process category	 SU 3: Industrial uses: Uses of substances as such or in preparations at industrial sites SU3: Industrial Manufacturing (all) PROC1: Use in closed process, no likelihood of exposure PROC2: Use in closed, continuous process with occasional controlled exposure
	 PROC8b: Transfer of substance or preparation (charging/discharging) from/ to vessels/ large containers at dedicated facilities PROC9: Transfer of substance or preparation into small containers (dedicated filling line, including weighing) PROC15: Use as laboratory reagent
Environmental release category	: ERC1: Manufacture of substances
2.1 Contributing scenario contro	lling environmental exposure for:ERC1: Manufacture of
substances	3
Environment factors not influenced	
Flow rate	: 0 m3/d
Remarks	: Not relevant since there is no release to waste water (dry
	process).
Other given operational conditions a	affecting environmental exposure
Local release to the environment	5
Emission or Release Factor: Air	: 0%
Emission or Release Factor: Water	
Emission or Release Factor: Soil	
Local release rate: Water	: 0 kg/day
Remarks	: The waste of the substance is collected in a slop tank and
Remarks	treated as a waste by a dedicated contractor.
Local release rate: Air	•
Local release rate: Air Remarks	: 0 kg/day
	: Incineration of gases with efficiency 100%.
Local release rate: Soil Remarks	: 0 kg/day : There is no direct exposure to soil.
Kemarks	
Technical conditions and measures	
	/ Organizational measures : Not applicable
Technical conditions and measures	: Not applicable
Technical conditions and measures Remarks	: Not applicable
Technical conditions and measures Remarks Conditions and measures related to Type of Sewage Treatment Plant	: Not applicable municipal sewage treatment plant
Technical conditions and measures Remarks Conditions and measures related to	 Not applicable municipal sewage treatment plant Municipal sewage treatment plant 0 %
Technical conditions and measures Remarks Conditions and measures related to Type of Sewage Treatment Plant Effectiveness (of a measure)	 Not applicable municipal sewage treatment plant Municipal sewage treatment plant
Technical conditions and measures Remarks Conditions and measures related to Type of Sewage Treatment Plant Effectiveness (of a measure)	 Not applicable municipal sewage treatment plant Municipal sewage treatment plant 0 % Not relevant since there is no release to waste water (dry
Technical conditions and measures Remarks Conditions and measures related to Type of Sewage Treatment Plant Effectiveness (of a measure) Remarks	 Not applicable municipal sewage treatment plant Municipal sewage treatment plant 0 % Not relevant since there is no release to waste water (dry process).
Technical conditions and measures Remarks Conditions and measures related to Type of Sewage Treatment Plant Effectiveness (of a measure) Remarks	 Not applicable municipal sewage treatment plant Municipal sewage treatment plant 0 % Not relevant since there is no release to waste water (dry process).
 Technical conditions and measures Remarks Conditions and measures related to Type of Sewage Treatment Plant Effectiveness (of a measure) Remarks 2.2 Contributing scenario contro process, no likelihood of exposu 	 Not applicable municipal sewage treatment plant Municipal sewage treatment plant 0 % Not relevant since there is no release to waste water (dry process).
Technical conditions and measures Remarks Conditions and measures related to Type of Sewage Treatment Plant Effectiveness (of a measure) Remarks 2.2 Contributing scenario contro	 Not applicable municipal sewage treatment plant Municipal sewage treatment plant 0 % Not relevant since there is no release to waste water (dry process).

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Physical Form (at time of use) Process Temperature	: Liquid substance : <= 40 °C
Frequency and duration of use Exposure duration	: <4 h
Human factors not influenced by Exposed skin area	risk management : One hand face only (240 cm2)
Other operational conditions affe	•
Outdoor / Indoor Remarks	IndoorGood general ventilation (3-5 air changes per hour)
Technical conditions and measure Use product only in closed system Local exhaust ventilation- inhalation	۱.
Conditions and measures related	I to personal protection, hygiene and health evaluation
Respiratory Protection, No (Effect Dermal Protection, No (Effectiven	
2.2 Contributing scenario con continuous process with occa	trolling worker exposure for: PROC2: Use in closed, isional controlled exposure
Product characteristics Physical Form (at time of use) Process Temperature	: Liquid substance : <= 40 °C
Frequency and duration of use Exposure duration	: <1h
Human factors not influenced by Exposed skin area	risk management : Palms of both hands (480 cm2)
Other operational conditions affe Outdoor / Indoor	e cting workers exposure : Indoor
Remarks	: Good general ventilation (3-5 air changes per hour)
Technical conditions and measure Closed continuous process with o Local exhaust ventilation- inhalatio Local exhaust ventilation-dermal:,	ccasional controlled exposure on:, Yes (Effectiveness: 90 %)
	I to personal protection, hygiene and health evaluation sistant face shield, goggles, or safety glasses with side shields when
Respiratory Protection, No (Effect Dermal Protection, Yes, Wear che employee training. (Effectiveness:	emically resistant gloves (tested to EN374) in combination with 'basic'
2.2 Contributing sconario con	trolling worker exposure for: PROC8b: Transfer of
	rging/ discharging) from/ to vessels/ large containers at

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Product characteristics Physical Form (at time of use) : Liquid substance Process Temperature : <= 40 °C Frequency and duration of use Exposure duration : <1h Human factors not influenced by risk management Exposed skin area : Two hands (960 cm2) Other operational conditions affecting workers exposure Outdoor / Indoor : Indoor Remarks : Good general ventilation (3-5 air changes per hour) Technical conditions and measures Semi-closed process with occasional controlled exposure Local exhaust ventilation- inhalation:, Yes (Effectiveness: 95 %) Local exhaust ventilation-dermal:, Yes (Effectiveness: 95 %) Conditions and measures related to personal protection, hygiene and health evaluation Eve Protection, Yes, chemically resistant face shield, goggles, or safety glasses with side shields when there is potential for direct contact Respiratory Protection, No (Effectiveness: 0%) Dermal Protection, Yes, Wear chemically resistant gloves (tested to EN374) in combination with 'basic' employee training. (Effectiveness: 80 %) 2.2 Contributing scenario controlling worker exposure for: PROC9: Transfer of substance or preparation into small containers (dedicated filling line, including weighing) Product characteristics Physical Form (at time of use) : Liquid substance Process Temperature : <= 40 °C Frequency and duration of use Exposure duration : <1h Human factors not influenced by risk management Exposed skin area : Palms of both hands (480 cm2) Other operational conditions affecting workers exposure Outdoor / Indoor : Indoor Remarks : Enhanced general ventilation (5-10 air changes per hour) Technical conditions and measures Semi-closed process with occasional controlled exposure Local exhaust ventilation- inhalation:, Yes (Effectiveness: 90 %) Local exhaust ventilation-dermal:, No (Effectiveness: 0 %) Conditions and measures related to personal protection, hygiene and health evaluation Eye Protection, Yes, chemically resistant face shield, goggles, or safety glasses with side shields when there is potential for direct contact Respiratory Protection, No (Effectiveness: 0 %) Dermal Protection, Yes, Wear chemically resistant gloves (tested to EN374) in combination with specific activity training. (Effectiveness: 95 %) SDS Number:100000102762 24/52

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reagent								
Product charac Physical Form Process Temp	n (at time of use)	: Liqu : <= 4	id substance 0 °C					
Frequency and Exposure dura	duration of use ation	: <11	ı					
Human factors Exposed skin	not influenced I area		gement hand face only (2	240 c	m2)			
Other operation Outdoor / Indo Remarks	nal conditions and Dor	: Indo	-	tion (3	3-5 air	changes p	er hour)	
echnical cond	litions and meas	sures						
(Effectiveness:			arry out in a vente veness: 0 %)	ed boo	oth pro	ovided with	laminar a	irflow.
Eye Protection		resistant face	al protection, hy shield, goggles, c					ls when
Dermal Protec	otection, No (Effe tion, Yes, Wear o ing. (Effectivenes	hemically resi	%) istant gloves (test	ted to	EN37	4) in comb	ination wi	th 'basic'
Dermal Protec employee train 6. Exposure e	tion, Yes, Wear c	hemically resiss: 80 %)	stant gloves (test	ted to	EN37	4) in comb	ination wi	th 'basic'
Dermal Protec employee train 3. Exposure e	tion, Yes, Wear c ing. (Effectivenes	hemically resiss: 80 %)	stant gloves (test		e type	4) in comb	chara	th 'basic'
Dermal Protec employee train 3. Exposure e Environment Contributing	tion, Yes, Wear of ing. (Effectivenes stimation and Exposure Assessment	hemically resises: 80 %) reference to Specific	Stant gloves (test Dits source Compartment Marine sediment			Level of Exposure 0,0004866 mg/kg dry weight (d.w	chara ratio (P ;	Risk cterization EC/PNEC) 0,01
Dermal Protec employee train B. Exposure e Environment Contributing Scenario ERC1	tion, Yes, Wear of ing. (Effectivenes stimation and Exposure Assessment Method EUSES	hemically resises: 80 %)	o its source			Level of Exposure 0,0004866 mg/kg dry	chara ratio (P ;	Risk cterization EC/PNEC)
Dermal Protec employee train 3. Exposure e Environment Contributing Scenario ERC1 ERC1: Manuf	tion, Yes, Wear of ing. (Effectivenes stimation and Exposure Assessment Method EUSES	hemically resises: 80 %)	Stant gloves (test its source Compartment Marine sediment Sewage			Level of Exposure 0,0004866 mg/kg dry weight (d.w	chara ratio (P ;	Risk cterization EC/PNEC) 0,01
Dermal Protec employee train 3. Exposure e Environment Contributing Scenario ERC1 ERC1: Manuf	tion, Yes, Wear of ing. (Effectivenes stimation and Exposure Assessment Method EUSES	hemically resises: 80 %)	Stant gloves (test its source Compartment Marine sediment Sewage		e type	Level of Exposure 0,0004866 mg/kg dry weight (d.w	chara ratio (P) .)	Risk cterization EC/PNEC) 0,01
Dermal Protec employee train 3. Exposure e Environment Contributing Scenario ERC1: Manuf Norkers/Consu Contributing Scenario	tion, Yes, Wear of ing. (Effectivenes stimation and Exposure Assessment Method EUSES acture of substan	hemically resises: 80 %) reference to Specific conditions ICES Specific	Stant gloves (test Dits source Compartment Marine sediment Marine sediment Sewage treatment plant Value type Worker – inhalat long-term – syste	Value tion, emic	e type Level o	Level of Exposure 0,0004866 mg/kg dry weight (d.w 0 mg/L of Exposure	chara ratio (P) .) Risk chara ratio (PE	Risk cterization EC/PNEC) 0,01 0,01 0,01 acterization C/PNEC): 071
Dermal Protec employee train 3. Exposure e Environment Contributing Scenario ERC1 ERC1: Manuf Norkers/Consu Contributing	tion, Yes, Wear of ing. (Effectivenes stimation and Exposure Assessment Method EUSES acture of substan Imers Exposure Assessment Method ECETOC TRA	hemically resises: 80 %) reference to Specific conditions ICES Specific	Stant gloves (test Dits source Compartment Marine sediment Sewage treatment plant Value type Worker – inhalate	Value tion, emic long-	e type Level o	Level of Exposure 0,0004866 mg/kg dry weight (d.w 0 mg/L	chara ratio (P) .) Risk chara ratio (PE	Risk cterization EC/PNEC) 0,01 0,01 0,01 acterization C/PNEC):

SAFETY DATA SHEET Orfom® CO210 Collector Version 1.0 Revision Date 2023-01-12 PROC2 ECETOC TRA Worker - inhalation, 0,118 mg/m3 0,236 Modified long-term – systemic Worker - dermal, long-0,274 mg/kg/d 0,161 term – systemic Worker – long-term – 0,397 systemic Combined routes Worker - inhalation, PROC8b ECETOC TRA 0,295 mg/m3 0,59 Modified long-term - systemic 0,137 mg/kg/d Worker - dermal, long-0,081 term – systemic Worker - long-term -0,671 systemic Combined routes PROC9 ECETOC TRA Worker - inhalation, 0,253 mg/m3 0,506 Modified long-term - systemic Worker - dermal, long-0,343 mg/kg/d 0,202 term – systemic Worker - long-term -0,708 systemic Combined routes PROC15 ECETOC TRA Worker - inhalation, 0,059 mg/m3 0,118 Modified long-term - systemic Worker - dermal, long-0,068 mg/kg/d 0,04 term – systemic Worker - long-term -0,158 systemic Combined routes PROC1: Use in closed process, no likelihood of exposure PROC2: Use in closed, continuous process with occasional controlled exposure PROC8b: Transfer of substance or preparation (charging/ discharging) from/ to vessels/ large containers at dedicated facilities PROC9: Transfer of substance or preparation into small containers (dedicated filling line, including weighing) PROC15: Use as laboratory reagent Guidance to Downstream User to evaluate whether he works inside the boundaries set

Not applicable

by the Exposure Scenario

1. Short title of Exposure Scenar	io: Formulation
Main User Groups	: SU 3: Industrial uses: Uses of substances as such or in preparations at industrial sites
Process category	 PROC1: Use in closed process, no likelihood of exposure PROC2: Use in closed, continuous process with occasional controlled exposure PROC3: Use in closed batch process (synthesis or formulation) PROC4: Use in batch and other process (synthesis) where opportunity for exposure arises PROC8a: Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at non-dedicated facilities PROC8b: Transfer of substance or preparation (charging/ discharging) from/ to vessels/ large containers at dedicated facilities
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	PROC9: Transfer of substance or preparation into small containers (dedicated filling line, including weighing) PROC15: Use as laboratory reagent
Environmental release category	: ERC2: Formulation of preparations
Further information	: Formulation of preparations for Gold Paint for glassware and ceramics.
2.1 Contributing scenario contro preparations	Iling environmental exposure for:ERC2: Formulation of
Environment factors not influenced Flow rate	by risk management : 18.000 m3/d
Other given operational conditions	affecting environmental exposure
Local release to the environment Emission or Release Factor: Air Emission or Release Factor: Water Emission or Release Factor: Soil	: 0,1 % : 0,3 %
Local release rate: Air Local release rate: Water Local release rate: Soil	: 0,1 kg/day : 0,3 kg/day : 0,01 kg/day
Technical conditions and measures Remarks Remarks	 / Organizational measures Sludge should be incinerated, contained or reclaimed. No application of sewage sludge to soil
Conditions and measures related to	
Type of Sewage Treatment Plant Flow rate of sewage treatment plant effluent	: Municipal sewage treatment plant : 2.000 m3/d
Effectiveness (of a measure) Sludge Treatment	: 96 % : Not applicable
2.2 Contributing scenario contro process, no likelihood of exposu	Iling worker exposure for: PROC1: Use in closed ire
Product characteristics Physical Form (at time of use)	
Process Temperature	: <= 40 °C
Frequency and duration of use Exposure duration	: <4 h
Human factors not influenced by ris Exposed skin area	k management : One hand face only (240 cm2)
Other operational conditions affecti Outdoor / Indoor	•
Outdoor / Indoor Remarks	IndoorGood general ventilation (3-5 air changes per hour)
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Version 1.0 Revision Date Technical conditions and measures Use product only in closed system. Local exhaust ventilation- inhalation:, No (Effectiveness: 0 %) Conditions and measures related to personal protection, hygiene and health evaluation Respiratory Protection, No (Effectiveness: 0 %) Dermal Protection, No (Effectiveness: 0 %) 2.2 Contributing scenario controlling worker exposure for: PROC2: Use in clocontinuous process with occasional controlled exposure Product characteristics Physical Form (at time of use) : Liquid substance Process Temperature : <= 40 °C Frequency and duration of use Exposure duration : < 4 h Human factors not influenced by risk management Exposed skin area : Palms of both hands (480 cm2) Other operational conditions affecting workers exposure Outdoor / Indoor : Indoor Remarks : Good general ventilation (3-5 air changes per ho Technical conditions and measures Closed continuous process with occasional controlled exposure Local exhaust ventilation- inhalation:, No (Effectiveness: 0 %) %)	ate 2023-01-12
Use product only in closed system. Local exhaust ventilation- inhalation:, No (Effectiveness: 0 %) Conditions and measures related to personal protection, hygiene and health evaluati Respiratory Protection, No (Effectiveness: 0 %) Dermal Protection, No (Effectiveness: 0 %) 2.2 Contributing scenario controlling worker exposure for: PROC2: Use in clo continuous process with occasional controlled exposure Product characteristics Physical Form (at time of use) : Liquid substance Process Temperature : <= 40 °C Frequency and duration of use Exposure duration i : < 4 h Human factors not influenced by risk management Exposed skin area : Palms of both hands (480 cm2) Other operational conditions affecting workers exposure Outdoor / Indoor : Indoor Remarks : Good general ventilation (3-5 air changes per ho Technical conditions and measures Closed continuous process with occasional controlled exposure	
Respiratory Protection, No (Effectiveness: 0 %) Dermal Protection, No (Effectiveness: 0 %) 2.2 Contributing scenario controlling worker exposure for: PROC2: Use in clocontinuous process with occasional controlled exposure Product characteristics Physical Form (at time of use) : Liquid substance Process Temperature : <= 40 °C	
Dermal Protection, No (Effectiveness: 0 %) 2.2 Contributing scenario controlling worker exposure for: PROC2: Use in clocontinuous process with occasional controlled exposure Product characteristics Physical Form (at time of use) : Liquid substance Process Temperature : <= 40 °C	ion
continuous process with occasional controlled exposure Product characteristics Physical Form (at time of use) : Liquid substance Process Temperature : <= 40 °C	
Physical Form (at time of use) : Liquid substance Process Temperature : <= 40 °C	osed,
Exposure duration : < 4 h	
Exposed skin area : Palms of both hands (480 cm2) Other operational conditions affecting workers exposure Outdoor / Indoor : Indoor Remarks : Good general ventilation (3-5 air changes per ho Technical conditions and measures Closed continuous process with occasional controlled exposure	
Outdoor / Indoor : Indoor Remarks : Good general ventilation (3-5 air changes per ho Technical conditions and measures Closed continuous process with occasional controlled exposure	
Technical conditions and measures Closed continuous process with occasional controlled exposure	
Closed continuous process with occasional controlled exposure	our)
Conditions and measures related to personal protection, hygiene and health evaluation Eye Protection, Yes, chemically resistant face shield, goggles, or safety glasses with side s there is potential for direct contact	
Respiratory Protection, No (Effectiveness: 0 %) Dermal Protection, Yes, Wear chemically resistant gloves (tested to EN374) in combination employee training., Wear chemically resistant gloves (tested to EN374) in combination wit activity training. (Effectiveness: 80 %)	
2.2 Contributing scenario controlling worker exposure for: PROC3: Use in clo process (synthesis or formulation)	osed batch
Product characteristicsPhysical Form (at time of use): Liquid substanceProcess Temperature: <= 40 °C	
Frequency and duration of useExposure duration: < 1 h	
Human factors not influenced by risk management Exposed skin area : One hand face only (240 cm2)	
Other operational conditions affecting workers exposure Outdoor / Indoor : Indoor	
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Remarks	: Good general ventilation (3-5 air changes per hour)
Technical conditions and measure Closed continuous process with occ Local exhaust ventilation- inhalatior	casional controlled exposure
	o personal protection, hygiene and health evaluation stant face shield, goggles, or safety glasses with side shields when
Respiratory Protection, No (Effectiv Dermal Protection, Yes, Wear chen employee training. (Effectiveness: 8	nically resistant gloves (tested to EN374) in combination with 'basic'
and other process (synthesis) v	olling worker exposure for: PROC4, PROC9: Use in batch where opportunity for exposure arises, Transfer of small containers (dedicated filling line, including
Product characteristics	
Physical Form (at time of use) Process Temperature	: Liquid substance : <= 40 °C
Frequency and duration of use Exposure duration	: <1h
Human factors not influenced by r Exposed skin area	isk management : Palms of both hands (480 cm2)
Other operational conditions affec	ting workers exposure
Outdoor / Indoor Remarks	: Indoor : Enhanced general ventilation (5-10 air changes per hour)
Technical conditions and measure Semi-closed process with occasion Local exhaust ventilation- inhalatior	s al controlled exposure
	o personal protection, hygiene and health evaluation stant face shield, goggles, or safety glasses with side shields when
Respiratory Protection, No (Effectiv Dermal Protection, Yes, Wear chen employee training. (Effectiveness: 8	nically resistant gloves (tested to EN374) in combination with 'basic'
	olling worker exposure for: PROC8a: Transfer of ging/discharging) from/to vessels/large containers at
Product characteristics Physical Form (at time of use) Process Temperature	: Liquid substance : <= 40 °C
Frequency and duration of use	
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Exposure duration	: < 15 min
Human factors not influenced by Exposed skin area	y risk management : Two hands (960 cm2)
Other operational conditions affe Outdoor / Indoor Remarks	ecting workers exposure : Indoor : Enhanced general ventilation (5-10 air changes per hour)
Technical conditions and measu	ires
Local exhaust ventilation- inhalat	ion:, No (Effectiveness: 0 %)
	d to personal protection, hygiene and health evaluation sistant face shield, goggles, or safety glasses with side shields when ct
Respiratory Protection, No (Effec Dermal Protection, Yes, Wear ch employee training. (Effectiveness	emically resistant gloves (tested to EN374) in combination with 'basic'
	ntrolling worker exposure for: PROC8b: Transfer of arging/ discharging) from/ to vessels/ large containers at
Product characteristics Physical Form (at time of use) Process Temperature	: Liquid substance : <= 40 °C
Physical Form (at time of use) Process Temperature	
Physical Form (at time of use) Process Temperature Frequency and duration of use Exposure duration	: <= 40 °C : <1 h
 Physical Form (at time of use) Process Temperature Frequency and duration of use Exposure duration Human factors not influenced by Exposed skin area 	: <= 40 °C : < 1 h y risk management : Two hands (960 cm2)
Process Temperature Frequency and duration of use Exposure duration Human factors not influenced by Exposed skin area Other operational conditions affe	: <= 40 °C : < 1 h y risk management : Two hands (960 cm2) ecting workers exposure
 Physical Form (at time of use) Process Temperature Frequency and duration of use Exposure duration Human factors not influenced by Exposed skin area Other operational conditions affer Outdoor / Indoor 	 : <= 40 °C : < 1 h y risk management : Two hands (960 cm2) ecting workers exposure : Indoor : Enhanced general ventilation (5-10 air changes per hour) irres onal controlled exposure
 Physical Form (at time of use) Process Temperature Frequency and duration of use Exposure duration Human factors not influenced by Exposed skin area Other operational conditions affer Outdoor / Indoor Remarks Technical conditions and measures Local exhaust ventilation- inhalat Conditions and measures related 	 : <= 40 °C : < 1 h y risk management : Two hands (960 cm2) ecting workers exposure : Indoor : Enhanced general ventilation (5-10 air changes per hour) Intes onal controlled exposure ion:, No (Effectiveness: 0 %) d to personal protection, hygiene and health evaluation asistant face shield, goggles, or safety glasses with side shields when
 Physical Form (at time of use) Process Temperature Frequency and duration of use Exposure duration Human factors not influenced by Exposed skin area Other operational conditions affe Outdoor / Indoor Remarks Technical conditions and measu Semi-closed process with occasic Local exhaust ventilation- inhalat Conditions and measures related Eye Protection, Yes, chemically re there is potential for direct contact Respiratory Protection, No (Effect Dermal Protection, Yes, Wear ch 	 : <= 40 °C : < 1 h y risk management Two hands (960 cm2) ecting workers exposure Indoor Enhanced general ventilation (5-10 air changes per hour) ures onal controlled exposure ion:, No (Effectiveness: 0 %) d to personal protection, hygiene and health evaluation sistant face shield, goggles, or safety glasses with side shields when at tiveness: 0 %) emically resistant gloves (tested to EN374) in combination with 'basic' aally resistant gloves (tested to EN374) in combination with specific
 Physical Form (at time of use) Process Temperature Frequency and duration of use Exposure duration Human factors not influenced by Exposed skin area Other operational conditions affer Outdoor / Indoor Remarks Technical conditions and measure Semi-closed process with occasin Local exhaust ventilation- inhalat Conditions and measures related Eye Protection, Yes, chemically re there is potential for direct contact Respiratory Protection, No (Effect Dermal Protection, Yes, Wear ch employee training., Wear chemic activity training. (Effectiveness: 8) 	 : <= 40 °C : < 1 h y risk management Two hands (960 cm2) ecting workers exposure Indoor Enhanced general ventilation (5-10 air changes per hour) ures onal controlled exposure ion:, No (Effectiveness: 0 %) d to personal protection, hygiene and health evaluation sistant face shield, goggles, or safety glasses with side shields when at tiveness: 0 %) emically resistant gloves (tested to EN374) in combination with 'basic' aally resistant gloves (tested to EN374) in combination with specific

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Physical For Process Terr	cteristics m (at time of use) nperature	: Liqui : <= 4	id substance 0 °C			
requency an Exposure du	d duration of use ration	: <11	٦			
luman factors Exposed skir	s not influenced l n area		gement hand face only (240 cm2)		
Other operation Outdoor / Inc Remarks	onal conditions at	: Indo	-	entilation (5-	10 air change	es per hour)
echnical con	ditions and meas	sures				
Local exhaus	t ventilation- inhala	ation:, No (Effe	ectiveness: 0 %)			
Respiratory P Dermal Prote	tial for direct contains Protection, No (Effection, Yes, Wear of the second sec	ectiveness: 0 % chemically resi	stant gloves (test			
Respiratory P Dermal Prote employee trai activity trainin	Protection, No (Effe	ectiveness: 0 % chemically resi ically resistant 80 %)	stant gloves (test gloves (tested to			
Respiratory P Dermal Prote employee trai activity trainin	Protection, No (Effection, Yes, Wear of ning., Wear cheming. (Effectiveness:	ectiveness: 0 % chemically resi ically resistant 80 %) reference to	stant gloves (test gloves (tested to its source	5 EN374) in		
Respiratory P Dermal Prote employee trai activity trainin	Protection, No (Effection, Yes, Wear of ning., Wear cheming. (Effectiveness:	ectiveness: 0 % chemically resi ically resistant 80 %)	stant gloves (test gloves (tested to			with specific
Respiratory P Dermal Prote employee trai activity trainin 5. Exposure 6. Exposure	Protection, No (Effection, Yes, Wear of ning., Wear cheming. (Effectiveness: estimation and Exposure Assessment	ectiveness: 0 % chemically resistant ically resistant 80 %) reference to Specific	stant gloves (test gloves (tested to its source	5 EN374) in	combination	with specific
Respiratory P Dermal Prote employee trai activity trainin 5. Exposure 6. Exposure 6. Exposure 6. Contributing Scenario	Protection, No (Effection, Yes, Wear of ning., Wear cheming. (Effectiveness: estimation and Exposure Assessment Method	ectiveness: 0 % chemically resistant ically resistant 80 %) reference to Specific	stant gloves (test gloves (tested to bits source Compartment Freshwater	5 EN374) in	Level of Exposure 0,253 mg/kg dry weight	with specific Risk characterization ratio (PEC/PNEC):

Workers/Consumers

Contributing Scenario	Exposure Assessment Method	Specific conditions	Value type	Level of Exposure	Risk characterization ratio (PEC/PNEC):	
PROC1	ECETOC TRA Modified		Worker – inhalation, long-term – systemic	0,004 mg/m3	< 0,01	
			Worker – dermal, long- term – systemic	0,003 mg/kg/d	< 0,01	
			Worker – long-term – systemic Combined routes		< 0,01	
PROC2	ECETOC TRA Modified		Worker – inhalation, long-term – systemic	0,354 mg/m3	0,708	
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		Worker – dermal, long- term – systemic	0,027 mg/kg/d	0,016
		Worker – long-term – systemic Combined routes		0,724
PROC3	ECETOC TRA Modified	Worker – inhalation, long-term – systemic	0,354 mg/m3	0,708
		Worker – dermal, long- term – systemic	0,014 mg/kg/d	< 0,01
		Worker – long-term – systemic Combined routes		0,716
PROC4, PROC9	ECETOC TRA Modified	Worker – inhalation, long-term – systemic	0,253 mg/m3	0,506
		Worker – dermal, long- term – systemic	0,137 mg/kg/d	0,081
		Worker – long-term – systemic Combined routes		0,587
PROC8a	ECETOC TRA Modified	Worker – inhalation, long-term – systemic	0,253 mg/m3	0,506
		Worker – dermal, long- term – systemic	0,274 mg/kg/d	0,161
		Worker – long-term – systemic Combined routes		0,667
PROC8b	ECETOC TRA Modified	Worker – inhalation, long-term – systemic	0,253 mg/m3	0,506
		Worker – dermal, long- term – systemic	0,274 mg/kg/d	0,161
		Worker – long-term – systemic Combined routes		0,667
PROC15	ECETOC TRA Modified	Worker – inhalation, long-term – systemic	0,253 mg/m3	0,506
		Worker – dermal, long- term – systemic	0,007 mg/kg/d	< 0,01
		Worker – long-term – systemic Combined routes elihood of exposure		0,51

PROC2: Use in closed, continuous process with occasional controlled exposure

PROC3: Use in closed batch process (synthesis or formulation)

PROC4: Use in batch and other process (synthesis) where opportunity for exposure arises PROC9: Transfer of substance or preparation into small containers (dedicated filling line, including weighing)

PROC8a: Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at non-dedicated facilities

PROC8b: Transfer of substance or preparation (charging/ discharging) from/ to vessels/ large containers at dedicated facilities

PROC15: Use as laboratory reagent

4. Guidance to Downstream User to evaluate whether he works inside the boundaries set by the Exposure Scenario

Not applicable

1. Short title of Exposure Scenario: Use in polymer processing –industrial

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Main User Groups	: SU 3: Industrial uses: Uses of substances as such or in
Main Oser Oroups	preparations at industrial sites
Sector of use	: SU11: Manufacture of rubber products
Process category	: PROC1: Use in closed process, no likelihood of exposure
	PROC2: Use in closed, continuous process with occasional
	controlled exposure
	PROC3: Use in closed batch process (synthesis or
	formulation)
	PROC4: Use in batch and other process (synthesis) where
	opportunity for exposure arises
	PROC8a: Transfer of substance or preparation
	(charging/discharging) from/to vessels/large containers at
	non-dedicated facilities
	PROC8b: Transfer of substance or preparation (charging/
	discharging) from/ to vessels/ large containers at dedicated
	facilities
	PROC9: Transfer of substance or preparation into small
	containers (dedicated filling line, including weighing)
	PROC15: Use as laboratory reagent
Environmental release category	: ERC6d: Industrial use of process regulators for polymerisatior
	processes in production of resins, rubbers, polymers
Further information	:
	Chain Transfer Agent for the production of styrene butadiene
	latex for rubber and paper coating, nitrile rubber, acrylonitrile
	butadiene styrene (ABS) and also for the production of
	expandable polystyrene.
of process regulators for polyme	olling environmental exposure for:ERC6d: Industrial use erisation processes in production of resins, rubbers,
of process regulators for polyme	Iling environmental exposure for:ERC6d: Industrial use
of process regulators for polyme oolymers Environment factors not influenced	olling environmental exposure for:ERC6d: Industrial use erisation processes in production of resins, rubbers, by risk management
of process regulators for polyme polymers	olling environmental exposure for:ERC6d: Industrial use erisation processes in production of resins, rubbers,
of process regulators for polyme polymers Environment factors not influenced Flow rate Other given operational conditions	billing environmental exposure for:ERC6d: Industrial use erisation processes in production of resins, rubbers, by risk management : 400.000 m3/d
of process regulators for polyme polymers Environment factors not influenced Flow rate Other given operational conditions Local release to the environment	billing environmental exposure for:ERC6d: Industrial use erisation processes in production of resins, rubbers, by risk management : 400.000 m3/d affecting environmental exposure
of process regulators for polyme polymers Environment factors not influenced Flow rate Other given operational conditions	billing environmental exposure for:ERC6d: Industrial use erisation processes in production of resins, rubbers, by risk management : 400.000 m3/d
of process regulators for polyme bolymers Environment factors not influenced Flow rate Dther given operational conditions Local release to the environment Emission or Release Factor: Air Emission or Release Factor: Water	by risk management : 400.000 m3/d affecting environmental exposure : 0 % : 0,1 %
of process regulators for polyme polymers Environment factors not influenced Flow rate Other given operational conditions Local release to the environment Emission or Release Factor: Air Emission or Release Factor: Water Emission or Release Factor: Soil	by risk management : 400.000 m3/d affecting environmental exposure : 0 % : 0,1 % : 0,025 %
Environment factors not influenced Flow rate Dther given operational conditions Local release to the environment Emission or Release Factor: Air Emission or Release Factor: Water Emission or Release Factor: Soil Local release rate: Water	billing environmental exposure for:ERC6d: Industrial use brisation processes in production of resins, rubbers, by risk management : 400.000 m3/d affecting environmental exposure : 0 % : 0,1 % : 0,025 % : 2,5 kg/day
Environment factors not influenced Flow rate Dther given operational conditions Local release to the environment Emission or Release Factor: Air Emission or Release Factor: Water Emission or Release Factor: Soil	by risk management : 400.000 m3/d affecting environmental exposure : 0 % : 0,1 % : 0,025 %
of process regulators for polymers Environment factors not influenced Flow rate Other given operational conditions Local release to the environment Emission or Release Factor: Air Emission or Release Factor: Water Emission or Release Factor: Soil Local release rate: Water Local release rate: Air	blling environmental exposure for:ERC6d: Industrial use erisation processes in production of resins, rubbers, by risk management : 400.000 m3/d affecting environmental exposure : 0 % : 0,1 % : 0,025 % : 2,5 kg/day : 0 kg/day
Environment factors not influenced Flow rate Dther given operational conditions Local release to the environment Emission or Release Factor: Air Emission or Release Factor: Water Emission or Release Factor: Soil Local release rate: Water Local release rate: Air	blling environmental exposure for:ERC6d: Industrial use erisation processes in production of resins, rubbers, by risk management : 400.000 m3/d affecting environmental exposure : 0 % : 0,1 % : 0,025 % : 2,5 kg/day : 0 kg/day
Environment factors not influenced Flow rate Dther given operational conditions Local release to the environment Emission or Release Factor: Air Emission or Release Factor: Water Emission or Release Factor: Soil Local release rate: Water Local release rate: Air	blling environmental exposure for:ERC6d: Industrial use erisation processes in production of resins, rubbers, by risk management : 400.000 m3/d affecting environmental exposure : 0 % : 0,1 % : 0,025 % : 2,5 kg/day : 0 kg/day
Environment factors not influenced Flow rate Dther given operational conditions Local release to the environment Emission or Release Factor: Air Emission or Release Factor: Water Emission or Release Factor: Soil Local release rate: Water Local release rate: Air Fechnical conditions and measures Remarks Remarks	by risk management : 400.000 m3/d affecting environmental exposure : 0 % : 0,1 % : 0,025 % : 2,5 kg/day : 0 kg/day
Environment factors not influenced Flow rate Dther given operational conditions Local release to the environment Emission or Release Factor: Air Emission or Release Factor: Water Emission or Release Factor: Soil Local release rate: Water Local release rate: Air Fechnical conditions and measures Remarks Remarks Remarks	bling environmental exposure for:ERC6d: Industrial use erisation processes in production of resins, rubbers, by risk management : 400.000 m3/d affecting environmental exposure : 0 % : 0,1 % : 0,025 % : 2,5 kg/day : 0 kg/day
Environment factors not influenced Flow rate Dther given operational conditions Local release to the environment Emission or Release Factor: Air Emission or Release Factor: Water Emission or Release Factor: Soil Local release rate: Water Local release rate: Air Technical conditions and measures Remarks Remarks Remarks Conditions and measures related to Type of Sewage Treatment Plant	bling environmental exposure for:ERC6d: Industrial use erisation processes in production of resins, rubbers, by risk management : 400.000 m3/d affecting environmental exposure : 0 % : 0,1 % : 0,025 % : 2,5 kg/day : 0 kg/day
 b) process regulators for polymers Environment factors not influenced Flow rate D) ther given operational conditions Local release to the environment Emission or Release Factor: Air Emission or Release Factor: Water Emission or Release Factor: Soil Local release rate: Water Local release rate: Air Fechnical conditions and measures Remarks Remarks Conditions and measures related to Type of Sewage Treatment Plant Flow rate of sewage treatment 	Image: Straight of the series of the seri
 b) f process regulators for polymers Environment factors not influenced Flow rate D) ther given operational conditions Local release to the environment Emission or Release Factor: Air Emission or Release Factor: Water Emission or Release Factor: Soil Local release rate: Water Local release rate: Air Fechnical conditions and measures Remarks Remarks Conditions and measures related to Type of Sewage Treatment Plant Flow rate of sewage treatment plant effluent 	bling environmental exposure for:ERC6d: Industrial use erisation processes in production of resins, rubbers, by risk management : 400.000 m3/d affecting environmental exposure : 0 % : 0,1 % : 0,025 % : 2,5 kg/day : 0 kg/day //Organizational measures : Sludge should be incinerated, contained or reclaimed. : No application of sewage sludge to soil omunicipal sewage treatment plant : Municipal sewage treatment plant : 10.000 m3/d
Environment factors not influenced Flow rate Dther given operational conditions Local release to the environment Emission or Release Factor: Air Emission or Release Factor: Water Emission or Release Factor: Soil Local release rate: Water Local release rate: Air Technical conditions and measures Remarks Remarks Remarks Conditions and measures related to Type of Sewage Treatment Plant Flow rate of sewage treatment	Image: State of the series
 b) f process regulators for polymers c) f process regulators not influenced Flow rate c) f process to the environment for polymers c) f process for polymers c) f	bling environmental exposure for:ERC6d: Industrial use erisation processes in production of resins, rubbers, by risk management : 400.000 m3/d affecting environmental exposure : 0 % : 0,1 % : 0,025 % : 2,5 kg/day : 0 kg/day //Organizational measures : Sludge should be incinerated, contained or reclaimed. : No application of sewage sludge to soil omunicipal sewage treatment plant : Municipal sewage treatment plant : 10.000 m3/d

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2.2 Contributing scenario controlling worker exposure for: PROC1: Use in closed process, no likelihood of exposure				
Product characteristics Physical Form (at time of use) Process Temperature	: Liquid substance : <= 40 °C			
Frequency and duration of use Exposure duration	: <4 h			
Human factors not influenced by ris Exposed skin area	sk management : One hand face only (240 cm2)			
Other operational conditions affecti Outdoor / Indoor Remarks	i ng workers exposure : Indoor : Good general ventilation (3-5 air changes per hour)			
Technical conditions and measures Use product only in closed system. Local exhaust ventilation- inhalation:				
Conditions and measures related to personal protection, hygiene and health evaluation				
Respiratory Protection, No (Effective Dermal Protection, No (Effectiveness				
2.2 Contributing scenario controlling worker exposure for: PROC2: Use in closed, continuous process with occasional controlled exposure				
Product characteristics Physical Form (at time of use) Process Temperature	: Liquid substance : <= 40 °C			
Frequency and duration of use Exposure duration	: <4 h			
Human factors not influenced by ris Exposed skin area	sk management : Palms of both hands (480 cm2)			
Other operational conditions affecti Outdoor / Indoor Remarks	i ng workers exposure : Indoor : Good general ventilation (3-5 air changes per hour)			
Technical conditions and measures Closed continuous process with occa Local exhaust ventilation- inhalation:	asional controlled exposure			
	o personal protection, hygiene and health evaluation ant face shield, goggles, or safety glasses with side shields when			
	eness: 0 %) ically resistant gloves (tested to EN374) in combination with 'basic' resistant gloves (tested to EN374) in combination with specific			
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activity training. (Effectiveness: 80 %)

Product characteristics	
Physical Form (at time of use) Process Temperature	: Liquid substance : <= 40 °C
Tiocess Temperature	. <= +0 0
Frequency and duration of use	
Exposure duration	: <1h
Human factors not influenced by	risk management
Exposed skin area	: One hand face only (240 cm2)
Other operational conditions affeo	cting workers exposure
Outdoor / Indoor	: Indoor
Remarks	: Good general ventilation (3-5 air changes per hour)
Technical conditions and measure	85
Closed continuous process with oc	
Local exhaust ventilation- inhalatio	
Conditions and measures related	to personal protection, hygiene and health evaluation
	istant face shield, goggles, or safety glasses with side shields when
there is potential for direct contact	
Descinatory Dratesticy No. (Effectiv	
Respiratory Protection, No (Effective	Veness: 0 %)
Dermal Protection Ves Wear cher	mically resistant doves (tested to EN374) in combination with 'basic
	mically resistant gloves (tested to EN374) in combination with 'basic
employee training., Wear chemical	mically resistant gloves (tested to EN374) in combination with 'basic Ily resistant gloves (tested to EN374) in combination with specific
	mically resistant gloves (tested to EN374) in combination with 'basic Ily resistant gloves (tested to EN374) in combination with specific
employee training., Wear chemical	mically resistant gloves (tested to EN374) in combination with 'basic Ily resistant gloves (tested to EN374) in combination with specific
employee training., Wear chemical activity training. (Effectiveness: 80 2.2 Contributing scenario cont	mically resistant gloves (tested to EN374) in combination with 'basic lly resistant gloves (tested to EN374) in combination with specific %) rolling worker exposure for: PROC4, PROC9: Use in batch
employee training., Wear chemical activity training. (Effectiveness: 80 2.2 Contributing scenario cont and other process (synthesis)	mically resistant gloves (tested to EN374) in combination with 'basic lly resistant gloves (tested to EN374) in combination with specific %) rolling worker exposure for: PROC4, PROC9: Use in batch where opportunity for exposure arises, Transfer of
employee training., Wear chemical activity training. (Effectiveness: 80 2.2 Contributing scenario cont and other process (synthesis) substance or preparation into s	mically resistant gloves (tested to EN374) in combination with 'basic lly resistant gloves (tested to EN374) in combination with specific %) rolling worker exposure for: PROC4, PROC9: Use in batch
employee training., Wear chemical activity training. (Effectiveness: 80 2.2 Contributing scenario cont and other process (synthesis)	mically resistant gloves (tested to EN374) in combination with 'basic lly resistant gloves (tested to EN374) in combination with specific %) rolling worker exposure for: PROC4, PROC9: Use in batch where opportunity for exposure arises, Transfer of
employee training., Wear chemical activity training. (Effectiveness: 80 2.2 Contributing scenario cont and other process (synthesis) substance or preparation into weighing)	mically resistant gloves (tested to EN374) in combination with 'basic lly resistant gloves (tested to EN374) in combination with specific %) rolling worker exposure for: PROC4, PROC9: Use in batch where opportunity for exposure arises, Transfer of
employee training., Wear chemical activity training. (Effectiveness: 80 2.2 Contributing scenario cont and other process (synthesis) substance or preparation into weighing) Product characteristics	mically resistant gloves (tested to EN374) in combination with 'basic lly resistant gloves (tested to EN374) in combination with specific %) rolling worker exposure for: PROC4, PROC9: Use in batch where opportunity for exposure arises, Transfer of small containers (dedicated filling line, including
employee training., Wear chemical activity training. (Effectiveness: 80 2.2 Contributing scenario cont and other process (synthesis) substance or preparation into weighing) Product characteristics Physical Form (at time of use)	mically resistant gloves (tested to EN374) in combination with 'basic lly resistant gloves (tested to EN374) in combination with specific %) rolling worker exposure for: PROC4, PROC9: Use in batch where opportunity for exposure arises, Transfer of small containers (dedicated filling line, including
employee training., Wear chemical activity training. (Effectiveness: 80 2.2 Contributing scenario cont and other process (synthesis) substance or preparation into weighing) Product characteristics	 mically resistant gloves (tested to EN374) in combination with 'basic lly resistant gloves (tested to EN374) in combination with specific %) rolling worker exposure for: PROC4, PROC9: Use in batch where opportunity for exposure arises, Transfer of small containers (dedicated filling line, including Liquid substance
employee training., Wear chemical activity training. (Effectiveness: 80 2.2 Contributing scenario cont and other process (synthesis) substance or preparation into weighing) Product characteristics Physical Form (at time of use) Process Temperature Frequency and duration of use	<pre>mically resistant gloves (tested to EN374) in combination with 'basic lly resistant gloves (tested to EN374) in combination with specific %) rolling worker exposure for: PROC4, PROC9: Use in batch where opportunity for exposure arises, Transfer of small containers (dedicated filling line, including : Liquid substance : <= 40 °C</pre>
employee training., Wear chemical activity training. (Effectiveness: 80 2.2 Contributing scenario cont and other process (synthesis) substance or preparation into weighing) Product characteristics Physical Form (at time of use) Process Temperature	 mically resistant gloves (tested to EN374) in combination with 'basic lly resistant gloves (tested to EN374) in combination with specific %) rolling worker exposure for: PROC4, PROC9: Use in batch where opportunity for exposure arises, Transfer of small containers (dedicated filling line, including Liquid substance
employee training., Wear chemical activity training. (Effectiveness: 80 2.2 Contributing scenario cont and other process (synthesis) substance or preparation into weighing) Product characteristics Physical Form (at time of use) Process Temperature Frequency and duration of use Exposure duration	<pre>mically resistant gloves (tested to EN374) in combination with 'basic lly resistant gloves (tested to EN374) in combination with specific %) rolling worker exposure for: PROC4, PROC9: Use in batch where opportunity for exposure arises, Transfer of small containers (dedicated filling line, including : Liquid substance : <= 40 °C : < 1 h</pre>
employee training., Wear chemical activity training. (Effectiveness: 80 2.2 Contributing scenario cont and other process (synthesis) substance or preparation into weighing) Product characteristics Physical Form (at time of use) Process Temperature Frequency and duration of use Exposure duration	<pre>mically resistant gloves (tested to EN374) in combination with 'basic lly resistant gloves (tested to EN374) in combination with specific %) rolling worker exposure for: PROC4, PROC9: Use in batch where opportunity for exposure arises, Transfer of small containers (dedicated filling line, including : Liquid substance : <= 40 °C : < 1 h</pre>
employee training., Wear chemical activity training. (Effectiveness: 80 2.2 Contributing scenario cont and other process (synthesis) substance or preparation into s weighing) Product characteristics Physical Form (at time of use) Process Temperature Frequency and duration of use Exposure duration Human factors not influenced by the Exposed skin area	<pre>mically resistant gloves (tested to EN374) in combination with 'basic lly resistant gloves (tested to EN374) in combination with specific %) rolling worker exposure for: PROC4, PROC9: Use in batch where opportunity for exposure arises, Transfer of small containers (dedicated filling line, including : Liquid substance : <= 40 °C : < 1 h risk management : Palms of both hands (480 cm2)</pre>
employee training., Wear chemical activity training. (Effectiveness: 80 2.2 Contributing scenario cont and other process (synthesis) substance or preparation into weighing) Product characteristics Physical Form (at time of use) Process Temperature Frequency and duration of use Exposure duration Human factors not influenced by the Exposed skin area	mically resistant gloves (tested to EN374) in combination with 'basic lly resistant gloves (tested to EN374) in combination with specific %) rolling worker exposure for: PROC4, PROC9: Use in batch where opportunity for exposure arises, Transfer of small containers (dedicated filling line, including : Liquid substance : <= 40 °C : < 1 h risk management : Palms of both hands (480 cm2) cting workers exposure
employee training., Wear chemical activity training. (Effectiveness: 80 2.2 Contributing scenario cont and other process (synthesis) substance or preparation into s weighing) Product characteristics Physical Form (at time of use) Process Temperature Frequency and duration of use Exposure duration Human factors not influenced by the Exposed skin area Other operational conditions affect Outdoor / Indoor	mically resistant gloves (tested to EN374) in combination with 'basic lly resistant gloves (tested to EN374) in combination with specific %) rolling worker exposure for: PROC4, PROC9: Use in batch where opportunity for exposure arises, Transfer of small containers (dedicated filling line, including : Liquid substance : <= 40 °C : < 1 h risk management : Palms of both hands (480 cm2) cting workers exposure : Indoor
employee training., Wear chemical activity training. (Effectiveness: 80 2.2 Contributing scenario cont and other process (synthesis) substance or preparation into weighing) Product characteristics Physical Form (at time of use) Process Temperature Frequency and duration of use Exposure duration Human factors not influenced by the Exposed skin area	mically resistant gloves (tested to EN374) in combination with 'basic lly resistant gloves (tested to EN374) in combination with specific %) rolling worker exposure for: PROC4, PROC9: Use in batch where opportunity for exposure arises, Transfer of small containers (dedicated filling line, including : Liquid substance : <= 40 °C : < 1 h risk management : Palms of both hands (480 cm2) cting workers exposure
employee training., Wear chemical activity training. (Effectiveness: 80 2.2 Contributing scenario cont and other process (synthesis) substance or preparation into weighing) Product characteristics Physical Form (at time of use) Process Temperature Frequency and duration of use Exposure duration Human factors not influenced by the Exposed skin area Other operational conditions affect Outdoor / Indoor	<pre>mically resistant gloves (tested to EN374) in combination with 'basic lly resistant gloves (tested to EN374) in combination with specific %) rolling worker exposure for: PROC4, PROC9: Use in batch where opportunity for exposure arises, Transfer of small containers (dedicated filling line, including : Liquid substance : <= 40 °C : <1 h risk management : Palms of both hands (480 cm2) cting workers exposure : Indoor : Enhanced general ventilation (5-10 air changes per hour)</pre>
employee training., Wear chemical activity training. (Effectiveness: 80 2.2 Contributing scenario cont and other process (synthesis) substance or preparation into weighing) Product characteristics Physical Form (at time of use) Process Temperature Frequency and duration of use Exposure duration Human factors not influenced by the Exposed skin area Other operational conditions affect Outdoor / Indoor Remarks	mically resistant gloves (tested to EN374) in combination with 'basic lly resistant gloves (tested to EN374) in combination with specific %) rolling worker exposure for: PROC4, PROC9: Use in batch where opportunity for exposure arises, Transfer of small containers (dedicated filling line, including : Liquid substance : <= 40 °C : < 1 h risk management : Palms of both hands (480 cm2) cting workers exposure : Indoor : Enhanced general ventilation (5-10 air changes per hour) es
employee training., Wear chemical activity training. (Effectiveness: 80 2.2 Contributing scenario cont and other process (synthesis) substance or preparation into weighing) Product characteristics Physical Form (at time of use) Process Temperature Frequency and duration of use Exposure duration Human factors not influenced by the Exposed skin area Other operational conditions affect Outdoor / Indoor Remarks Technical conditions and measured	mically resistant gloves (tested to EN374) in combination with 'basic lly resistant gloves (tested to EN374) in combination with specific %) rolling worker exposure for: PROC4, PROC9: Use in batch where opportunity for exposure arises, Transfer of small containers (dedicated filling line, including : Liquid substance : <= 40 °C : < 1 h risk management : Palms of both hands (480 cm2) cting workers exposure : Indoor : Enhanced general ventilation (5-10 air changes per hour) es mal controlled exposure
employee training., Wear chemical activity training. (Effectiveness: 80 2.2 Contributing scenario cont and other process (synthesis) substance or preparation into weighing) Product characteristics Physical Form (at time of use) Process Temperature Frequency and duration of use Exposure duration Human factors not influenced by the Exposed skin area Other operational conditions affect Outdoor / Indoor Remarks Technical conditions and measure Semi-closed process with occasion	mically resistant gloves (tested to EN374) in combination with 'basic lly resistant gloves (tested to EN374) in combination with specific %) rolling worker exposure for: PROC4, PROC9: Use in batch where opportunity for exposure arises, Transfer of small containers (dedicated filling line, including : Liquid substance : <= 40 °C : < 1 h risk management : Palms of both hands (480 cm2) cting workers exposure : Indoor : Enhanced general ventilation (5-10 air changes per hour) es mal controlled exposure

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Conditions and measures related to personal protection, hygiene and health evaluation Eye Protection, Yes, chemically resistant face shield, goggles, or safety glasses with side shields when there is potential for direct contact Respiratory Protection, No (Effectiveness: 0 %) Dermal Protection, Yes, Wear chemically resistant gloves (tested to EN374) in combination with 'basic' employee training., Wear chemically resistant gloves (tested to EN374) in combination with specific activity training. (Effectiveness: 80 %)					
2.2 Contributing scenario controlling worker exposure for: PROC8a: Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at non-dedicated facilities					
Product characteristics Physical Form (at time of use) Process Temperature	: Liquid substance : <= 40 °C				
Frequency and duration of use Exposure duration	: < 15 min				
Human factors not influenced by ris Exposed skin area	sk management : Two hands (960 cm2)				
Other operational conditions affect Outdoor / Indoor Remarks	ing workers exposure Indoor Enhanced general ventilation (5-10 air changes per hour) 				
Technical conditions and measures	s				
Local exhaust ventilation- inhalation	:, No (Effectiveness: 0 %)				
Conditions and measures related to personal protection, hygiene and health evaluation Eye Protection,Yes,chemically resistant face shield, goggles, or safety glasses with side shields when there is potential for direct contact					
Respiratory Protection, No (Effectiveness: 0 %) Dermal Protection, Yes, Wear chemically resistant gloves (tested to EN374) in combination with 'basic' employee training., Wear chemically resistant gloves (tested to EN374) in combination with specific activity training. (Effectiveness: 80 %)					
2.2 Contributing scenario controlling worker exposure for: PROC8b: Transfer of substance or preparation (charging/ discharging) from/ to vessels/ large containers at dedicated facilities					
Product characteristics Physical Form (at time of use) Process Temperature	: Liquid substance : <= 40 °C				
Frequency and duration of use Exposure duration	: <1h				
Human factors not influenced by ris Exposed skin area	sk management : Two hands (960 cm2)				
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[
					SAFE	TY DATA SHEET
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Other operation Outdoor / Indo Remarks		: Indoc	-	ntilation (5-	10 air change	es per hour)
	itions and mean ocess with occa ventilation- inhal	sional controlle				
Conditions and Eye Protection, there is potentia	Yes, chemically	resistant face s	I protection, hy hield, goggles, c			
Dermal Protect employee traini		chemically resis ically resistant	.) stant gloves (test gloves (tested to			
2.2 Contributir	na sconario o	ontrolling wa	rkor ovnosura	for: PPO	C15: Uco or	slaboratory
reagent	ig scenario co		ikei exposuie		C15. 05e a	siaboratory
Process Temp Frequency and Exposure dura Human factors I	(at time of use) erature duration of use tion not influenced	: <= 40 ; ; < 1 h	-			
Exposed skin a	area	: One l	hand face only (240 cm2)		
Other operation Outdoor / Indo Remarks		: Indoc	-	ntilation (5-	10 air change	es per hour)
Technical condi	tions and mea	SULLOS				
	ventilation- inhal		ctiveness: 0 %)			
there is potentia Respiratory Pro	Yes,chemically al for direct cont otection, No (Eff	resistant face s act ectiveness: 0 %	hield, goggles, c	or safety gla	isses with sid	e shields when
employee traini		ically resistant	stant gloves (test gloves (tested to			
3. Exposure es	stimation and	reference to	its source			
Environment						
Contributing Scenario	Exposure Assessment Method	Specific conditions	Compartment	Value type	Level of Exposure	Risk characterization ratio (PEC/PNEC):
ERC6d	EUSES		Freshwater		0,106 mg/kg	0,035
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		sediment		dry weight (d.w.)	
		Marine sediment		0,042 mg/kg dry weight (d.w.)	0,139
		Sewage treatment plant		0,01 mg/L	< 0,01
ERC6d: Indus	trial use of process regulators	for polymerisation	n processes	s in production	n of resins,

rubbers, polymers

Workers/Consumers

Contributing Scenario	Exposure Assessment Method	Specific conditions	Value type	Level of Exposure	Risk characterizatior ratio (PEC/PNEC):
PROC1	ECETOC TRA Modified		Worker – inhalation, long-term – systemic	0,004 mg/m3	< 0,01
			Worker – dermal, long- term – systemic	0,003 mg/kg/d	< 0,01
			Worker – long-term – systemic Combined routes		< 0,01
PROC2	ECETOC TRA Modified		Worker – inhalation, long-term – systemic	0,354 mg/m3	0,708
			Worker – dermal, long- term – systemic	0,027 mg/kg/d	0,016
			Worker – long-term – systemic Combined routes		0,724
PROC3	ECETOC TRA Modified		Worker – inhalation, long-term – systemic	0,354 mg/m3	0,708
			Worker – inhalation, long-term – systemic	0,014 mg/kg/d	< 0,01
			Worker – long-term – systemic Combined routes		0,716
PROC4, PROC9	ECETOC TRA Modified		Worker – inhalation, long-term – systemic	0,253 mg/m3	0,506
			Worker – dermal, long- term – systemic	0,137 mg/kg/d	0,081
			Worker – long-term – systemic Combined routes		0,587
PROC8a	ECETOC TRA Modified		Worker – inhalation, long-term – systemic	0,253 mg/m3	0,506
			Worker – dermal, long- term – systemic	0,274 mg/kg/d	0,161
			Worker – long-term – systemic Combined routes		0,667
PROC8b	ECETOC TRA Modified		Worker – inhalation, long-term – systemic	0,253 mg/m3	0,506
			Worker – dermal, long- term – systemic	0,274 mg/kg/d	0,161
			Worker – long-term – systemic Combined routes		0,667
PROC15	ECETOC TRA Modified		Worker – inhalation, long-term – systemic	0,253 mg/m3	0,506
			Worker – dermal, long- term – systemic	0,007 mg/kg/d	< 0,01
			Worker – long-term – systemic Combined routes		0,51

PROC3: Use in closed batch process (synthesis or formulation)

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PROC4: Use in batch and other process (synthesis) where opportunity for exposure arises PROC9: Transfer of substance or preparation into small containers (dedicated filling line, including weighing)

PROC8a: Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at non-dedicated facilities

PROC8b: Transfer of substance or preparation (charging/ discharging) from/ to vessels/ large containers at dedicated facilities

PROC15: Use as laboratory reagent

4. Guidance to Downstream User to evaluate whether he works inside the boundaries set by the Exposure Scenario

Not applicable 1. Short title of Exposure Scenario: Lubricants - Industrial

Main User Groups	: SU 3: Industrial uses: Uses of substances as such or in preparations at industrial sites
Sector of use	: SU0: Other
Process category	 PROC1: Use in closed process, no likelihood of exposure PROC2: Use in closed, continuous process with occasional controlled exposure PROC3: Use in closed batch process (synthesis or
	formulation)
	PROC4: Use in batch and other process (synthesis) where opportunity for exposure arises
	PROC8a: Transfer of substance or preparation
	(charging/discharging) from/to vessels/large containers at non-dedicated facilities
	PROC8b: Transfer of substance or preparation (charging/ discharging) from/ to vessels/ large containers at dedicated facilities
	PROC9: Transfer of substance or preparation into small containers (dedicated filling line, including weighing) PROC15: Use as laboratory reagent
Environmental release category	: ERC6a: Industrial use resulting in manufacture of another

2.1 Contributing scenario controlling environmental exposure for:ERC6a: Industrial use resulting in manufacture of another substance (use of intermediates)

substance (use of intermediates)

Environment factors not influenced by risk management							
Flow rate	: 400.000 m3/d						
Other given operational conditions a Local release to the environment	ffecting environmental exposure						
Emission or Release Factor: Air	: 0,001 %						
Emission or Release Factor: Water	: 0,3 %						
Emission or Release Factor: Soil	: 0,001 %						
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Local release to the environment Emission or Release Factor: Air Emission or Release Factor: Water Emission or Release Factor: Soil	: 0,001 % : 0,3 % : 0,001 %						

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Local release rate: Air Local release rate: Water	: 0,025 kg/day : 7,5 kg/day
Technical conditions and measure	
Remarks Remarks	Sludge should be incinerated, contained or reclaimed.No application of sewage sludge to soil
Conditions and measures related	to municipal sewage treatment plant
	: Municipal sewage treatment plant
Flow rate of sewage treatment	: 10.000 m3/d
plant effluent Sludge Treatment	: Not applicable
2.2 Contributing scenario contr process, no likelihood of expos	olling worker exposure for: PROC1: Use in closed sure
Product characteristics	
Physical Form (at time of use)	
Process Temperature	: <= 40 °C
Frequency and duration of use	
Exposure duration	: < 15 min
Human factors not influenced by r Exposed skin area	isk management : One hand face only (240 cm2)
Other operational conditions affec	ting workers exposure
Outdoor / Indoor	: Indoor
Remarks	: Good general ventilation (3-5 air changes per hour)
Technical conditions and measure Use product only in closed system. Local exhaust ventilation- inhalation	n:, No (Effectiveness: 0 %)
Local exhaust ventilation-dermal:, N	No (Effectiveness: 0 %)
	to personal protection, hygiene and health evaluation stant face shield, goggles, or safety glasses with side shields when
Respiratory Protection, No (Effectiv Dermal Protection, No (Effectivene	
2.2 Contributing scenario contr continuous process with occas	olling worker exposure for: PROC2: Use in closed, sional controlled exposure
Product characteristics	
Physical Form (at time of use) Process Temperature	: Liquid substance : <= 40 °C
Frequency and duration of use Exposure duration	: < 15 min
Human factors not influenced by r Exposed skin area	isk management : Palms of both hands (480 cm2)
Other operational conditions affec	ting workers exposure
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Outdoor / Indoor Remarks	: Indoor : Good general ventilation (3-5 air changes per hour)
Technical conditions and measure Closed continuous process with occ Local exhaust ventilation- inhalation Local exhaust ventilation-dermal:, N	casional controlled exposure n:, Yes (Effectiveness: 90 %)
	to personal protection, hygiene and health evaluation stant face shield, goggles, or safety glasses with side shields when
	ator with APF of 10 (Effectiveness: 90 %) nically resistant gloves (tested to EN374) in combination with 'basic' 30 %)
2.2 Contributing scenario contr process (synthesis or formulati	olling worker exposure for: PROC3: Use in closed batch ion)
Product characteristics Physical Form (at time of use) Process Temperature	: Liquid substance : <= 40 °C
Frequency and duration of use Exposure duration	: < 15 min
Human factors not influenced by r Exposed skin area	isk management : One hand face only (240 cm2)
Other operational conditions affec	•
Outdoor / Indoor Remarks	IndoorGood general ventilation (3-5 air changes per hour)
Technical conditions and measure Closed continuous process with occ Local exhaust ventilation- inhalation Local exhaust ventilation-dermal:, N	casional controlled exposure n:, Yes (Effectiveness: 90 %)
	to personal protection, hygiene and health evaluation stant face shield, goggles, or safety glasses with side shields when
	ator with APF of 10 (Effectiveness: 90 %) nically resistant gloves (tested to EN374) in combination with 'basic' 30 %)
	olling worker exposure for: PROC4: Use in batch and e opportunity for exposure arises
Product characteristics Physical Form (at time of use)	: Liquid substance
Process Temperature	: <= 40 °C
Frequency and duration of use Exposure duration	: < 15 min
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Human factors not influenced by Exposed skin area	<pre>/ risk management</pre>
Other operational conditions affe Outdoor / Indoor Remarks	ecting workers exposure : Indoor : Good general ventilation (3-5 air changes per hour)
Technical conditions and measu Semi-closed process with occasic Local exhaust ventilation- inhalat Local exhaust ventilation-dermal:	onal controlled exposure ion:, Yes (Effectiveness: 90 %)
	d to personal protection, hygiene and health evaluation sistant face shield, goggles, or safety glasses with side shields when at
	pirator with APF of 10 (Effectiveness: 90 %) emically resistant gloves (tested to EN374) in combination with 'basic' :: 90 %)
	arging/discharging) from/to vessels/large containers at
Process Temperature Frequency and duration of use	: <= 40 °C : < 15 min
Exposure duration Human factors not influenced by Exposed skin area	
Other operational conditions affe Outdoor / Indoor Remarks	ecting workers exposure : Indoor : Good general ventilation (3-5 air changes per hour)
Technical conditions and measu	ires
Local exhaust ventilation- inhalati Local exhaust ventilation-dermal:	
	d to personal protection, hygiene and health evaluation sistant face shield, goggles, or safety glasses with side shields when t
	pirator with APF of 10 (Effectiveness: 90 %) emically resistant gloves (tested to EN374) in combination with specifi 5 %)
	ntrolling worker exposure for: PROC8b: Transfer of arging/ discharging) from/ to vessels/ large containers at
Product characteristics	
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Physical Form (at time of use) Process Temperature	: Liquid substance : <= 40 °C
Frequency and duration of use Exposure duration	: < 15 min
Human factors not influenced by r Exposed skin area	isk management : Two hands (960 cm2)
Other operational conditions affec	
Outdoor / Indoor Remarks	: Indoor : Good general ventilation (3-5 air changes per hour)
Technical conditions and measure Semi-closed process with occasion Local exhaust ventilation- inhalation Local exhaust ventilation-dermal:, N	al controlled exposure n:, Yes (Effectiveness: 95 %)
	to personal protection, hygiene and health evaluation stant face shield, goggles, or safety glasses with side shields when
	rator with APF of 10 (Effectiveness: 90 %) nically resistant gloves (tested to EN374) in combination with specific %)
	rolling worker exposure for: PROC9: Transfer of small containers (dedicated filling line, including
substance or preparation into s weighing) Product characteristics Physical Form (at time of use)	
substance or preparation into s weighing) Product characteristics	small containers (dedicated filling line, including
substance or preparation into s weighing) Product characteristics Physical Form (at time of use) Process Temperature Frequency and duration of use	 Example containers (dedicated filling line, including Liquid substance <= 40 °C < 15 min
substance or preparation into s weighing) Product characteristics Physical Form (at time of use) Process Temperature Frequency and duration of use Exposure duration Human factors not influenced by r Exposed skin area Other operational conditions affect	 small containers (dedicated filling line, including : Liquid substance : <= 40 °C : < 15 min isk management : Palms of both hands (480 cm2) ting workers exposure
substance or preparation into s weighing) Product characteristics Physical Form (at time of use) Process Temperature Frequency and duration of use Exposure duration Human factors not influenced by r Exposed skin area	 small containers (dedicated filling line, including Liquid substance <= 40 °C < 15 min isk management Palms of both hands (480 cm2)
 substance or preparation into sweighing) Product characteristics Physical Form (at time of use) Process Temperature Frequency and duration of use Exposure duration Human factors not influenced by r Exposed skin area Other operational conditions affect Outdoor / Indoor 	 Example containers (dedicated filling line, including Liquid substance <= 40 °C < 15 min isk management Palms of both hands (480 cm2) ting workers exposure Indoor Good general ventilation (3-5 air changes per hour) es al controlled exposure n., Yes (Effectiveness: 90 %)
 substance or preparation into sweighing) Product characteristics Physical Form (at time of use) Process Temperature Frequency and duration of use Exposure duration Human factors not influenced by r Exposed skin area Other operational conditions affect Outdoor / Indoor	 Example containers (dedicated filling line, including Liquid substance <= 40 °C < 15 min isk management Palms of both hands (480 cm2) ting workers exposure Indoor Good general ventilation (3-5 air changes per hour) es al controlled exposure n., Yes (Effectiveness: 90 %)
 substance or preparation into sweighing) Product characteristics Physical Form (at time of use) Process Temperature Frequency and duration of use Exposure duration Human factors not influenced by responsed skin area Other operational conditions affect Outdoor / Indoor Remarks Technical conditions and measures Semi-closed process with occasion Local exhaust ventilation-inhalation Local exhaust ventilation-dermal:, New Semi-closed protection, Yes, chemically resist there is potential for direct contact 	 small containers (dedicated filling line, including : Liquid substance : <= 40 °C : < 15 min isk management : Palms of both hands (480 cm2) ting workers exposure : Indoor : Good general ventilation (3-5 air changes per hour) al controlled exposure n:, Yes (Effectiveness: 90 %) No (Effectiveness: 0 %) to personal protection, hygiene and health evaluation stant face shield, goggles, or safety glasses with side shields when
 substance or preparation into s weighing) Product characteristics Physical Form (at time of use) Process Temperature Frequency and duration of use Exposure duration Human factors not influenced by r Exposed skin area Other operational conditions affect Outdoor / Indoor Remarks Technical conditions and measure Semi-closed process with occasion Local exhaust ventilation- inhalation Local exhaust ventilation-dermal:, N Conditions and measures related at Eye Protection, Yes, chemically resist there is potential for direct contact Respiratory Protection, Yes, Respin Dermal Protection, Yes, Wear cher 	 small containers (dedicated filling line, including : Liquid substance : <= 40 °C : < 15 min isk management : Palms of both hands (480 cm2) ting workers exposure : Indoor : Good general ventilation (3-5 air changes per hour) al controlled exposure n:, Yes (Effectiveness: 90 %) No (Effectiveness: 0 %) to personal protection, hygiene and health evaluation stant face shield, goggles, or safety glasses with side shields when

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PROC2

ECETOC TRA

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0,012

2.2 Contribut reagent	ing scenario co	ontrolling wo	orker exposure	e for:	PRO	C15: Use	as laboratory
Product charac Physical Forr Process Tem	n (at time of use)	: Liqui : <= 4	d substance 0 °C				
Frequency and Exposure dur	I duration of use ation	: <15	min				
Human factors Exposed skin	not influenced area		jement hand face only (240 ci	m2)		
Other operatio Outdoor / Ind Remarks	nal conditions a	: Indo	•	tion (3	-5 air	changes p	er hour)
	ditions and meas		general termina		o un	onangee p	
Conditions and Eye Protection there is potent Respiratory Pr	tial for direct contained for direct contained for direction, Yes, Re	ed to persona resistant face s act espirator with A	al protection, hy shield, goggles, o PF of 10 (Effection	or safe	ety gla ss: 90	sses with s%)	Iluation side shields when ination with specifi
. Exposure e	g. (Effectiveness:		its source				
Environment Contributing	Exposure	Specific	Compartment	Value	a tuno	Level of	Risk
Scenario	Assessment Method	conditions	Compariment	value	e type	Exposure	characterization ratio (PEC/PNEC):
ERC6a	EUSES		Freshwater sediment			0,307 mg/kg dry weight (d.w.)	
			Marine sediment			0,124 mg/kg dry weight (d.w.)	
			Sewage treatment plant			0,031 mg/L	< 0,01
ERC6a: Indus Norkers/Cons Contributing Scenario	Exposure Assessment	g in manufactu Specific conditions	re of another sub	ostanc		e of interme	Risk characterization ratio (PEC/PNEC):
PROC1	Method ECETOC TRA Modified		Worker – inhala long-term – syste		0,00	06 mg/m3	0,012
	mounou		Worker – dermal, term – system	long-	0,03	4 mg/kg/d	0,02
			Worker – long-te systemic Combi	erm –			0,032

systemic Combined routes Worker – inhalation,

0,006 mg/m3

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	Modified	long-term – systemic	I	
		Worker – dermal, long- term – systemic	0,274 mg/kg	0,161
		Worker – long-term – systemic Combined routes		0,173
PROC3	ECETOC TRA Modified	Worker – inhalation, long-term – systemic	0,018 mg/m3	0,035
		Worker – dermal, long- term – systemic	0,138 mg/kg/d	0,081
		Worker – long-term – systemic Combined routes		0,117
PROC4	ECETOC TRA Modified	Worker – inhalation, long-term – systemic	0,03 mg/m3	0,059
		Worker – dermal, long- term – systemic	0,686 mg/kg/d	0,404
		Worker – long-term – systemic Combined routes		0,463
PROC8a	ECETOC TRA Modified	Worker – inhalation, long-term – systemic	0,059 mg/m3	0,118
		Worker – dermal, long- term – systemic	0,686 mg/kg/d	0,403
		Worker – long-term – systemic Combined routes		0,521
PROC8b	ECETOC TRA Modified	Worker – inhalation, long-term – systemic	0,015 mg/m3	0,03
		Worker – dermal, long- term – systemic	0,686 mg/kg/d	0,403
		Worker – long-term – systemic Combined routes		0,433
PROC9	ECETOC TRA Modified	Worker – inhalation, long-term – systemic	0,03 mg/m3	0,059
		Worker – dermal, long- term – systemic	0,686 mg/kg/d	0,404
		Worker – long-term – systemic Combined routes		0,463
PROC15	ECETOC TRA Modified	Worker – inhalation, long-term – systemic	0,03 mg/m3	0,059
		Worker – dermal, long- term – systemic	0,068 mg/kg/d	0,04
		Worker – long-term – systemic Combined routes		0,099

PROC1: Use in closed process, no likelihood of exposure

PROC2: Use in closed, continuous process with occasional controlled exposure

PROC3: Use in closed batch process (synthesis or formulation)

PROC4: Use in batch and other process (synthesis) where opportunity for exposure arises

PROC8a: Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at non-dedicated facilities

PROC8b: Transfer of substance or preparation (charging/ discharging) from/ to vessels/ large containers at dedicated facilities

PROC9: Transfer of substance or preparation into small containers (dedicated filling line, including weighing)

PROC15: Use as laboratory reagent

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by the Exposure Scenario	er to evaluate whether he works inside the boundaries se
Not applicable	
1. Short title of Exposure Scenario: U	lse in mining – industrial
Main User Groups	: SU 3: Industrial uses: Uses of substances as such or in
	preparations at industrial sites
Sector of use	: SU2a: Mining, (without offshore industries)
Process category	: PROC1: Use in closed process, no likelihood of exposure PROC2: Use in closed, continuous process with occasional controlled exposure
	PROC3: Use in closed batch process (synthesis or formulation)
	PROC4: Use in batch and other process (synthesis) where opportunity for exposure arises
	PROC8a: Transfer of substance or preparation
	(charging/discharging) from/to vessels/large containers at non-dedicated facilities
	PROC8b: Transfer of substance or preparation (charging/ discharging) from/ to vessels/ large containers at dedicated
	facilities PROC9: Transfer of substance or preparation into small
	containers (dedicated filling line, including weighing)
Environmental release category	: ERC4: Industrial use of processing aids in processes and products, not becoming part of articles
Further information	:
	Used effectively as a secondary/scavenger collector for base metal sulfides.
2.1 Contributing scenario contr	olling environmental exposure for:ERC4: Industrial use o
	nd products, not becoming part of articles
	nd products, not becoming part of articles
Environment factors not influence Flow rate Other given operational conditions	nd products, not becoming part of articles d by risk management
Environment factors not influence Flow rate Other given operational conditions Local release to the environment	nd products, not becoming part of articles d by risk management : 18.000 m3/d s affecting environmental exposure
Environment factors not influence Flow rate Other given operational conditions Local release to the environment Emission or Release Factor: Air	nd products, not becoming part of articles d by risk management : 18.000 m3/d s affecting environmental exposure : 0 %
Environment factors not influence Flow rate Other given operational conditions Local release to the environment Emission or Release Factor: Air Emission or Release Factor: Wate	nd products, not becoming part of articles d by risk management : 18.000 m3/d s affecting environmental exposure : 0 % r : 0,1 %
Environment factors not influence Flow rate Other given operational conditions Local release to the environment Emission or Release Factor: Air Emission or Release Factor: Wate Emission or Release Factor: Soil	nd products, not becoming part of articles d by risk management : 18.000 m3/d s affecting environmental exposure : 0 % r : 0,1 % : 0,025 %
Environment factors not influence Flow rate Other given operational conditions Local release to the environment Emission or Release Factor: Air Emission or Release Factor: Wate Emission or Release Factor: Soil	nd products, not becoming part of articles d by risk management : 18.000 m3/d s affecting environmental exposure : 0 % r : 0,1 % : 0,025 % : 0 kg/day
Environment factors not influence Flow rate Other given operational conditions Local release to the environment Emission or Release Factor: Air Emission or Release Factor: Wate Emission or Release Factor: Soil Local release rate: Air Local release rate: Water	nd products, not becoming part of articles d by risk management : 18.000 m3/d s affecting environmental exposure : 0 % r : 0,1 % : 0,025 % : 0 kg/day : 1 kg/day
Environment factors not influence Flow rate Other given operational conditions Local release to the environment Emission or Release Factor: Air Emission or Release Factor: Wate Emission or Release Factor: Soil Local release rate: Air Local release rate: Water Technical conditions and measure Remarks	nd products, not becoming part of articles d by risk management : 18.000 m3/d s affecting environmental exposure : 0 % r : 0,1 % : 0,025 % : 0 kg/day : 1 kg/day s / Organizational measures : Not applicable to municipal sewage treatment plant
Environment factors not influence Flow rate Other given operational conditions Local release to the environment Emission or Release Factor: Air Emission or Release Factor: Wate Emission or Release Factor: Soil Local release rate: Air Local release rate: Water Technical conditions and measure Remarks Conditions and measures related to Type of Sewage Treatment Plant	nd products, not becoming part of articles d by risk management : 18.000 m3/d s affecting environmental exposure : 0 % r : 0,1 % : 0,025 % : 0 kg/day : 1 kg/day s / Organizational measures : Not applicable to municipal sewage treatment plant : Municipal sewage treatment plant
Environment factors not influence Flow rate Other given operational conditions Local release to the environment Emission or Release Factor: Air Emission or Release Factor: Wate Emission or Release Factor: Soil Local release rate: Air Local release rate: Water Technical conditions and measure Remarks Conditions and measures related to Type of Sewage Treatment Plant Flow rate of sewage treatment	nd products, not becoming part of articles d by risk management : 18.000 m3/d s affecting environmental exposure : 0 % r : 0,1 % : 0,025 % : 0 kg/day : 1 kg/day s / Organizational measures : Not applicable to municipal sewage treatment plant
Environment factors not influence Flow rate Other given operational conditions Local release to the environment Emission or Release Factor: Air Emission or Release Factor: Wate Emission or Release Factor: Soil Local release rate: Air Local release rate: Water Technical conditions and measure Remarks Conditions and measures related to Type of Sewage Treatment Plant	nd products, not becoming part of articles d by risk management : 18.000 m3/d s affecting environmental exposure : 0 % r : 0,1 % : 0,025 % : 0 kg/day : 1 kg/day s / Organizational measures : Not applicable to municipal sewage treatment plant : Municipal sewage treatment plant

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Effectiveness (of a measure)	
2.2 Contributing scenario contriputing scenario contributing scenario co	rolling worker exposure for: PROC1: Use in closed sure
Product characteristics Physical Form (at time of use) Process Temperature	: Liquid substance : <= 40 °C
Frequency and duration of use Exposure duration	: <4 h
Human factors not influenced by r Exposed skin area	risk management : One hand face only (240 cm2)
Other operational conditions affect Outdoor / Indoor	ting workers exposure : Indoor
Remarks	: Good general ventilation (3-5 air changes per hour)
Technical conditions and measure Use product only in closed system. Local exhaust ventilation- inhalation	
Conditions and measures related Respiratory Protection, No (Effective Dermal Protection, No (Effectivene	
Respiratory Protection, No (Effectiv Dermal Protection, No (Effectivene 2.2 Contributing scenario contri	veness: 0 %) ss: 0 %) rolling worker exposure for: PROC2: Use in closed,
Respiratory Protection, No (Effectiv Dermal Protection, No (Effectivene	veness: 0 %) ss: 0 %) rolling worker exposure for: PROC2: Use in closed,
Respiratory Protection, No (Effective Dermal Protection, No (Effectivene 2.2 Contributing scenario contricontinuous process with occas Product characteristics Physical Form (at time of use) Process Temperature	veness: 0 %) ss: 0 %) rolling worker exposure for: PROC2: Use in closed, sional controlled exposure : Liquid substance
Respiratory Protection, No (Effective Dermal Protection, No (Effectivene 2.2 Contributing scenario contricontinuous process with occas Product characteristics Physical Form (at time of use) Process Temperature Frequency and duration of use	<pre>veness: 0 %) vss: 0 %) rolling worker exposure for: PROC2: Use in closed, sional controlled exposure : Liquid substance : <= 40 °C : < 4 h</pre>
Respiratory Protection, No (Effective Dermal Protection, No (Effectivene 2.2 Contributing scenario contri- continuous process with occas Product characteristics Physical Form (at time of use) Process Temperature Frequency and duration of use Exposure duration Human factors not influenced by re Exposed skin area	<pre>veness: 0 %) vss: 0 %) rolling worker exposure for: PROC2: Use in closed, sional controlled exposure : Liquid substance : <= 40 °C : < 4 h risk management : Palms of both hands (480 cm2)</pre>
Respiratory Protection, No (Effective Dermal Protection, No (Effectivene 2.2 Contributing scenario contri- continuous process with occas Product characteristics Physical Form (at time of use) Process Temperature Frequency and duration of use Exposure duration Human factors not influenced by r Exposed skin area Other operational conditions affect Outdoor / Indoor Remarks	<pre>veness: 0 %) ss: 0 %) rolling worker exposure for: PROC2: Use in closed, sional controlled exposure : Liquid substance : <= 40 °C : < 4 h risk management : Palms of both hands (480 cm2) cting workers exposure : Indoor : Good general ventilation (3-5 air changes per hour) es ccasional controlled exposure</pre>
Respiratory Protection, No (Effective Dermal Protection, No (Effectivene 2.2 Contributing scenario contri- continuous process with occas Product characteristics Physical Form (at time of use) Process Temperature Frequency and duration of use Exposure duration Human factors not influenced by r Exposed skin area Other operational conditions affect Outdoor / Indoor Remarks Technical conditions and measure Closed continuous process with oc Local exhaust ventilation- inhalation	<pre>veness: 0 %) ss: 0 %) rolling worker exposure for: PROC2: Use in closed, sional controlled exposure : Liquid substance : <= 40 °C : < 4 h risk management : Palms of both hands (480 cm2) cting workers exposure : Indoor : Good general ventilation (3-5 air changes per hour) es ccasional controlled exposure</pre>
Respiratory Protection, No (Effective Dermal Protection, No (Effectivene 2.2 Contributing scenario contri- continuous process with occas Product characteristics Physical Form (at time of use) Process Temperature Frequency and duration of use Exposure duration Human factors not influenced by r Exposed skin area Other operational conditions affect Outdoor / Indoor Remarks Technical conditions and measure Closed continuous process with oc Local exhaust ventilation- inhalation	<pre>veness: 0 %) ss: 0 %) rolling worker exposure for: PROC2: Use in closed, sional controlled exposure Liquid substance</pre>

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	emically resistant gloves (tested to EN374) in combination with 'basic'
2.2 Contributing scenario con process (synthesis or formula	trolling worker exposure for: PROC3: Use in closed batch ation)
Product characteristics	
Physical Form (at time of use) Process Temperature	: Liquid substance : <= 40 °C
Frequency and duration of use Exposure duration	: <1h
Human factors not influenced by	risk management
Exposed skin area	: One hand face only (240 cm2)
Other operational conditions affe	
Outdoor / Indoor Remarks	: Indoor : Good general ventilation (3-5 air changes per hour)
Technical conditions and measur Closed batch process with occasic Local exhaust ventilation- inhalatio	onal controlled exposure.
Conditions and measures related	
Eye Protection, Yes, chemically res there is potential for direct contact Respiratory Protection, No (Effect	tiveness: 0 %)
Eye Protection, Yes, chemically res there is potential for direct contact Respiratory Protection, No (Effect	sistant face shield, goggles, or safety glasses with side shields when t tiveness: 0 %) emically resistant gloves (tested to EN374) in combination with 'basic'
Eye Protection, Yes, chemically rest there is potential for direct contact Respiratory Protection, No (Effect Dermal Protection, Yes, Wear che employee training. (Effectiveness: 2.2 Contributing scenario cont	sistant face shield, goggles, or safety glasses with side shields when t tiveness: 0 %) emically resistant gloves (tested to EN374) in combination with 'basic'
Eye Protection, Yes, chemically rest there is potential for direct contact Respiratory Protection, No (Effect Dermal Protection, Yes, Wear che employee training. (Effectiveness: 2.2 Contributing scenario cont	sistant face shield, goggles, or safety glasses with side shields when t tiveness: 0 %) emically resistant gloves (tested to EN374) in combination with 'basic' : 80 %) trolling worker exposure for: PROC4: Use in batch and
Eye Protection, Yes, chemically rest there is potential for direct contact Respiratory Protection, No (Effect Dermal Protection, Yes, Wear che employee training. (Effectiveness: 2.2 Contributing scenario com other process (synthesis) whe	sistant face shield, goggles, or safety glasses with side shields when t tiveness: 0 %) emically resistant gloves (tested to EN374) in combination with 'basic' : 80 %) trolling worker exposure for: PROC4: Use in batch and ere opportunity for exposure arises
Eye Protection, Yes, chemically rest there is potential for direct contact Respiratory Protection, No (Effect Dermal Protection, Yes, Wear che employee training. (Effectiveness: 2.2 Contributing scenario cont other process (synthesis) whe Product characteristics Physical Form (at time of use)	 sistant face shield, goggles, or safety glasses with side shields when t tiveness: 0 %) emically resistant gloves (tested to EN374) in combination with 'basic' : 80 %) trolling worker exposure for: PROC4: Use in batch and ere opportunity for exposure arises : Liquid substance
Eye Protection, Yes, chemically rest there is potential for direct contact Respiratory Protection, No (Effect Dermal Protection, Yes, Wear che employee training. (Effectiveness: 2.2 Contributing scenario cont other process (synthesis) whe Product characteristics Physical Form (at time of use) Process Temperature Frequency and duration of use	<pre>sistant face shield, goggles, or safety glasses with side shields when t tiveness: 0 %) emically resistant gloves (tested to EN374) in combination with 'basic' : 80 %) trolling worker exposure for: PROC4: Use in batch and ere opportunity for exposure arises : Liquid substance : <= 40 °C : <1 h</pre>
Eye Protection, Yes, chemically rest there is potential for direct contact Respiratory Protection, No (Effect Dermal Protection, Yes, Wear che employee training. (Effectiveness: 2.2 Contributing scenario cont other process (synthesis) whe Product characteristics Physical Form (at time of use) Process Temperature Frequency and duration of use Exposure duration Human factors not influenced by Exposed skin area	sistant face shield, goggles, or safety glasses with side shields when tiveness: 0 %) emically resistant gloves (tested to EN374) in combination with 'basic' : 80 %) trolling worker exposure for: PROC4: Use in batch and ere opportunity for exposure arises : Liquid substance : <= 40 °C : <1 h risk management : Palms of both hands (480 cm2)
Eye Protection, Yes, chemically rest there is potential for direct contact Respiratory Protection, No (Effect Dermal Protection, Yes, Wear che employee training. (Effectiveness: 2.2 Contributing scenario cont other process (synthesis) whe Product characteristics Physical Form (at time of use) Process Temperature Frequency and duration of use Exposure duration Human factors not influenced by Exposed skin area	sistant face shield, goggles, or safety glasses with side shields when tiveness: 0 %) emically resistant gloves (tested to EN374) in combination with 'basic' : 80 %) trolling worker exposure for: PROC4: Use in batch and ere opportunity for exposure arises : Liquid substance : <= 40 °C : <1 h risk management : Palms of both hands (480 cm2)
Eye Protection, Yes, chemically rest there is potential for direct contact Respiratory Protection, No (Effect Dermal Protection, Yes, Wear che employee training. (Effectiveness: 2.2 Contributing scenario cont other process (synthesis) whe Product characteristics Physical Form (at time of use) Process Temperature Frequency and duration of use Exposure duration Human factors not influenced by Exposed skin area Other operational conditions affe Outdoor / Indoor	sistant face shield, goggles, or safety glasses with side shields when t tiveness: 0 %) emically resistant gloves (tested to EN374) in combination with 'basic' : 80 %) trolling worker exposure for: PROC4: Use in batch and ere opportunity for exposure arises : Liquid substance : <= 40 °C : <1 h risk management : Palms of both hands (480 cm2) ecting workers exposure : Indoor : Enhanced general ventilation (5-10 air changes per hour) res onal controlled exposure
Eye Protection, Yes, chemically rest there is potential for direct contact Respiratory Protection, No (Effect Dermal Protection, Yes, Wear che employee training. (Effectiveness: 2.2 Contributing scenario com- other process (synthesis) whe Product characteristics Physical Form (at time of use) Process Temperature Frequency and duration of use Exposure duration Human factors not influenced by Exposed skin area Other operational conditions affer Outdoor / Indoor Remarks Technical conditions and measur Semi-closed process with occasio Local exhaust ventilation- inhalatio	sistant face shield, goggles, or safety glasses with side shields when t tiveness: 0 %) emically resistant gloves (tested to EN374) in combination with 'basic' : 80 %) trolling worker exposure for: PROC4: Use in batch and ere opportunity for exposure arises : Liquid substance : <= 40 °C : <1 h risk management : Palms of both hands (480 cm2) ecting workers exposure : Indoor : Enhanced general ventilation (5-10 air changes per hour) res onal controlled exposure

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there is potential for direct contact Respiratory Protection, No (Effectiv	stant face shield, goggles, or safety glasses with side shields when veness: 0 %) nically resistant gloves (tested to EN374) in combination with 'basic'
employee training. (Effectiveness: 8	80 %)
	rolling worker exposure for: PROC8a: Transfer of ging/discharging) from/to vessels/large containers at
Product characteristics	
Physical Form (at time of use) Process Temperature	: Liquid substance : <= 40 °C
Frequency and duration of use Exposure duration	: < 15 min
Human factors not influenced by r Exposed skin area	isk management : Two hands (960 cm2)
Other operational conditions affect	
Outdoor / Indoor Remarks	: Indoor : Enhanced general ventilation (5-10 air changes per hour)
Technical conditions and measure	25
Local exhaust ventilation- inhalation	n:, No (Effectiveness: 0 %)
	to personal protection, hygiene and health evaluation stant face shield, goggles, or safety glasses with side shields when
Respiratory Protection, No (Effectiv Dermal Protection, Yes, Wear cher employee training. (Effectiveness: 8	nically resistant gloves (tested to EN374) in combination with 'basic'
	rolling worker exposure for: PROC8b: Transfer of ging/ discharging) from/ to vessels/ large containers at
Product characteristics	
Physical Form (at time of use) Process Temperature	: Liquid substance : <= 40 °C
Frequency and duration of use Exposure duration	: <1h
Human factors not influenced by r Exposed skin area	isk management : Two hands (960 cm2)
Other operational conditions affec Outdoor / Indoor Remarks	ting workers exposure : Indoor : Enhanced general ventilation (5-10 air changes per hour)
SDS Number:100000102762	49/52

SAFETY DATA SHEET

Orfom® C	O210 Collec	tor			SAFE	TY DATA SHEET
Version 1.0					Revision	Date 2023-01-12
Semi-closed p	ditions and mea process with occa t ventilation- inhal	sional controlle				
Eye Protection	d measures rela n,Yes,chemically tial for direct cont	resistant face s				
Dermal Protect	rotection, No (Eff ction, Yes, Wear ning. (Effectivene	chemically resis		ted to EN37	'4) in combina	ation with 'basic'
	ing scenario co preparation in					
Product chara Physical Forr Process Tem	m (at time of use)	: Liquio : <= 4(
Frequency and Exposure du	d duration of use ration	e) ∶<1h				
Human factors Exposed skir	not influenced narea		ement s of both hands	(480 cm2)		
Other operatio Outdoor / Inc Remarks	nal conditions a loor	: Indoc	-	ntilation (5-	10 air change	es per hour)
Semi-closed p	ditions and mea process with occa t ventilation- inhal	sional controlle				
Eye Protection	d measures rela n,Yes,chemically tial for direct cont	resistant face s				
Dermal Protect	rotection, No (Eff ction, Yes, Wear ning. (Effectivene	chemically resis		ted to EN37	(4) in combina	ation with 'basic'
3. Exposure o	estimation and	reference to	its source			
Environment						
Contributing Scenario	Exposure Assessment Method	Specific conditions	Compartment	Value type	Level of Exposure	Risk characterization ratio (PEC/PNEC):
ERC6a	EUSES		Freshwater sediment		0,83 mg/kg dry weight (d.w.)	0,277

Γ

 Sediment
 dry weight (d.w.)

 Marine sediment
 0,083 mg/kg dry weight (d.w.)
 0,277 dry weight (d.w.)

 Sbs Number:100000102762
 Sewage
 0,021 mg/L
 < 0,01</td>

Orfom® C	O210 Collect	or			
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			treatment plant		
ERC6a: Indu	istrial use resulting	in manufactur	e of another substan	ce (use of interm	ediates)
Workers/Cons	umers				
Contributing Scenario	Exposure Assessment Method	Specific conditions	Value type	Level of Exposure	Risk characterization ratio (PEC/PNEC):
PROC1	ECETOC TRA Modified		Worker – inhalation, long-term – systemic	0,004 mg/m3	< 0,01
			Worker – dermal, long- term – systemic	0,003 mg/kg/d	< 0,01
			Worker – long-term – systemic Combined routes		< 0,01
PROC2	ECETOC TRA Modified		Worker – inhalation, long-term – systemic	0,354 mg/m3	0,708
			Worker – dermal, long- term – systemic	0,027 mg/kg/d	0,016
			Worker – long-term – systemic Combined routes		0,724
PROC3	ECETOC TRA Modified		Worker – inhalation, long-term – systemic	0,354 mg/m3	0,708
			Worker – dermal, long- term – systemic	0,014 mg/kg/d	< 0,01
			Worker – long-term – systemic Combined routes		0,716
PROC4 E	ECETOC TRA Modified		Worker – inhalation, long-term – systemic	0,253 mg/m3	0,506
	Modified		Worker – dermal, long- term – systemic	0,137 mg/kg/d	0,081
			Worker – long-term – systemic Combined routes		0,587
PROC8a	ECETOC TRA Modified		Worker – inhalation, long-term – systemic	0,235 mg/m3	0,506
			Worker – dermal, long- term – systemic	0,274 mg/kg/d	0,161
			Worker – long-term – systemic Combined routes		0,667
PROC8b	ECETOC TRA Modified		Worker – inhalation, long-term – systemic	0,253 mg/m3	0,506
			Worker – dermal, long- term – systemic	0,274 mg/kg/d	0,161
			Worker – long-term – systemic Combined routes		0,667
PROC9	ECETOC TRA Modified		Worker – inhalation, long-term – systemic	0,253 mg/m3	0,506
			Worker – dermal, long- term – systemic	0,137 mg/kg/d	0,081
			Worker – long-term – systemic Combined routes		0,587
PROC1: Use	in closed process	, no likelihood		I	I
PROC2: Use	in closed, continu	ous process w	ith occasional contro	lled exposure	
PROC3: Use	in closed batch pr	ocess (synthe	sis or formulation)		
PROC4: Use	in batch and othe	r process (syn	thesis) where opportu	unity for exposure	e arises
PROC8a: Tra at non-dedica		e or preparatio	n (charging/discharg	ing) from/to vesse	els/large containers
SDS Number:1	00000102762		51/5	52	
			517		

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PROC8b: Transfer of substance or preparation (charging/ discharging) from/ to vessels/ large containers at dedicated facilities

PROC9: Transfer of substance or preparation into small containers (dedicated filling line, including weighing)

4. Guidance to Downstream User to evaluate whether he works inside the boundaries set by the Exposure Scenario

Not applicable