

Methyl acrylate

Safety Data Sheet

according to Regulation (EC) No. 1907/2006 (REACH) with its amendment Regulation (EU) 2015/830
Revision date: 5 Feb 2021 Version: 3.1

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

1.1. Product identifier

Product form	: Substance
Trade name	: Methyl acrylate
Chemical name	: methyl acrylate; methyl propenoate
IUPAC name	: methyl acrylate
EC Index-No.	: 607-034-00-0
EC-No.	: 202-500-6
CAS-No.	: 96-33-3
REACH registration No	: 01-2119459302-44-0011
Type of product	: Stabilized product
Formula	: C4H6O2
Synonyms	: 2-propenoic acid methyl ester / 2-Propenoic acid, methyl ester / acrylic acid methyl ester / acrylomethylic ester, monomer / methoxycarbonylethylene / methyl acrylate / methyl acrylic / methyl acrylic ester / methyl prop-2-enoate / methyl propenoate / methyl-2-propenoate / methylpropenoate / propenoic acid methyl ester
Product group	: Raw material
BIG No	: 14335

1.2. Relevant identified uses of the substance or mixture and uses advised against

1.2.1. Relevant identified uses

Main use category	: Industrial use
Industrial/Professional use spec	: Industrial For professional use only
Use of the substance/mixture	: Monomer
Function or use category	: Intermediates, Laboratory chemicals

Title	Life cycle stage	Use descriptors
Polymer production, industrial; Production sites (ES Ref.: IW-1)	Industrial, Manufacture	SU8, SU9, SU12, PC32, PROC1, PROC2, PROC3, PROC4, PROC8a, PROC8b, PROC9, PROC28, ERC6c
Use as intermediate, industrial; Production Sites (ES Ref.: IW-2)	Industrial, Manufacture	SU8, SU9, PROC1, PROC2, PROC3, PROC4, PROC8a, PROC8b, PROC9, PROC15, PROC28, ERC6a
Polymer production, industrial; Downstream user sites (ES Ref.: IW-3)	Industrial, Manufacture	SU8, SU9, SU12, PC32, PROC1, PROC2, PROC3, PROC4, PROC8a, PROC8b, PROC9, PROC28, ERC6c, ERC6d
Use as intermediate, industrial; Downstream user sites (ES Ref.: IW-4)	Industrial, Manufacture	SU8, SU9, PROC1, PROC2, PROC3, PROC4, PROC8a, PROC8b, PROC15, PROC28, ERC6a

Full text of use descriptors: see section 16

1.2.2. Uses advised against

No additional information available

NOR1.3. Details of the supplier of product safety information sheet

Manufacturer

SIBUR-NEFTEKHIM JSC
Eastern Industrial Zone 390
Dzerzhinsk - Russian Federation
T +7 8313 27-59-09 - F +7 8313 27-59-09
infosnh@snh.sibur.ru

Only Representative

Gazprom Marketing and Trading France
avenue des Champs-Élysées 68
75008 Paris - France
T +33 1 42 99 73 50 - F +33 1 42 99 73 99
didier.lebout@gazprom-mt.com

1.4. Emergency telephone number

Emergency number : +7 8313 27-59-09 (round the clock)

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Country	Official advisory body	Address	Emergency number	Comment
Belgium	Centre Anti-Poisons/Antigifcentrum c/o Hôpital Central de la Base - Reine Astrid	Rue Bruyn 1 1120 Bruxelles/Brussel	+32 70 245 245	Please dial: 070 245 245 for any urgent questions about intoxication (free of charge 24/7), if not accessible, dial: 02 264 96 30 (standard fee)
Malta	Medicines & Poisons Info Office	Mater Dei Hospital MSD Msida	+356 2545 6504	
Norway	Giftinformasjonen Helsedirektoratet	P.O. Box 7000 St. Olavs Plass 130 Oslo	+47 22 591300	
Switzerland	Tox Info Suisse	Freiestrasse 16 8032 Zürich	145	(from abroad: +41 44 251 51 51) non urgent inquiry: +41 44 251 66 66
United Kingdom	National Poisons Information Service (Birmingham Centre) City Hospital	Dudley Road B18 7QH Birmingham	0344 892 0111	
United Kingdom	National Poisons Information Service (Cardiff Centre) Gwenwyn Ward, Llandough Hospital	Penarth CF64 2XX Cardiff	0344 892 0111	
United Kingdom	National Poisons Information Service Edinburgh Royal Infirmary of Edinburgh	Little France Crescent EH16 4SA Edinburgh	0344 892 0111	
United Kingdom	Guy's & St Thomas' Poisons Unit Medical Toxicology Unit, Guy's & St Thomas' Hospital Trust	Avonley Road SE14 5ER London	+44 20 7188 7188	
United Kingdom	National Poisons Information Service (Newcastle Centre) Regional Drugs and Therapeutics Centre, Wolfson Unit	Claremont Place Newcastle-upon-Tyne NE1 4LP Newcastle	0344 892 0111	
United Kingdom	National Poisons Information Service (Belfast Centre) Royal Victoria Hospital	Grosvenor Road BT12 6BA Belfast	0344 892 0111	

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

Classification according to Regulation (EC) No. 1272/2008 [CLP] Mixtures/Substances: SDS EU > 2015: According to Regulation (EU) 2015/830, 2020/878 (REACH Annex II)

Flammable liquids, Category 2	H225
Acute toxicity (inhal.), Category 3	H331
Skin sensitisation, Category 1	H317
Acute toxicity (dermal), Category 4	H312
Acute toxicity (oral), Category 4	H302
Skin corrosion/irritation, Category 2	H315
Serious eye damage/eye irritation, Category 2	H319
Specific target organ toxicity — Single exposure, Category 3, Respiratory tract irritation	H335
Hazardous to the aquatic environment — Chronic Hazard, Category 3	H412
Full text of H statements : see section 16	

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Adverse physicochemical, human health and environmental effects

Highly flammable liquid and vapour. Toxic if inhaled. Harmful in contact with skin. Harmful if swallowed. May cause respiratory irritation. Causes skin irritation. May cause an allergic skin reaction. Causes serious eye irritation. Harmful to aquatic life with long lasting effects.

2.2. Label elements

Labelling according to Regulation (EC) No. 1272/2008 [CLP]

Hazard pictograms (CLP)



GHS02

GHS06

Signal word (CLP)

: Danger

Hazard statements (CLP)

: H225 - Highly flammable liquid and vapour.
H302+H312 - Harmful if swallowed or in contact with skin.
H315 - Causes skin irritation.
H317 - May cause an allergic skin reaction.
H319 - Causes serious eye irritation.
H331 - Toxic if inhaled.
H335 - May cause respiratory irritation.
H412 - Harmful to aquatic life with long lasting effects.

Precautionary statements (CLP)

: P210 - Keep away from heat, hot surfaces, sparks, open flames and other ignition sources.
No smoking.
P233 - Keep container tightly closed.
P261 - Avoid breathing dust/fume/gas/mist/vapours/spray.
P280 - Wear protective gloves/protective clothing/eye protection/face protection/hearing protection.
P370+P378 - In case of fire: Use media other than water to extinguish.
P403+P233 - Store in a well-ventilated place. Keep container tightly closed.
P308+P313 - IF exposed or concerned: Get medical advice/attention.

2.3. Other hazards

This substance/mixture does not meet the PBT criteria of REACH regulation, annex XIII

This substance/mixture does not meet the vPvB criteria of REACH regulation, annex XIII

SECTION 3: Composition/information on ingredients

3.1. Substances

Substance type : Mono-constituent

Name	Product identifier	%	Classification according to Regulation (EC) No. 1272/2008 [CLP]
Methyl acrylate (Note D)	(CAS-No.) 96-33-3 (EC-No.) 202-500-6 (EC Index-No.) 607-034-00-0 (REACH-no) 01-2119459302-44-0011	> 99.7	Flam. Liq. 2, H225 Acute Tox. 3 (Inhalation), H331 Skin Sens. 1, H317 Acute Tox. 4 (Dermal), H312 Acute Tox. 4 (Oral), H302 Skin Irrit. 2, H315 Eye Irrit. 2, H319 STOT SE 3, H335 Aquatic Chronic 3, H412
mequinol; 4-methoxyphenol; hydroquinone monomethyl ether (Stabilizer)	(CAS-No.) 150-76-5 (EC-No.) 205-769-8 (EC Index-No.) 604-044-00-7	0.001 – 0.002	Acute Tox. 4 (Oral), H302 Eye Irrit. 2, H319 Skin Sens. 1, H317

Full text of H-statements: see section 16

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Note D : Certain substances which are susceptible to spontaneous polymerisation or decomposition are generally placed on the market in a stabilised form. It is in this form that they are listed in Part 3. However, such substances are sometimes placed on the market in a non-stabilised form. In this case, the supplier must state on the label the name of the substance followed by the words 'non-stabilised'.

3.2. Mixtures

Not applicable

SECTION 4: First aid measures

4.1. Description of first aid measures

First-aid measures general	: Check the vital functions. Unconscious: maintain adequate airway and respiration. Respiratory arrest: artificial respiration or oxygen. Cardiac arrest: perform resuscitation. Victim conscious with laboured breathing: half-seated. Victim in shock: on his back with legs slightly raised. Vomiting: prevent asphyxia/aspiration pneumonia. Prevent cooling by covering the victim (no warming up). Keep watching the victim. Give psychological aid. Keep the victim calm, avoid physical strain. Depending on the victim's condition: doctor/hospital.
First-aid measures after inhalation	: Remove the victim into fresh air. Doctor: administration of corticoid spray. Immediately consult a doctor/medical service.
First-aid measures after skin contact	: Wash immediately with lots of water. Do not apply (chemical) neutralizing agents without medical advice. Soap may be used. Take victim to a doctor if irritation persists.
First-aid measures after eye contact	: Rinse immediately with plenty of water. Remove contact lenses, if present and easy to do. Continue rinsing. Do not apply (chemical) neutralizing agents without medical advice.
First-aid measures after ingestion	: Rinse mouth with water. Immediately after ingestion: give lots of water to drink. Do not induce vomiting. Do not apply (chemical) neutralizing agents without medical advice. Call Poison Information Centre (www.big.be/antigif.html). Consult a doctor/medical service if you feel unwell. Ingestion of large quantities: immediately to hospital. Take the container/vomit to the doctor/hospital.

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

Symptoms/effects after inhalation	: Coughing. Irritation of the respiratory tract. Irritation of the nasal mucous membranes. EXPOSURE TO HIGH CONCENTRATIONS: Nausea. Headache. Dizziness. Feeling of weakness. Disturbances of consciousness. Respiratory difficulties. Cramps/uncontrolled muscular contractions.
Symptoms/effects after skin contact	: Tingling/irritation of the skin. ON CONTINUOUS EXPOSURE/CONTACT: Caustic burns/corrosion of the skin.
Symptoms/effects after eye contact	: Irritation of the eye tissue. Lacrimation. ON CONTINUOUS EXPOSURE/CONTACT: Corrosion of the eye tissue.
Symptoms/effects after ingestion	: Irritation of the oral mucous membranes. Irritation of the gastric/intestinal mucosa. Risk of aspiration pneumonia. Symptoms similar to those listed under inhalation.
Chronic symptoms	: Blisters. Skin rash/inflammation. Enlargement/affection of the liver. Affection of the renal tissue.

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

Treat symptomatically.

SECTION 5: Firefighting measures

5.1. Extinguishing media

Suitable extinguishing media	: Quick-acting ABC powder extinguisher. Quick-acting BC powder extinguisher. Quick-acting class B foam extinguisher. Quick-acting CO2 extinguisher. Class B foam (alcohol-resistant). Water spray if puddle cannot expand.
Unsuitable extinguishing media	: Water (quick-acting extinguisher, reel); risk of puddle expansion. Water; risk of puddle expansion.

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5.2. Special hazards arising from the substance or mixture

- Fire hazard : DIRECT FIRE HAZARD: Highly flammable liquid and vapour. Gas/vapour flammable with air within explosion limits. INDIRECT FIRE HAZARD: Substance contains stabilizer against polymerization. Heat destroys stabilizer against polymerization. May be ignited by sparks. Gas/vapour spreads at floor level: ignition hazard. Reactions involving a fire hazard: see "Reactivity Hazard".
- Explosion hazard : DIRECT EXPLOSION HAZARD: Gas/vapour explosive with air within explosion limits. INDIRECT EXPLOSION HAZARD: Heat may cause pressure rise in tanks/drums: explosion risk. may be ignited by sparks. Reactions with explosion hazards: see "Reactivity Hazard".
- Hazardous decomposition products in case of fire : Upon combustion: CO and CO₂ are formed.

5.3. Advice for firefighters

- Firefighting instructions : Cool tanks/drums with water spray/remove them into safety. Physical explosion risk: extinguish/cool from behind cover. Do not move the load if exposed to heat. After cooling: persistent risk of physical explosion. Take account of toxic fire-fighting water. Use water moderately and if possible collect or contain it.
- Protection during firefighting : Heat/fire exposure: self-contained breathing apparatus (EN 136 + EN 137).

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

- General measures : Remove ignition sources. Use special care to avoid static electric charges. No open flames. No smoking.

6.1.1. For non-emergency personnel

- Protective equipment : Gloves (EN 374). Protective goggles (EN 166). Head/neck protection. Protective clothing (EN 14605 or EN 13034). Large spills/in enclosed spaces: self-contained breathing apparatus (EN 136 + EN 137). Large spills/in enclosed spaces: gas-tight suit (EN 943).
- Emergency procedures : Keep upwind. Mark the danger area. Consider evacuation. Seal off low-lying areas. Close doors and windows of adjacent premises. Stop engines and no smoking. No naked flames or sparks. Spark- and explosionproof appliances and lighting equipment. Keep containers closed. Wash contaminated clothes.

6.1.2. For emergency responders

- Protective equipment : Do not attempt to take action without suitable protective equipment. Equip cleanup crew with proper protection. For further information refer to section 8: "Exposure controls/personal protection".
- Emergency procedures : Ventilate area.

6.2. Environmental precautions

Prevent soil and water pollution. Prevent spreading in sewers.

6.3. Methods and material for containment and cleaning up

- For containment : Contain released product, pump into suitable containers. Plug the leak, cut off the supply. Dam up the liquid spill. Try to reduce evaporation. Measure the concentration of the explosive gas-air mixture. Dilute combustible/toxic gases/vapours with water spray. Take account of toxic/corrosive precipitation water. Provide equipment/receptacles with earthing. Do not use compressed air for pumping over spills.
- Methods for cleaning up : Take up liquid spill into inert absorbent material, e.g.: dry sand/earth/vermiculite. Scoop absorbed substance into closing containers. Carefully collect the spill/leftovers. Damaged/cooled tanks must be emptied. Do not use compressed air for pumping over spills. Clean contaminated surfaces with an excess of water. Take collected spill to manufacturer/competent authority. Wash clothing and equipment after handling.
- Other information : Dispose of materials or solid residues at an authorized site.

6.4. Reference to other sections

See Heading 8. Exposure controls and personal protection. For further information refer to section 13.

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SECTION 7: Handling and storage

7.1. Precautions for safe handling

- Additional hazards when processed : Handle empty containers with care because residual vapours are flammable.
- Precautions for safe handling : Use spark-/explosionproof appliances and lighting system. Take precautions against electrostatic charges. Keep away from naked flames/heat. Keep away from ignition sources/sparks. Measure the concentration in the air regularly. Work under local exhaust/ventilation. Comply with the legal requirements. Remove contaminated clothing immediately. Clean contaminated clothing. Keep the substance free from contamination. Handle uncleaned empty containers as full ones. Thoroughly clean/dry the installation before use. Do not discharge the waste into the drain. Do not use compressed air for pumping over. Keep container tightly closed.
- Hygiene measures : Observe very strict hygiene - avoid contact.

7.2. Conditions for safe storage, including any incompatibilities

- Technical measures : Proper grounding procedures to avoid static electricity should be followed. Use explosion-proof electrical/ventilating/lighting equipment. Ground/bond container and receiving equipment.
- Storage conditions : Keep in fireproof place. Store in a well-ventilated place. Keep cool. Keep container tightly closed. Maintain inhibitor and dissolved oxygen level. Recommended inhibitor level is: 10 to 20 ppm. Recommended oxygen level is: 5 to 8 vol. %.
- Incompatible products : Strong bases. Mineral acids. Oxidizing materials. Alcohols. Peroxides. Aldehydes. Amines. Brass. Copper. Aluminium oxides.
- Maximum storage period : 183 days
- Storage temperature : < 30 °C
- Heat and ignition sources : KEEP SUBSTANCE AWAY FROM: heat sources. ignition sources.
- Information on mixed storage : KEEP SUBSTANCE AWAY FROM: oxidizing agents. (strong) acids. (strong) bases. peroxides.
- Storage area : Store in a cool area. Keep out of direct sunlight. Store in a dry area. Store in a dark area. Keep container in a well-ventilated place. Fireproof storeroom. Provide for a tub to collect spills. Provide the tank with earthing. Unauthorized persons are not admitted. Detached building. Store only in a stabilised state. Meet the legal requirements.
- Special rules on packaging : SPECIAL REQUIREMENTS: closing. nonhermetical. clean. opaque. correctly labelled. meet the legal requirements. Secure fragile packagings in solid containers.
- Packaging materials : SUITABLE MATERIAL: stainless steel. aluminium. HDPE. polypropylene. glass. tin. MATERIAL TO AVOID: copper.

7.3. Specific end use(s)

No additional information available

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

Methyl acrylate (96-33-3)

EU - Occupational Exposure Limits

Local name	Methylacrylate
IOELV TWA (mg/m ³)	18 mg/m ³
IOELV TWA (ppm)	5 ppm
IOELV STEL (mg/m ³)	36 mg/m ³
IOELV STEL (ppm)	10 ppm
Regulatory reference	COMMISSION DIRECTIVE 2009/161/EU

Germany - Occupational Exposure Limits (TRGS 900)

TRGS 900 Local name	Methylacrylat
Occupational exposure limit value (mg/m ³)	7.1 mg/m ³

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Methyl acrylate (96-33-3)

Occupational exposure limit value (ppm)	2 ppm
Peak exposure limitation factor	2(l)
TRGS 900 Remark	DFG;EU;H;Sh;Y
TRGS 900 Regulatory reference	TRGS900

Netherlands - Occupational Exposure Limits

Local name	Methylacrylaat
Grenswaarde TGG 8H (mg/m ³)	18 mg/m ³
Grenswaarde TGG 8H (ppm)	5.03 ppm
Grenswaarde TGG 15MIN (mg/m ³)	36 mg/m ³
Grenswaarde TGG 15MIN (ppm)	10.06 ppm
Regulatory reference	Arbeidsomstandighedenregeling 2020

United Kingdom - Occupational Exposure Limits

Local name	Methyl acrylate
WEL TWA (mg/m ³)	18 mg/m ³
WEL TWA (ppm)	5 ppm
WEL STEL (mg/m ³)	36 mg/m ³
WEL STEL (OEL STEL) [ppm]	10 ppm
Regulatory reference	EH40/2005 (Fourth edition, 2020). HSE

Methyl acrylate (96-33-3)

DNEL/DMEL (Workers)

Acute - local effects, dermal	0.49 mg/cm ²
Long-term - local effects, inhalation	18 mg/m ³

DNEL/DMEL (General population)

Acute - local effects, dermal	0.49 mg/cm ²
Long-term - local effects, inhalation	2.1 mg/m ³

PNEC (Water)

PNEC aqua (freshwater)	0.003 mg/l
PNEC aqua (marine water)	0 mg/l
PNEC aqua (intermittent, freshwater)	0.011 mg/l

PNEC (Sediment)

PNEC sediment (freshwater)	0.011 mg/kg dwt
PNEC sediment (marine water)	0.011 mg/kg dwt

PNEC (Soil)

PNEC soil	1 mg/kg dwt
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PNEC (Oral)

PNEC oral (secondary poisoning)	0.0011 g/kg food
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PNEC (STP)

PNEC sewage treatment plant	10 mg/l
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8.2. Exposure controls

Appropriate engineering controls:

Ensure good ventilation of the work station.

Personal protective equipment:

Avoid all unnecessary exposure.

Materials for protective clothing:

GIVE EXCELLENT RESISTANCE: butyl rubber. GIVE GOOD RESISTANCE: tetrafluoroethylene. PVA. GIVE POOR RESISTANCE: natural rubber. neoprene. nitrile rubber. PVC. viton

Hand protection:

Gloves

Eye protection:

Protective goggles (EN 166)

Skin and body protection:

Head/neck protection. Protective clothing (EN 14605 or EN 13034)

Respiratory protection:

Full face mask with filter type A. High vapour/gas concentration: self-contained breathing apparatus (EN 136 + EN 137)

Environmental exposure controls:

Avoid release to the environment.

Other information:

Do not eat, drink or smoke during use.

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Physical state	: Liquid
Appearance	: Volatile. Liquid.
Molecular mass	: 86.09 g/mol
Colour	: Colourless.
Odour	: Irritating/pungent odour. Sweet odour.
Odour threshold	: No data available
pH	: No data available
Relative evaporation rate (butylacetate=1)	: < 3.5
Melting point	: -76 °C (1013 hPa)
Freezing point	: No data available
Boiling point	: 80 °C (1013 hPa)
Flash point	: -3 °C (Closed cup, 1013 hPa)
Critical temperature	: 263 °C
Auto-ignition temperature	: 468 °C (1013 hPa, T1)
Decomposition temperature	: No data available
Flammability (solid, gas)	: Not applicable
Vapour pressure	: 90 hPa (20 °C)
Vapour pressure at 50 °C	: 342 hPa
Critical pressure	: 43559 hPa
Relative vapour density at 20 °C	: 2.97
Relative density	: 0.95 (20 °C)
Relative density of saturated gas/air mixture	: 1.17
Density	: 954 kg/m ³ (20 °C)

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Solubility	: Moderately soluble in water. Soluble in ethanol. Soluble in ether. Soluble in acetone. Water: 6 g/100ml (20 °C) Ethanol: > 10 g/100ml Ether: > 10 g/100ml Acetone: > 10 g/100ml
Partition coefficient n-octanol/water (Log Pow)	: 0.739 (Experimental value, OECD 107: Partition Coefficient (n-octanol/water): Shake Flask Method, 25 °C)
Viscosity, kinematic	: 0.495 mm ² /s
Viscosity, dynamic	: 0.472 mPa·s (25 °C)
Explosive properties	: No data available
Oxidising properties	: No data available
Explosive limits	: 2.4 – 18.6 vol % 100 – 895 g/m ³
Lower explosive limit (LEL)	: 2.4 vol %
Upper explosive limit (UEL)	: 18.6 vol %

9.2. Other information

Saturation concentration	: 323 g/m ³
VOC content	: 100 %
Other properties	: Gas/vapour heavier than air at 20°C. Clear. Volatile. Neutral reaction.
SAPT	: >50 °C at the inhibitor level not less than 15 ppm

SECTION 10: Stability and reactivity

10.1. Reactivity

Unstabilised product: polymerizes on exposure to light, on exposure to (some) acids/bases and with (strong) oxidizers with pressure build-up may cause closed container to burst. Prolonged storage: may polymerize. Violent polymerisation on exposure to temperature rise: pressure build-up may cause closed container to burst.

10.2. Chemical stability

Unstable on exposure to heat.

10.3. Possibility of hazardous reactions

Hazardous polymerisation:

10.4. Conditions to avoid

Direct sunlight. Extremely high or low temperatures. Open flame. Avoid contact with hot surfaces. Heat. No flames, no sparks. Eliminate all sources of ignition.

10.5. Incompatible materials

Strong acids. Strong bases. Oxidizing materials. amines, peroxides. alcohols. Aldehydes. Brass. copper.

10.6. Hazardous decomposition products

Carbon monoxide. Carbon dioxide. May release flammable gases.

SECTION 11: Toxicological information

11.1. Information on toxicological effects

Acute toxicity (oral)	: Harmful if swallowed.
Acute toxicity (dermal)	: Harmful in contact with skin.
Acute toxicity (inhalation)	: Toxic if inhaled.

mequinol; 4-methoxyphenol; hydroquinone monomethyl ether (150-76-5)

LD50 oral rat	1600 mg/kg Source: HSDB, ChemIDplus, NITE
LD50 dermal rat	> 2000 mg/kg bodyweight Animal: rat, Guideline: EU Method B.3 (Acute Toxicity (Dermal)), Guideline: other:OECD No 423 Acute Oral Toxicity – Acute Toxic Class Method

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Methyl acrylate (96-33-3)

LD50 oral rat	768 mg/kg bodyweight (Equivalent or similar to OECD 401, Rat, Male, Experimental value, Oral, 7 day(s))
LD50 dermal rabbit	1250 mg/kg bodyweight (24 h, Rabbit, Experimental value, Skin)
LC50 Inhalation - Rat	< 10.8 mg/l (OECD 403: Acute Inhalation Toxicity, 4 h, Rat, Male / female, Experimental value, Inhalation (vapours), 14 day(s))
LC50 Inhalation - Rat (Vapours)	4.75 mg/l Source: HSDB

Skin corrosion/irritation	: Causes skin irritation.
Serious eye damage/irritation	: Causes serious eye irritation.
Respiratory or skin sensitisation	: May cause an allergic skin reaction.
Germ cell mutagenicity	: Not classified
Additional information	: Based on available data, the classification criteria are not met
Carcinogenicity	: Not classified
Additional information	: Based on available data, the classification criteria are not met

Methyl acrylate (96-33-3)

IARC group	3 - Not classifiable
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Methyl acrylate (96-33-3)

IARC group	3 - Not classifiable
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Reproductive toxicity	: Not classified
Additional information	: Based on available data, the classification criteria are not met
STOT-single exposure	: May cause respiratory irritation.
STOT-repeated exposure	: Not classified
Additional information	: Based on available data, the classification criteria are not met

mequinol; 4-methoxyphenol; hydroquinone monomethyl ether (150-76-5)

LOAEL (oral, rat, 90 days)	300 mg/kg bodyweight Animal: rat, Guideline: OECD Guideline 422 (Combined Repeated Dose Toxicity Study with the Reproduction / Developmental Toxicity Screening Test), Guideline: other:EPA OPPTS 870.3650 (Combined Repeated Dose Toxicity Study with the Reproduction / Developmental Toxicity Screening Test)
NOAEL (oral, rat, 90 days)	150 mg/kg bodyweight Animal: rat, Guideline: OECD Guideline 422 (Combined Repeated Dose Toxicity Study with the Reproduction / Developmental Toxicity Screening Test), Guideline: other:EPA OPPTS 870.3650 (Combined Repeated Dose Toxicity Study with the Reproduction / Developmental Toxicity Screening Test)

Methyl acrylate (96-33-3)

LOAEL (oral, rat, 90 days)	20 mg/kg bodyweight Animal: rat, Guideline: OECD Guideline 408 (Repeated Dose 90-Day Oral Toxicity in Rodents)
LOAEC (inhalation, rat, vapour, 90 days)	0.44 mg/l air Animal: rat, Guideline: OECD Guideline 413 (Subchronic Inhalation Toxicity: 90-Day Study)
NOAEL (oral, rat, 90 days)	5 mg/kg bodyweight Animal: rat, Guideline: OECD Guideline 408 (Repeated Dose 90-Day Oral Toxicity in Rodents)
NOAEC (inhalation, rat, vapour, 90 days)	0.082 mg/l air Animal: rat, Guideline: OECD Guideline 413 (Subchronic Inhalation Toxicity: 90-Day Study)

Aspiration hazard	: Not classified
Additional information	: Based on available data, the classification criteria are not met

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Methyl acrylate (96-33-3)

Viscosity, kinematic	0.495 mm ² /s
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Potential adverse human health effects and symptoms : Odour tolerance may develop. Harmful if swallowed. Causes skin irritation. Harmful in contact with skin. Toxic if inhaled. May cause respiratory irritation. Causes serious eye irritation. Lachrymatory. Caution! Substance is absorbed through the skin.

SECTION 12: Ecological information

12.1. Toxicity

Ecology - general : Not classified as dangerous for the environment according to the criteria of Regulation (EC) No 1272/2008.

Ecology - air : Not included in the list of substances which may contribute to the greenhouse effect (IPCC). Not included in the list of fluorinated greenhouse gases (Regulation (EU) No 517/2014). Not classified as dangerous for the ozone layer (Regulation (EC) No 1005/2009).

Ecology - water : Toxic to crustacea. Harmful to crustacea with long lasting effects. Toxic to fishes. Fouling to shoreline. No inhibition of activated sludge. Toxic to algae. No significant hydrolysis.

Hazardous to the aquatic environment, short-term (acute) : Not classified

Hazardous to the aquatic environment, long-term (chronic) : Harmful to aquatic life with long lasting effects.

Not rapidly degradable

mequinol; 4-methoxyphenol; hydroquinone monomethyl ether (150-76-5)

LC50 fish 1	28.5 mg/l Test organisms (species): Oncorhynchus mykiss (previous name: Salmo gairdneri)
EC50 Daphnia 1	3 mg/l Test organisms (species): Daphnia magna
EC50 72h algae (1)	54.7 mg/l Test organisms (species): Pseudokirchneriella subcapitata (previous names: Raphidocelis subcapitata, Selenastrum capricornutum)
EC50 72h algae (2)	19 mg/l Test organisms (species): Pseudokirchneriella subcapitata (previous names: Raphidocelis subcapitata, Selenastrum capricornutum)
ErC50 (algae)	54.7 mg/l Source: EHCA
LOEC (chronic)	> 1.45 mg/l Test organisms (species): Daphnia magna Duration: '21 d'
NOEC (chronic)	0.68 mg/l Test organisms (species): Daphnia magna Duration: '21 d'

Methyl acrylate (96-33-3)

LC50 fish 1	3.4 mg/l (OECD 203: Fish, Acute Toxicity Test, 96 h, Oncorhynchus mykiss, Flow-through system, Fresh water, Experimental value, GLP)
EC50 Daphnia 1	2.6 mg/l (OECD 202: Daphnia sp. Acute Immobilisation Test, 48 h, Daphnia magna, Flow-through system, Fresh water, Experimental value, GLP)
EC50 96h algae (1)	2.65 mg/l Test organisms (species): Pseudokirchneriella subcapitata (previous names: Raphidocelis subcapitata, Selenastrum capricornutum)
ErC50 (algae)	3.55 mg/l (OECD 201: Alga, Growth Inhibition Test, 72 h, Pseudokirchneriella subcapitata, Static system, Fresh water, Experimental value, GLP)

12.2. Persistence and degradability

mequinol; 4-methoxyphenol; hydroquinone monomethyl ether (150-76-5)

Persistence and degradability	Biodegradable in the soil. Readily biodegradable in water.
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Methyl acrylate (96-33-3)

Persistence and degradability	Readily biodegradable in water.
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Biochemical oxygen demand (BOD)	0.875 g O ₂ /g substance
Chemical oxygen demand (COD)	1.35 g O ₂ /g substance
ThOD	1.67 g O ₂ /g substance
BOD (% of ThOD)	0.524 (Calculated value)

12.3. Bioaccumulative potential

mequinol; 4-methoxyphenol; hydroquinone monomethyl ether (150-76-5)

Partition coefficient n-octanol/water (Log Pow)	1.23 Source: ECHA
Bioaccumulative potential	Low potential for bioaccumulation (Log Kow < 4).

Methyl acrylate (96-33-3)

BCF other aquatic organisms 1	3.162 l/kg (BCFBAF v3.00, QSAR)
Partition coefficient n-octanol/water (Log Pow)	0.739 (Experimental value, OECD 107: Partition Coefficient (n-octanol/water): Shake Flask Method, 25 °C)
Bioaccumulative potential	Low potential for bioaccumulation (Log Kow < 4).

12.4. Mobility in soil

mequinol; 4-methoxyphenol; hydroquinone monomethyl ether (150-76-5)

Partition coefficient n-octanol/water (Log Koc)	1.75 (log Koc, Calculated value)
Ecology - soil	Highly mobile in soil.

Methyl acrylate (96-33-3)

Surface tension	24.2 mN/m (20 °C, 100 vol %)
Partition coefficient n-octanol/water (Log Koc)	0.808 (log Koc, SRC PCKOCWIN v1.66, QSAR)
Ecology - soil	Highly mobile in soil.

12.5. Results of PBT and vPvB assessment

Component

Methyl acrylate (96-33-3)	This substance/mixture does not meet the PBT criteria of REACH regulation, annex XIII This substance/mixture does not meet the vPvB criteria of REACH regulation, annex XIII
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12.6. Other adverse effects

Additional information : Avoid release to the environment.

SECTION 13: Disposal considerations

13.1. Waste treatment methods

Waste treatment methods	: Dispose of contents/container in accordance with licensed collector's sorting instructions.
Product/Packaging disposal recommendations	: Do not discharge into drains or the environment. Dispose of at authorized waste collection point. Remove waste in accordance with local and/or national regulations. Hazardous waste shall not be mixed together with other waste. Different types of hazardous waste shall not be mixed together if this may entail a risk of pollution or create problems for the further management of the waste. Hazardous waste shall be managed responsibly. All entities that store, transport or handle hazardous waste shall take the necessary measures to prevent risks of pollution or damage to people or animals.
Additional information	: Hazardous waste according to Directive 2008/98/EC, as amended by Regulation (EU) No 1357/2014 and Regulation (EU) No 2017/997.
Ecology - waste materials	: Avoid release to the environment. Hazardous waste due to toxicity.

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European List of Waste (LoW) code : 15 01 10* - packaging containing residues of or contaminated by dangerous substances
07 01 04* - other organic solvents, washing liquids and mother liquors

SECTION 14: Transport information

In accordance with ADN / ADR / IATA / IMDG / RID

ADR	IMDG	IATA	ADN	RID
14.1. UN number				
UN 1919	UN 1919	UN 1919	UN 1919	UN 1919
14.2. UN proper shipping name				
Methyl acrylate, stabilized	methyl acrylate, stabilized	Methyl acrylate, stabilized	Methyl acrylate, stabilized	Methyl acrylate, stabilized
Transport document description				
UN 1919 Methyl acrylate, stabilized, 3, II, (D/E)	UN 1919 methyl acrylate, stabilized, 3, II (-3°C c.c.)	UN 1919 Methyl acrylate, stabilized, 3, II	UN 1919 Methyl acrylate, stabilized, 3, II	UN 1919 Methyl acrylate, stabilized, 3, II
14.3. Transport hazard class(es)				
3	3	3	3	3
				
14.4. Packing group				
II	II	II	II	II
14.5. Environmental hazards				
Dangerous for the environment : No	Dangerous for the environment : No Marine pollutant : No	Dangerous for the environment : No	Dangerous for the environment : No	Dangerous for the environment : No
No supplementary information available				

14.6. Special precautions for user

Overland transport

Transport regulations (ADR) : Subject to the provisions
Classification code (ADR) : F1
Special provisions (ADR) : 386
Limited quantities (ADR) : 1I
Excepted quantities (ADR) : E2
Packing instructions (ADR) : P001, IBC02, R001
Mixed packing provisions (ADR) : MP19
Portable tank and bulk container instructions (ADR) : T4
Portable tank and bulk container special provisions (ADR) : TP1
Tank code (ADR) : LGBF
Vehicle for tank carriage : FL
Transport category (ADR) : 2
Special provisions for carriage - Packages (ADR) : V8
Special provisions for carriage - Operation (ADR) : S2, S4, S20
Hazard identification number (Kemler No.) : 339
Orange plates :



Tunnel restriction code (ADR) : D/E
EAC code : 3WE

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Transport by sea

Transport regulations (IMDG)	: Subject to the provisions
Special provisions (IMDG)	: 386
Limited quantities (IMDG)	: 1 L
Excepted quantities (IMDG)	: E2
Packing instructions (IMDG)	: P001
IBC packing instructions (IMDG)	: IBC02
Tank instructions (IMDG)	: T4
Tank special provisions (IMDG)	: TP1, TP13
EmS-No. (Fire)	: F-E
EmS-No. (Spillage)	: S-D
Stowage category (IMDG)	: C
Stowage and handling (IMDG)	: SW1
Flash point (IMDG)	: -3°C c.c.
Properties and observations (IMDG)	: Colourless, volatile liquid with a pungent odour. Flashpoint: -3°C c.c. Explosive limits: 1.2% to 25% Immiscible with water. Harmful by inhalation. Irritating to skin, eyes and mucous membranes.

Air transport

Transport regulations (IATA)	: Subject to the provisions
PCA Excepted quantities (IATA)	: E2
PCA Limited quantities (IATA)	: Y341
PCA limited quantity max net quantity (IATA)	: 1L
PCA packing instructions (IATA)	: 353
PCA max net quantity (IATA)	: 5L
CAO packing instructions (IATA)	: 364
CAO max net quantity (IATA)	: 60L
ERG code (IATA)	: 3HI

Inland waterway transport

Classification code (ADN)	: F1
Special provisions (ADN)	: 386
Limited quantities (ADN)	: 1 L
Excepted quantities (ADN)	: E2
Carriage permitted (ADN)	: T
Equipment required (ADN)	: PP, EX, A
Ventilation (ADN)	: VE01
Number of blue cones/lights (ADN)	: 1

Rail transport

Transport regulations (RID)	: Subject to the provisions
Classification code (RID)	: F1
Special provisions (RID)	: 386
Limited quantities (RID)	: 1L
Excepted quantities (RID)	: E2
Packing instructions (RID)	: P001, IBC02, R001
Mixed packing provisions (RID)	: MP19
Portable tank and bulk container instructions (RID)	: T4
Portable tank and bulk container special provisions (RID)	: TP1
Tank codes for RID tanks (RID)	: LGBF
Transport category (RID)	: 2
Colis express (express parcels) (RID)	: CE7
Hazard identification number (RID)	: 339

14.7. Transport in bulk according to Annex II of Marpol and the IBC Code

IBC code	: Applicable.
IBC product name	: Methyl acrylate
Ship type	: Type 2
Pollution category	: Y

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SECTION 15: Regulatory information

15.1. Safety, health and environmental regulations/legislation specific for the substance or mixture

15.1.1. EU-Regulations

The following restrictions are applicable according to Annex XVII of the REACH Regulation (EC) No 1907/2006:

Reference code	Applicable on	Entry title or description
3(a)	Methyl acrylate	Substances or mixtures fulfilling the criteria for any of the following hazard classes or categories set out in Annex I to Regulation (EC) No 1272/2008: Hazard classes 2.1 to 2.4, 2.6 and 2.7, 2.8 types A and B, 2.9, 2.10, 2.12, 2.13 categories 1 and 2, 2.14 categories 1 and 2, 2.15 types A to F
3(b)	Methyl acrylate	Substances or mixtures fulfilling the criteria for any of the following hazard classes or categories set out in Annex I to Regulation (EC) No 1272/2008: Hazard classes 3.1 to 3.6, 3.7 adverse effects on sexual function and fertility or on development, 3.8 effects other than narcotic effects, 3.9 and 3.10
3(c)	Methyl acrylate	Substances or mixtures fulfilling the criteria for any of the following hazard classes or categories set out in Annex I to Regulation (EC) No 1272/2008: Hazard class 4.1
40.	Methyl acrylate	Substances classified as flammable gases category 1 or 2, flammable liquids categories 1, 2 or 3, flammable solids category 1 or 2, substances and mixtures which, in contact with water, emit flammable gases, category 1, 2 or 3, pyrophoric liquids category 1 or pyrophoric solids category 1, regardless of whether they appear in Part 3 of Annex VI to Regulation (EC) No 1272/2008 or not.

Methyl acrylate is not on the REACH Candidate List

Methyl acrylate is not on the REACH Annex XIV List

Methyl acrylate is not subject to Regulation (EU) No 649/2012 of the European Parliament and of the Council of 4 July 2012 concerning the export and import of hazardous chemicals.

Methyl acrylate is not subject to Regulation (EU) No 2019/1021 of the European Parliament and of the Council of 20 June 2019 on persistent organic pollutants

VOC content : 100 %

15.1.2. National regulations

Germany

- Employment restrictions : Observe restrictions according Act on the Protection of Working Mothers (MuSchG)
Observe restrictions according Act on the Protection of Young People in Employment (JArbSchG)
- Water hazard class (WGK) : WGK 2, Significantly hazardous to water (Classification according to AwSV; ID No. 147)
- Hazardous Incident Ordinance (12. BImSchV) : Is not subject of the Hazardous Incident Ordinance (12. BImSchV)

Netherlands

- ABM category : B(2) - toxic for aquatic organisms
- SZW-lijst van kankerverwekkende stoffen : The substance is not listed
- SZW-lijst van mutagene stoffen : The substance is not listed
- NIET-limitatieve lijst van voor de voortplanting giftige stoffen – Borstvoeding : The substance is not listed
- NIET-limitatieve lijst van voor de voortplanting giftige stoffen – Vruchtbaarheid : The substance is not listed
- NIET-limitatieve lijst van voor de voortplanting giftige stoffen – Ontwikkeling : The substance is not listed

15.2. Chemical safety assessment

A chemical safety assessment has been carried out

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SECTION 16: Other information

Indication of changes:

Version	Date of change	Section	Comments
1.0	10/10/2011	All	Initial SDS.
1.1	25/07/2014	2, 10	The dossier was updated by the Lead Registrant 1. Section 3. The substance was classified additional as: Aquatic Chronic 3 (H412: Harmful to aquatic life with long lasting effects). Section 10. Acute toxicity after inhalation exposure: LD50 was corrected.
2.0	10/01/2019	All	SDS have been corrected in according to new data of Registration dossier, Chemical Safety Report, and new Transport information
2.1	06/05/2020	1, 8	Manufacturer's contact details and Occupational Exposure Limits were updated.
3.0	26/05/2020	All	The safety data sheet has been updated according to the new data in the chemical safety report. The format of the safety data sheet has been changed
3.1	05/02/2021	1.4, 8.1, 9.2	Sections have been updated

Data sources : REGULATION (EC) No 1272/2008 OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL of 16 December 2008 on classification, labelling and packaging of substances and mixtures, amending and repealing Directives 67/548/EEC and 1999/45/EC, and amending Regulation (EC) No 1907/2006.

Other information : None.

Full text of H- and EUH-statements:

Acute Tox. 3 (Inhalation)	Acute toxicity (inhal.), Category 3
Acute Tox. 4 (Dermal)	Acute toxicity (dermal), Category 4
Acute Tox. 4 (Oral)	Acute toxicity (oral), Category 4
Aquatic Chronic 3	Hazardous to the aquatic environment — Chronic Hazard, Category 3
Eye Irrit. 2	Serious eye damage/eye irritation, Category 2
Flam. Liq. 2	Flammable liquids, Category 2
Skin Irrit. 2	Skin corrosion/irritation, Category 2
Skin Sens. 1	Skin sensitisation, Category 1
STOT SE 3	Specific target organ toxicity — Single exposure, Category 3, Respiratory tract irritation
H225	Highly flammable liquid and vapour.
H302	Harmful if swallowed.
H312	Harmful in contact with skin.
H315	Causes skin irritation.
H317	May cause an allergic skin reaction.
H319	Causes serious eye irritation.
H331	Toxic if inhaled.
H335	May cause respiratory irritation.
H412	Harmful to aquatic life with long lasting effects.

Full text of use descriptors

ERC6a	Use of intermediate
ERC6c	Use of monomer in polymerisation processes at industrial site (inclusion or not into/onto article)

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ERC6d	Use of reactive process regulators in polymerisation processes at industrial site (inclusion or not into/onto article)
PC32	Polymer preparations and compounds
PROC1	Chemical production or refinery in closed process without likelihood of exposure or processes with equivalent containment conditions
PROC15	Use as laboratory reagent
PROC2	Chemical production or refinery in closed continuous process with occasional controlled exposure or processes with equivalent containment conditions
PROC28	Manual maintenance (cleaning and repair) of machinery
PROC3	Manufacture or formulation in the chemical industry in closed batch processes with occasional controlled exposure or processes with equivalent containment condition
PROC4	Chemical production where opportunity for exposure arises
PROC8a	Transfer of substance or mixture (charging and discharging) at non-dedicated facilities
PROC8b	Transfer of substance or mixture (charging and discharging) at dedicated facilities
PROC9	Transfer of substance or preparation into small containers (dedicated filling line, including weighing)
SU12	Manufacture of plastics products, including compounding and conversion
SU8	Manufacture of bulk, large scale chemicals (including petroleum products)
SU9	Manufacture of fine chemicals

This information is based on our current knowledge and is intended to describe the product for the purposes of health, safety and environmental requirements only. It should not therefore be construed as guaranteeing any specific property of the product.

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Annex to the safety data sheet

Identified Uses	Es N°	Short title	Page
Polymer production, industrial; Production sites	1		19
Use as intermediate, industrial; Production Sites	2		31
Polymer production, industrial; Downstream user sites	3		45
Use as intermediate, industrial; Downstream user sites	4		58

Methyl acrylate

Annex to the safety data sheet: Exposure scenario

CAS-No.: 96-33-3 Product form: Substance Physical state: Liquid Substance type: Mono-constituent

1. IW-1 - Industrial, Manufacture; Polymer production, industrial; Production sites

1.1. Title section

Polymer production, industrial; Production sites

ES Ref.: IW-1
ES Type: Worker
Revision date: 26/05/2020

Company ES code: MA-PP

Environment	Use descriptors
CS 1	Use in polymer production ERC6c

Worker	Use descriptors
CS 2	Chemical production or refinery in closed process without likelihood of exposure or processes with equivalent containment conditions PROC1
CS 3	Chemical production or refinery in closed continuous process with occasional controlled exposure or processes with equivalent containment conditions PROC2
CS 4	Manufacture or formulation in the chemical industry in closed batch processes with occasional controlled exposure or processes with equivalent containment condition PROC3
CS 5	Chemical production where opportunity for exposure arises PROC4
CS 6	Transfer of substance or mixture (charging/discharging) at non dedicated-facilities; Drum/batch transfers PROC8a
CS 7	Transfer of substance or mixture (charging/discharging) at non dedicated-facilities; Equipment cleaning and maintenance PROC8a, PROC28
CS 8	Transfer of substance or mixture (charging/discharging) at dedicated facilities PROC8b
CS 9	Transfer of substance or mixture into small containers (dedicated filling line, including weighing) PROC9
CS 10	Storage PROC1
CS 11	Storage PROC2

Processes, tasks, activities covered	Use of monomer in polymerisation processes at industrial site (inclusion or not into/onto article)
Assessment method	EUSES [EE4]

Methyl acrylate

Annex to the safety data sheet: Exposure scenario

CAS-No.: 96-33-3 Product form: Substance Physical state: Liquid Substance type: Mono-constituent

1.2. Conditions of use affecting exposure

1.2.1. Control of environmental exposure: Use in polymer production (ERC6c)

ERC6c	Use of monomer in polymerisation processes at industrial site (inclusion or not into/onto article)
Assessment method	EUSES [EE4]

Product (article) characteristics

Physical form of product	Liquid
Concentration of substance in product	≤ 100 %
Other product characteristics	Ester [PrC4]

Amount used, frequency and duration of use (or from service life)

Annual site tonnage [A5]	15500 t/yr
Fraction of EU tonnage used in region: [A1]	0.2 %
Daily amount per site	51.7 t/d
Emission days [FD4]	300 days/yr

Technical and organisational conditions and measures

Typical measures to maintain workplace concentrations of airborne VOCs and particulates below respective OELs: e.g. thermal wet scrubber – gas removal and/or air filtration – particle removal and/or thermal oxidation and/or vapour recovery – adsorption.	
No release to wastewater from process as such, wastewater emissions limited to release generated from final equipment cleaning step using water	
Process optimized for highly efficient use of raw materials [OOC15]	
Acclimated biological treatment	Effectiveness. Water. 96,3%. Readily biodegradable [PrC5a]

Conditions and measures related to sewage treatment plant

Release rate	≥ 2000 m ³ /d
Biological treatment. Standard	88.03 % Effectiveness. Water
Controlled application of sewage sludge to agricultural soil	

Conditions and measures related to treatment of waste (including article waste)

External treatment and disposal of waste should comply with applicable local and/or national regulations [ETW3]	
External recovery and recycling of waste should comply with applicable local and/or national regulations [ERW1]	

1.2.2. Control of worker exposure: Chemical production or refinery in closed process without likelihood of exposure or processes with equivalent containment conditions (PROC1)

PROC1	Chemical production or refinery in closed process without likelihood of exposure or processes with equivalent containment conditions
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Product (article) characteristics

Physical form of product	Liquid
Concentration of substance in product	≤ 100 %

Methyl acrylate

Annex to the safety data sheet: Exposure scenario

CAS-No.: 96-33-3 Product form: Substance Physical state: Liquid Substance type: Mono-constituent

Other product characteristics	Ester [PrC4]
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Amount used (or contained in articles), frequency and duration of use/exposure

Exposure duration	≤ 8 h/day
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Technical and organisational conditions and measures

Local exhaust ventilation. None	Effectiveness. Inhalation. 0%. Dermal. 0%
Provide a basic standard of general ventilation (1 to 3 air changes per hour).	Effectiveness. Inhalation. 0%
Occupational health and safety management system: advanced	

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

Respiratory protection. None	Effectiveness. Inhalation. 0%
Wear chemically resistant gloves (tested to EN374) in combination with 'basic' employee training [PPE16]	
Use suitable eye/skin protection	Effectiveness. Dermal. 90%
Avoid direct eye contact with product, also via contamination on hands [E73]	
Avoid direct skin contact with product. Identify potential areas for indirect skin contact. Wear gloves (tested to EN374) if hand contact with substance likely. Clean up contamination/spills as soon as they occur. Wash off any skin contamination immediately. Provide basic employee training to prevent / minimise exposures and to report any skin problems that may develop [E3]	
Where there is a possibility of contact, wear protective clothing, including gloves. Chemical resistant apron. Goggles + face shield	
Therefore the conclusion is that eye and skin irritation and dermal sensitisation are prevented.	

Other conditions affecting workers exposure

Assumes a good basic standard of occupational hygiene is implemented [G1]	
Indoor use [OOC2]	
Temperature, °C	≤ 40

1.2.3. Control of worker exposure: Chemical production or refinery in closed continuous process with occasional controlled exposure or processes with equivalent containment conditions (PROC2)

PROC2	Chemical production or refinery in closed continuous process with occasional controlled exposure or processes with equivalent containment conditions
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Product (article) characteristics

Physical form of product	Liquid
Concentration of substance in product	≤ 100 %
Other product characteristics	Ester [PrC4]

Amount used (or contained in articles), frequency and duration of use/exposure

Exposure duration	≤ 8 h/day
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Technical and organisational conditions and measures

Local exhaust ventilation	Effectiveness. Inhalation. 90%. Dermal. 0%
Provide a basic standard of general ventilation (1 to 3 air changes per hour).	Effectiveness. Inhalation. 0%
Occupational health and safety management system: advanced	

Methyl acrylate

Annex to the safety data sheet: Exposure scenario

CAS-No.: 96-33-3 Product form: Substance Physical state: Liquid Substance type: Mono-constituent

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

Respiratory protection. None	Effectiveness. Inhalation. 0%
Wear chemically resistant gloves (tested to EN374) in combination with 'basic' employee training [PPE16]	
Use suitable eye/skin protection	Effectiveness. Dermal. 90%
Avoid direct eye contact with product, also via contamination on hands [E73]	
Avoid direct skin contact with product. Identify potential areas for indirect skin contact. Wear gloves (tested to EN374) if hand contact with substance likely. Clean up contamination/spills as soon as they occur. Wash off any skin contamination immediately. Provide basic employee training to prevent / minimise exposures and to report any skin problems that may develop [E3]	
Where there is a possibility of contact, wear protective clothing, including gloves. Chemical resistant apron. Goggles + face shield	
Therefore the conclusion is that eye and skin irritation and dermal sensitisation are prevented.	

Other conditions affecting workers exposure

Assumes a good basic standard of occupational hygiene is implemented [G1]	
Indoor use [OOC2]	
Temperature, °C	≤ 40

1.2.4. Control of worker exposure: Manufacture or formulation in the chemical industry in closed batch processes with occasional controlled exposure or processes with equivalent containment condition (PROC3)

PROC3	Manufacture or formulation in the chemical industry in closed batch processes with occasional controlled exposure or processes with equivalent containment condition
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Product (article) characteristics

Physical form of product	Liquid
Concentration of substance in product	≤ 100 %
Other product characteristics	Ester [PrC4]

Amount used (or contained in articles), frequency and duration of use/exposure

Exposure duration	≤ 8 h/day
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Technical and organisational conditions and measures

Local exhaust ventilation	Effectiveness. Inhalation. 90%. Dermal. 0%
Provide a good standard of general ventilation (not less than 3 to 5 air changes per hour) [E11]	Effectiveness. Inhalation. 30%
Occupational health and safety management system: advanced	

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

Respiratory protection. None	Effectiveness. Inhalation. 0%
Wear chemically resistant gloves (tested to EN374) in combination with 'basic' employee training [PPE16]	
Use suitable eye/skin protection	Effectiveness. Dermal. 90%
Avoid direct eye contact with product, also via contamination on hands [E73]	
Avoid direct skin contact with product. Identify potential areas for indirect skin contact. Wear gloves (tested to EN374) if hand contact with substance likely. Clean up contamination/spills as soon as they occur. Wash off any skin contamination immediately. Provide basic employee training to prevent / minimise exposures and to report any skin problems that may develop [E3]	

Methyl acrylate

Annex to the safety data sheet: Exposure scenario

CAS-No.: 96-33-3 Product form: Substance Physical state: Liquid Substance type: Mono-constituent

Where there is a possibility of contact, wear protective clothing, including gloves. Chemical resistant apron. Goggles + face shield

Therefore the conclusion is that eye and skin irritation and dermal sensitisation are prevented.

Other conditions affecting workers exposure

Assumes a good basic standard of occupational hygiene is implemented [G1]

Indoor or outdoor use [OOC3]

Temperature, °C

≤ 40

1.2.5. Control of worker exposure: Chemical production where opportunity for exposure arises (PROC4)

PROC4

Chemical production where opportunity for exposure arises

Product (article) characteristics

Physical form of product

Liquid

Concentration of substance in product

≤ 100 %

Other product characteristics

Ester [PrC4]

Amount used (or contained in articles), frequency and duration of use/exposure

Exposure duration

≤ 8 h/day

Technical and organisational conditions and measures

Local exhaust ventilation

Effectiveness. Inhalation. 90%. Dermal. 0%

Provide enhanced general ventilation (5 to 10 air changes per hour)

Effectiveness. Inhalation. 30%

Occupational health and safety management system: advanced

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

Respiratory protection. None

Effectiveness. Inhalation. 0%

Wear chemically resistant gloves (tested to EN374) in combination with 'basic' employee training [PPE16]

Use suitable eye/skin protection

Effectiveness. Dermal. 90%

Avoid direct eye contact with product, also via contamination on hands [E73]

Avoid direct skin contact with product. Identify potential areas for indirect skin contact. Wear gloves (tested to EN374) if hand contact with substance likely. Clean up contamination/spills as soon as they occur. Wash off any skin contamination immediately. Provide basic employee training to prevent / minimise exposures and to report any skin problems that may develop [E3]

Where there is a possibility of contact, wear protective clothing, including gloves. Chemical resistant apron. Goggles + face shield

Therefore the conclusion is that eye and skin irritation and dermal sensitisation are prevented.

Other conditions affecting workers exposure

Assumes a good basic standard of occupational hygiene is implemented [G1]

Indoor use [OOC2]

Temperature, °C

≤ 40

1.2.6. Control of worker exposure: Transfer of substance or mixture (charging/discharging) at non dedicated-facilities; Drum/batch transfers (PROC8a)

PROC8a

Transfer of substance or mixture (charging and discharging) at non-dedicated facilities

Methyl acrylate

Annex to the safety data sheet: Exposure scenario

CAS-No.: 96-33-3 Product form: Substance Physical state: Liquid Substance type: Mono-constituent

Product (article) characteristics

Physical form of product	Liquid
Concentration of substance in product	≤ 100 %
Other product characteristics	Ester [PrC4]

Amount used (or contained in articles), frequency and duration of use/exposure

Exposure duration	≤ 1 h/day
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Technical and organisational conditions and measures

Local exhaust ventilation	Effectiveness. Inhalation. 90%. Dermal. 0%
Provide a good standard of general ventilation (not less than 3 to 5 air changes per hour) [E11]	Effectiveness. Inhalation. 30%
Occupational health and safety management system: advanced	

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

Respiratory protection. None	Effectiveness. Inhalation. 0%
Wear chemically resistant gloves (tested to EN374) in combination with 'basic' employee training [PPE16]	
Use suitable eye/skin protection	Effectiveness. Dermal. 90%
Avoid direct eye contact with product, also via contamination on hands [E73]	
Avoid direct skin contact with product. Identify potential areas for indirect skin contact. Wear gloves (tested to EN374) if hand contact with substance likely. Clean up contamination/spills as soon as they occur. Wash off any skin contamination immediately. Provide basic employee training to prevent / minimise exposures and to report any skin problems that may develop [E3]	
Where there is a possibility of contact, wear protective clothing, including gloves. Chemical resistant apron. Goggles + face shield	
Therefore the conclusion is that eye and skin irritation and dermal sensitisation are prevented.	

Other conditions affecting workers exposure

Assumes a good basic standard of occupational hygiene is implemented [G1]	
Indoor use [OOC2]	
Temperature, °C	≤ 40

1.2.7. Control of worker exposure: Transfer of substance or mixture (charging/discharging) at non dedicated-facilities; Equipment cleaning and maintenance (PROC8a, PROC28)

PROC8a	Transfer of substance or mixture (charging and discharging) at non-dedicated facilities
PROC28	Manual maintenance (cleaning and repair) of machinery

Product (article) characteristics

Physical form of product	Liquid
Concentration of substance in product	≤ 100 %
Other product characteristics	Ester [PrC4]

Amount used (or contained in articles), frequency and duration of use/exposure

Exposure duration	≤ 1 h/day
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Methyl acrylate

Annex to the safety data sheet: Exposure scenario

CAS-No.: 96-33-3 Product form: Substance Physical state: Liquid Substance type: Mono-constituent

Technical and organisational conditions and measures

Provide a good standard of general ventilation (not less than 3 to 5 air changes per hour) [E11]	Effectiveness. Inhalation. 30%
Local exhaust ventilation. None	Effectiveness. Inhalation. 0%. Dermal. 0%
Occupational health and safety management system: advanced	

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

Wear respiratory protection. Approved respirator. Assigned Protection Factor (APF) of 10	Effectiveness. Inhalation. 90%
Wear chemically resistant gloves (tested to EN374) in combination with 'basic' employee training [PPE16]	
Use suitable eye/skin protection	Effectiveness. Dermal. 90%
Avoid direct eye contact with product, also via contamination on hands [E73]	
Avoid direct skin contact with product. Identify potential areas for indirect skin contact. Wear gloves (tested to EN374) if hand contact with substance likely. Clean up contamination/spills as soon as they occur. Wash off any skin contamination immediately. Provide basic employee training to prevent / minimise exposures and to report any skin problems that may develop [E3]	
Where there is a possibility of contact, wear protective clothing, including gloves. Chemical resistant apron. Goggles + face shield	
Therefore the conclusion is that eye and skin irritation and dermal sensitisation are prevented.	

Other conditions affecting workers exposure

Assumes a good basic standard of occupational hygiene is implemented [G1]	
Indoor use [OOC2]	
Temperature, °C	≤ 40

1.2.8. Control of worker exposure: Transfer of substance or mixture (charging/discharging) at dedicated facilities (PROC8b)

PROC8b	Transfer of substance or mixture (charging and discharging) at dedicated facilities
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Product (article) characteristics

Physical form of product	Liquid
Concentration of substance in product	≤ 100 %
Other product characteristics	Ester [PrC4]

Amount used (or contained in articles), frequency and duration of use/exposure

Exposure duration	≤ 4 h/day
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Technical and organisational conditions and measures

Local exhaust ventilation	Effectiveness. Inhalation. 95%. Dermal. 0%
Provide a good standard of general ventilation (not less than 3 to 5 air changes per hour) [E11]	Effectiveness. Inhalation. 30%
Occupational health and safety management system: advanced	

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

Respiratory protection. None	Effectiveness. Inhalation. 0%
Wear chemically resistant gloves (tested to EN374) in combination with 'basic' employee training [PPE16]	
Use suitable eye/skin protection	Effectiveness. Dermal. 90%
Avoid direct eye contact with product, also via contamination on hands [E73]	

Methyl acrylate

Annex to the safety data sheet: Exposure scenario

CAS-No.: 96-33-3 Product form: Substance Physical state: Liquid Substance type: Mono-constituent

Avoid direct skin contact with product. Identify potential areas for indirect skin contact. Wear gloves (tested to EN374) if hand contact with substance likely. Clean up contamination/spills as soon as they occur. Wash off any skin contamination immediately. Provide basic employee training to prevent / minimise exposures and to report any skin problems that may develop [E3]

Where there is a possibility of contact, wear protective clothing, including gloves. Chemical resistant apron. Goggles + face shield

Therefore the conclusion is that eye and skin irritation and dermal sensitisation are prevented.

Other conditions affecting workers exposure

Assumes a good basic standard of occupational hygiene is implemented [G1]

Indoor use [OOC2]

Temperature, °C

≤ 40

1.2.9. Control of worker exposure: Transfer of substance or mixture into small containers (dedicated filling line, including weighing) (PROC9)

PROC9

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

Product (article) characteristics

Physical form of product

Liquid

Concentration of substance in product

≤ 100 %

Other product characteristics

Ester [PrC4]

Amount used (or contained in articles), frequency and duration of use/exposure

Exposure duration

≤ 1 h/day

Technical and organisational conditions and measures

Local exhaust ventilation

Effectiveness. Inhalation. 90%. Dermal. 0%

Provide a good standard of general ventilation (not less than 3 to 5 air changes per hour) [E11]

Effectiveness. Inhalation. 30%

Occupational health and safety management system: advanced

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

Respiratory protection. None

Effectiveness. Inhalation. 0%

Wear chemically resistant gloves (tested to EN374) in combination with 'basic' employee training [PPE16]

Use suitable eye/skin protection

Effectiveness. Dermal. 90%

Avoid direct eye contact with product, also via contamination on hands [E73]

Avoid direct skin contact with product. Identify potential areas for indirect skin contact. Wear gloves (tested to EN374) if hand contact with substance likely. Clean up contamination/spills as soon as they occur. Wash off any skin contamination immediately. Provide basic employee training to prevent / minimise exposures and to report any skin problems that may develop [E3]

Where there is a possibility of contact, wear protective clothing, including gloves. Chemical resistant apron. Goggles + face shield

Therefore the conclusion is that eye and skin irritation and dermal sensitisation are prevented.

Other conditions affecting workers exposure

Assumes a good basic standard of occupational hygiene is implemented [G1]

Indoor use [OOC2]

Methyl acrylate

Annex to the safety data sheet: Exposure scenario

CAS-No.: 96-33-3 Product form: Substance Physical state: Liquid Substance type: Mono-constituent

Temperature, °C	≤ 40
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1.2.10. Control of worker exposure: Storage (PROC1)

PROC1	Chemical production or refinery in closed process without likelihood of exposure or processes with equivalent containment conditions
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Product (article) characteristics

Physical form of product	Liquid
Concentration of substance in product	≤ 100 %
Other product characteristics	Ester [PrC4]

Amount used (or contained in articles), frequency and duration of use/exposure

Exposure duration	≤ 8 h/day
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Technical and organisational conditions and measures

Local exhaust ventilation. None	Effectiveness. Inhalation. 0%. Dermal. 0%
Provide a basic standard of general ventilation (1 to 3 air changes per hour).	Effectiveness. Inhalation. 0%
Occupational health and safety management system: advanced	

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

Respiratory protection. None	Effectiveness. Inhalation. 0%
Wear chemically resistant gloves (tested to EN374) in combination with 'basic' employee training [PPE16]	
Use suitable eye/skin protection	Effectiveness. Dermal. 90%
Avoid direct eye contact with product, also via contamination on hands [E73]	
Avoid direct skin contact with product. Identify potential areas for indirect skin contact. Wear gloves (tested to EN374) if hand contact with substance likely. Clean up contamination/spills as soon as they occur. Wash off any skin contamination immediately. Provide basic employee training to prevent / minimise exposures and to report any skin problems that may develop [E3]	
Where there is a possibility of contact, wear protective clothing, including gloves. Chemical resistant apron. Goggles + face shield	
Therefore the conclusion is that eye and skin irritation and dermal sensitisation are prevented.	

Other conditions affecting workers exposure

Assumes a good basic standard of occupational hygiene is implemented [G1]	
Indoor use [OOC2]	
Temperature, °C	≤ 40

1.2.11. Control of worker exposure: Storage (PROC2)

PROC2	Chemical production or refinery in closed continuous process with occasional controlled exposure or processes with equivalent containment conditions
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Product (article) characteristics

Physical form of product	Liquid
Concentration of substance in product	≤ 100 %
Other product characteristics	Ester [PrC4]

Methyl acrylate

Annex to the safety data sheet: Exposure scenario

CAS-No.: 96-33-3 Product form: Substance Physical state: Liquid Substance type: Mono-constituent

Amount used (or contained in articles), frequency and duration of use/exposure

Exposure duration	≤ 8 h/day
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Technical and organisational conditions and measures

Provide a basic standard of general ventilation (1 to 3 air changes per hour).	Effectiveness. Inhalation. 0%
Local exhaust ventilation	Effectiveness. Inhalation. 90%. Dermal. 0%
Occupational health and safety management system: advanced	

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

Respiratory protection. None	Effectiveness. Inhalation. 0%
Wear chemically resistant gloves (tested to EN374) in combination with 'basic' employee training [PPE16]	
Use suitable eye/skin protection	Effectiveness. Dermal. 90%
Avoid direct eye contact with product, also via contamination on hands [E73]	
Avoid direct skin contact with product. Identify potential areas for indirect skin contact. Wear gloves (tested to EN374) if hand contact with substance likely. Clean up contamination/spills as soon as they occur. Wash off any skin contamination immediately. Provide basic employee training to prevent / minimise exposures and to report any skin problems that may develop [E3]	
Where there is a possibility of contact, wear protective clothing, including gloves. Chemical resistant apron. Goggles + face shield	
Therefore the conclusion is that eye and skin irritation and dermal sensitisation are prevented.	

Other conditions affecting workers exposure

Assumes a good basic standard of occupational hygiene is implemented [G1]	
Indoor use [OOC2]	
Temperature, °C	≤ 40

1.3. Exposure estimation and reference to its source

1.3.1. Environmental release and exposure Use in polymer production (ERC6c)

Information for contributing exposure scenario

Release route		Release rate		Release estimation method
Indoor or outdoor use [OOC3]				
Protection target	Exposure estimation	PNEC	RCR	Assessment method
Freshwater	0.00041 mg/l	0.003 mg/l	0.151	EUSES v2.1.2
Marine water	0.0000529 mg/l	0 mg/l	0.196	EUSES v2.1.2
Freshwater sediment	1.74 µg/kg dw	0.011 mg/kg dwt	0.151	EUSES v2.1.2

Methyl acrylate

Annex to the safety data sheet: Exposure scenario

CAS-No.: 96-33-3 Product form: Substance Physical state: Liquid Substance type: Mono-constituent

Marine water sediment	0.224 µg/kg dw	0.011 mg/kg dwt	0.019	EUSES v2.1.2
Sewage treatment plant	0.00323 mg/l	10 mg/l	< 0.01	EUSES v2.1.2

Release estimation	Water	0.054 kg/day	Analytical testing
Release estimation	Air	2580 kg/day	ERC
Release estimation	soil	0	ERC
Release estimation	The removal in the modelled biological STP is not accounted for		

1.3.2. Worker exposure Chemical production or refinery in closed process without likelihood of exposure or processes with equivalent containment conditions (PROC1)

Information for contributing exposure scenario			
Route of exposure and type of effects	Exposure estimate	RCR	Method
Acute - Local - Dermal	0.000992 mg/m ³	< 0.01	ECETOC TRA worker v2.0
Long term - Local - Inhalation	0.036 mg/m ³	< 0.01	ECETOC TRA worker v2.0

1.3.3. Worker exposure Chemical production or refinery in closed continuous process with occasional controlled exposure or processes with equivalent containment conditions (PROC2)

Information for contributing exposure scenario			
Route of exposure and type of effects	Exposure estimate	RCR	Method
Acute - Local - Dermal	0.02 mg/m ³	0.041	ECETOC TRA worker v2.0
Long term - Local - Inhalation	8.968 mg/m ³	0.498	ECETOC TRA worker v2.0

1.3.4. Worker exposure Manufacture or formulation in the chemical industry in closed batch processes with occasional controlled exposure or processes with equivalent containment condition (PROC3)

Information for contributing exposure scenario			
Route of exposure and type of effects	Exposure estimate	RCR	Method
Acute - Local - Dermal	0.02 mg/m ³	0.041	ECETOC TRA worker v2.0
Long term - Local - Inhalation	12.55 mg/m ³	0.698	ECETOC TRA worker v2.0

1.3.5. Worker exposure Chemical production where opportunity for exposure arises (PROC4)

Information for contributing exposure scenario			
Route of exposure and type of effects	Exposure estimate	RCR	Method
Acute - Local - Dermal	0.01 mg/m ³	0.204	ECETOC TRA worker v2.0
Long term - Local - Inhalation	10.76 mg/m ³	0.598	ECETOC TRA worker v2.0

1.3.6. Worker exposure Transfer of substance or mixture (charging/discharging) at non dedicated-facilities; Drum/batch transfers (PROC8a)

Information for contributing exposure scenario			
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Methyl acrylate

Annex to the safety data sheet: Exposure scenario

CAS-No.: 96-33-3 Product form: Substance Physical state: Liquid Substance type: Mono-constituent

Route of exposure and type of effects	Exposure estimate	RCR	Method
Acute - Local - Dermal	0.02 mg/m ³	0.041	ECETOC TRA worker v2.0
Long term - Local - Inhalation	12.55 mg/m ³	0.698	ECETOC TRA worker v2.0

1.3.7. Worker exposure Transfer of substance or mixture (charging/discharging) at non dedicated-facilities; Equipment cleaning and maintenance (PROC8a, PROC28)

Information for contributing exposure scenario

Route of exposure and type of effects	Exposure estimate	RCR	Method
Acute - Local - Dermal	0.02 mg/m ³	0.041	ECETOC TRA worker v2.0
Long term - Local - Inhalation	12.55 mg/m ³	0.698	ECETOC TRA worker v2.0

1.3.8. Worker exposure Transfer of substance or mixture (charging/discharging) at dedicated facilities (PROC8b)

Information for contributing exposure scenario

Route of exposure and type of effects	Exposure estimate	RCR	Method
Acute - Local - Dermal	0.06 mg/m ³	0.122	ECETOC TRA worker v2.0
Long term - Local - Inhalation	11.3 mg/m ³	0.628	ECETOC TRA worker v2.0

1.3.9. Worker exposure Transfer of substance or mixture into small containers (dedicated filling line, including weighing) (PROC9)

Information for contributing exposure scenario

Route of exposure and type of effects	Exposure estimate	RCR	Method
Acute - Local - Dermal	0.02 mg/m ³	0.041	ECETOC TRA worker v2.0
Long term - Local - Inhalation	10.04 mg/m ³	0.558	ECETOC TRA worker v2.0

1.3.10. Worker exposure Storage (PROC1)

Information for contributing exposure scenario

Route of exposure and type of effects	Exposure estimate	RCR	Method
Acute - Local - Dermal	0.000992 mg/m ³	< 0.01	ECETOC TRA worker v2.0
Long term - Local - Inhalation	0.036 mg/m ³	< 0.01	ECETOC TRA worker v2.0

1.3.11. Worker exposure Storage (PROC2)

Information for contributing exposure scenario

Route of exposure and type of effects	Exposure estimate	RCR	Method
Acute - Local - Dermal	0.02 mg/m ³	< 0.041	ECETOC TRA worker v2.0
Long term - Local - Inhalation	8.968 mg/m ³	< 0.498	ECETOC TRA worker v2.0

1.4. Guidance to Downstream User to evaluate whether he works inside the boundaries set by the ES

1.4.1. Environment

No data available

1.4.2. Health

No data available

Methyl acrylate

Annex to the safety data sheet: Exposure scenario

CAS-No.: 96-33-3 Product form: Substance Physical state: Liquid Substance type: Mono-constituent

2. IW-2 - Industrial, Manufacture; Use as intermediate, industrial; Production Sites

2.1. Title section

Use as intermediate, industrial; Production Sites

ES Ref.: IW-2 ES Type: Worker Revision date: 26/05/2020	Company ES code: MA-IP
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Environment	Use descriptors
CS 1	Use of intermediate ERC6a

Worker	Use descriptors
CS 2	General exposures (closed systems) PROC1
CS 3	General exposures (closed systems) PROC2
CS 4	Manufacture or formulation in the chemical industry in closed batch processes with occasional controlled exposure or processes with equivalent containment condition PROC3
CS 5	Chemical production where opportunity for exposure arises PROC4
CS 6	Equipment cleaning and maintenance PROC8a, PROC28
CS 7	Transfer of substance or mixture (charging/discharging) at non dedicated-facilities PROC8a
CS 8	Process sampling PROC8b
CS 9	Bulk transfers. Closed systems PROC8b
CS 10	Bulk transfers. Open systems PROC8b
CS 11	Laboratory activities PROC15
CS 12	Storage PROC1
CS 13	Storage PROC2

Processes, tasks, activities covered	Use of substance as an intermediate within closed or contained systems (not related to Strictly Controlled Conditions). Includes incidental exposures during recycling/ recovery, material transfers, storage, sampling, associated laboratory activities, maintenance and loading (including marine vessel/barge, road/rail car and bulk container).
Assessment method	EUSES [EE4]

2.2. Conditions of use affecting exposure

2.2.1. Control of environmental exposure: Use of intermediate (ERC6a)

ERC6a	Use of intermediate
Assessment method	EUSES [EE4]

Product (article) characteristics

Physical form of product	Liquid
Concentration of substance in product	≤ 100 %

Methyl acrylate

Annex to the safety data sheet: Exposure scenario

CAS-No.: 96-33-3 Product form: Substance Physical state: Liquid Substance type: Mono-constituent

Viscosity, dynamic	0 mPa·s
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Amount used, frequency and duration of use (or from service life)

Daily amount per site	≤ 26 t/d
Annual amount per site	≤ 7800 t/yr
Emission days [FD4]	300 days/yr

Technical and organisational conditions and measures

Upgrade of the system in place or additional air treatment measures, such as wet scrubber and/or air filtration and/or thermal oxidation and/or vapour recovery systems, in order to achieve a reduction of the air emissions.	Effectiveness. Air. 50%
Typical measures to maintain workplace concentrations of airborne VOCs and particulates below respective OELs. Typical measures to maintain workplace concentrations of airborne VOCs and particulates below respective OELs: e.g. thermal wet scrubber – gas removal and/or air filtration – particle removal and/or thermal oxidation and/or vapour recovery – adsorption.	
No release to wastewater from process as such, wastewater emissions limited to release generated from final equipment cleaning step using water	
Process optimized for highly efficient use of raw materials [OOC15]	
Acclimated biological treatment	Effectiveness. Water. 96,3%. Readily biodegradable [PrC5a]

Conditions and measures related to sewage treatment plant

Release rate	≥ 2000 m ³ /d
Biological treatment. Standard	88.03 % Effectiveness. Water
Controlled application of sewage sludge to agricultural soil	

Conditions and measures related to treatment of waste (including article waste)

External treatment and disposal of waste should comply with applicable local and/or national regulations [ETW3]	
External recovery and recycling of waste should comply with applicable local and/or national regulations [ERW1]	

2.2.2. Control of worker exposure: General exposures (closed systems) (PROC1)

PROC1	Chemical production or refinery in closed process without likelihood of exposure or processes with equivalent containment conditions
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Product (article) characteristics

Physical form of product	Liquid
Concentration of substance in product	≤ 100 %
Other product characteristics	Ester [PrC4]

Amount used (or contained in articles), frequency and duration of use/exposure

Exposure duration	≤ 8 h/day
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Technical and organisational conditions and measures

Local exhaust ventilation. None	Effectiveness. Inhalation. 0%. Dermal. 0%
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Methyl acrylate

Annex to the safety data sheet: Exposure scenario

CAS-No.: 96-33-3 Product form: Substance Physical state: Liquid Substance type: Mono-constituent

Provide a basic standard of general ventilation (1 to 3 air changes per hour).	Effectiveness. Inhalation. 0%
Occupational health and safety management system: advanced	
Use in closed process	

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

Respiratory protection. None	Effectiveness. Inhalation. 0%
Wear chemically resistant gloves (tested to EN374) in combination with 'basic' employee training [PPE16]	
Use suitable eye/skin protection	Effectiveness. Dermal. 90%
Avoid direct eye contact with product, also via contamination on hands [E73]	
Avoid direct skin contact with product. Identify potential areas for indirect skin contact. Wear gloves (tested to EN374) if hand contact with substance likely. Clean up contamination/spills as soon as they occur. Wash off any skin contamination immediately. Provide basic employee training to prevent / minimise exposures and to report any skin problems that may develop [E3]	
Where there is a possibility of contact, wear protective clothing, including gloves. Chemical resistant apron. Goggles + face shield	
Therefore the conclusion is that eye and skin irritation and dermal sensitisation are prevented.	

Other conditions affecting workers exposure

Assumes a good basic standard of occupational hygiene is implemented [G1]	
Chemical production or refinery in closed process without likelihood of exposure or processes with equivalent containment conditions	
Indoor use [OOC2]	
Temperature, °C	≤ 40

2.2.3. Control of worker exposure: General exposures (closed systems) (PROC2)

PROC2	Chemical production or refinery in closed continuous process with occasional controlled exposure or processes with equivalent containment conditions
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Product (article) characteristics

Physical form of product	Liquid
Concentration of substance in product	≤ 100 %
Other product characteristics	Ester [PrC4]

Amount used (or contained in articles), frequency and duration of use/exposure

Exposure duration	≤ 8 h/day
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Technical and organisational conditions and measures

Provide a basic standard of general ventilation (1 to 3 air changes per hour).	Effectiveness. Inhalation. 0%
Local exhaust ventilation	Effectiveness. Inhalation. 90%. Dermal. 0%
Use in closed process	
Occupational health and safety management system: advanced	

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

Respiratory protection. None	Effectiveness. Inhalation. 0%
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Methyl acrylate

Annex to the safety data sheet: Exposure scenario

CAS-No.: 96-33-3 Product form: Substance Physical state: Liquid Substance type: Mono-constituent

Wear chemically resistant gloves (tested to EN374) in combination with 'basic' employee training [PPE16]	
Use suitable eye/skin protection	Effectiveness. Dermal. 90%
Avoid direct eye contact with product, also via contamination on hands [E73]	
Avoid direct skin contact with product. Identify potential areas for indirect skin contact. Wear gloves (tested to EN374) if hand contact with substance likely. Clean up contamination/spills as soon as they occur. Wash off any skin contamination immediately. Provide basic employee training to prevent / minimise exposures and to report any skin problems that may develop [E3]	
Where there is a possibility of contact, wear protective clothing, including gloves. Chemical resistant apron. Goggles + face shield	
Therefore the conclusion is that eye and skin irritation and dermal sensitisation are prevented.	

Other conditions affecting workers exposure

Assumes a good basic standard of occupational hygiene is implemented [G1]	
Use in closed, continuous process with occasional controlled exposure	
Indoor use [OOC2]	
Temperature, °C	≤ 40

2.2.4. Control of worker exposure: Manufacture or formulation in the chemical industry in closed batch processes with occasional controlled exposure or processes with equivalent containment condition (PROC3)

PROC3	Manufacture or formulation in the chemical industry in closed batch processes with occasional controlled exposure or processes with equivalent containment condition
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Product (article) characteristics

Physical form of product	Liquid
Concentration of substance in product	≤ 100 %
Other product characteristics	Ester [PrC4]

Amount used (or contained in articles), frequency and duration of use/exposure

Exposure duration	≤ 8 h/day
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Technical and organisational conditions and measures

Local exhaust ventilation	Effectiveness. Inhalation. 90%. Dermal. 0%
Provide a good standard of general ventilation (not less than 3 to 5 air changes per hour) [E11]	Effectiveness. Inhalation. 30%
Occupational health and safety management system: advanced	
Use in closed process	

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

Respiratory protection. None	Effectiveness. Inhalation. 0%
Wear chemically resistant gloves (tested to EN374) in combination with 'basic' employee training [PPE16]	
Use suitable eye/skin protection	Effectiveness. Dermal. 90%
Avoid direct eye contact with product, also via contamination on hands [E73]	
Avoid direct skin contact with product. Identify potential areas for indirect skin contact. Wear gloves (tested to EN374) if hand contact with substance likely. Clean up contamination/spills as soon as they occur. Wash off any skin contamination immediately. Provide basic employee training to prevent / minimise exposures and to report any skin problems that may develop [E3]	

Methyl acrylate

Annex to the safety data sheet: Exposure scenario

CAS-No.: 96-33-3 Product form: Substance Physical state: Liquid Substance type: Mono-constituent

Where there is a possibility of contact, wear protective clothing, including gloves. Chemical resistant apron. Goggles + face shield

Therefore the conclusion is that eye and skin irritation and dermal sensitisation are prevented.

Other conditions affecting workers exposure

Assumes a good basic standard of occupational hygiene is implemented [G1]

Manufacture or formulation in the chemical industry in closed batch processes with occasional controlled exposure or processes with equivalent containment condition

Indoor use [OOC2]

Temperature, °C

≤ 40

2.2.5. Control of worker exposure: Chemical production where opportunity for exposure arises (PROC4)

PROC4

Chemical production where opportunity for exposure arises

Product (article) characteristics

Physical form of product

Liquid

Concentration of substance in product

≤ 100 %

Other product characteristics

Ester [PrC4]

Amount used (or contained in articles), frequency and duration of use/exposure

Exposure duration

≤ 8 h/day

Technical and organisational conditions and measures

Local exhaust ventilation

Effectiveness. Inhalation. 90%. Dermal. 0%

Provide enhanced general ventilation (5 to 10 air changes per hour)

Effectiveness. Inhalation. 70%

Occupational health and safety management system: advanced

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

Respiratory protection. None

Effectiveness. Inhalation. 0%

Wear chemically resistant gloves (tested to EN374) in combination with 'basic' employee training [PPE16]

Use suitable eye/skin protection

Effectiveness. Dermal. 90%

Avoid direct eye contact with product, also via contamination on hands [E73]

Avoid direct skin contact with product. Identify potential areas for indirect skin contact. Wear gloves (tested to EN374) if hand contact with substance likely. Clean up contamination/spills as soon as they occur. Wash off any skin contamination immediately. Provide basic employee training to prevent / minimise exposures and to report any skin problems that may develop [E3]

Where there is a possibility of contact, wear protective clothing, including gloves. Chemical resistant apron. Goggles + face shield

Therefore the conclusion is that eye and skin irritation and dermal sensitisation are prevented.

Other conditions affecting workers exposure

Assumes a good basic standard of occupational hygiene is implemented [G1]

Indoor use [OOC2]

Temperature, °C

≤ 40

Methyl acrylate

Annex to the safety data sheet: Exposure scenario

CAS-No.: 96-33-3 Product form: Substance Physical state: Liquid Substance type: Mono-constituent

2.2.6. Control of worker exposure: Equipment cleaning and maintenance (PROC8a, PROC28)

PROC8a	Transfer of substance or mixture (charging and discharging) at non-dedicated facilities
PROC28	Manual maintenance (cleaning and repair) of machinery

Product (article) characteristics

Physical form of product	Liquid
Concentration of substance in product	≤ 100 %
Other product characteristics	Ester [PrC4]

Amount used (or contained in articles), frequency and duration of use/exposure

Exposure duration	≤ 1 h/day
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Technical and organisational conditions and measures

Provide a good standard of general ventilation (not less than 3 to 5 air changes per hour) [E11]	Effectiveness. Inhalation. 30%
Local exhaust ventilation. None	Effectiveness. Inhalation. 0%. Dermal. 0%
Occupational health and safety management system: advanced	

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

Wear respiratory protection. Approved respirator. Assigned Protection Factor (APF) of 10	Effectiveness. Inhalation. 90%
Wear chemically resistant gloves (tested to EN374) in combination with 'basic' employee training [PPE16]	
Use suitable eye/skin protection	Effectiveness. Dermal. 80%
Avoid direct eye contact with product, also via contamination on hands [E73]	
Avoid direct skin contact with product. Identify potential areas for indirect skin contact. Wear gloves (tested to EN374) if hand contact with substance likely. Clean up contamination/spills as soon as they occur. Wash off any skin contamination immediately. Provide basic employee training to prevent / minimise exposures and to report any skin problems that may develop [E3]	
Where there is a possibility of contact, wear protective clothing, including gloves. Chemical resistant apron. Goggles + face shield	
Therefore the conclusion is that eye and skin irritation and dermal sensitisation are prevented.	

Other conditions affecting workers exposure

Assumes a good basic standard of occupational hygiene is implemented [G1]	
Indoor use [OOC2]	
Temperature, °C	≤ 40

2.2.7. Control of worker exposure: Transfer of substance or mixture (charging/discharging) at non dedicated-facilities (PROC8a)

PROC8a	Transfer of substance or mixture (charging and discharging) at non-dedicated facilities
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Product (article) characteristics

Physical form of product	Liquid
Concentration of substance in product	≤ 100 %
Other product characteristics	Ester [PrC4]

Amount used (or contained in articles), frequency and duration of use/exposure

Exposure duration	≤ 1 h/day
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Methyl acrylate

Annex to the safety data sheet: Exposure scenario

CAS-No.: 96-33-3 Product form: Substance Physical state: Liquid Substance type: Mono-constituent

Technical and organisational conditions and measures

Provide a good standard of general ventilation (not less than 3 to 5 air changes per hour) [E11]	Effectiveness. Inhalation. 30%
Local exhaust ventilation	Effectiveness. Inhalation. 90%. Dermal. 0%
Occupational health and safety management system: advanced	

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

Wear respiratory protection. Approved respirator. Assigned Protection Factor (APF) of 10	Effectiveness. Inhalation. 90%
Wear chemically resistant gloves (tested to EN374) in combination with 'basic' employee training [PPE16]	
Use suitable eye/skin protection	Effectiveness. Dermal. 90%
Avoid direct eye contact with product, also via contamination on hands [E73]	
Avoid direct skin contact with product. Identify potential areas for indirect skin contact. Wear gloves (tested to EN374) if hand contact with substance likely. Clean up contamination/spills as soon as they occur. Wash off any skin contamination immediately. Provide basic employee training to prevent / minimise exposures and to report any skin problems that may develop [E3]	
Where there is a possibility of contact, wear protective clothing, including gloves. Chemical resistant apron. Goggles + face shield	
Therefore the conclusion is that eye and skin irritation and dermal sensitisation are prevented.	

Other conditions affecting workers exposure

Assumes a good basic standard of occupational hygiene is implemented [G1]	
Indoor use [OOC2]	
Temperature, °C	≤ 40

2.2.8. Control of worker exposure: Process sampling (PROC8b)

PROC8b	Transfer of substance or mixture (charging and discharging) at dedicated facilities
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Product (article) characteristics

Physical form of product	Liquid
Concentration of substance in product	≤ 100 %
Other product characteristics	Ester [PrC4]

Amount used (or contained in articles), frequency and duration of use/exposure

Exposure duration	≤ 4 h/day
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Technical and organisational conditions and measures

Provide a good standard of general ventilation (not less than 3 to 5 air changes per hour) [E11]	Effectiveness. Inhalation. 30%
Local exhaust ventilation. Ensure material transfers are under containment or extract ventilation [E66]	Effectiveness. Inhalation. 90%. Dermal. 0%
Occupational health and safety management system: advanced	

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

Respiratory protection. None	Effectiveness. Inhalation. 0%
Wear chemically resistant gloves (tested to EN374) in combination with 'basic' employee training [PPE16]	

Methyl acrylate

Annex to the safety data sheet: Exposure scenario

CAS-No.: 96-33-3 Product form: Substance Physical state: Liquid Substance type: Mono-constituent

Use suitable eye/skin protection	Effectiveness. Dermal. 80%
Avoid direct eye contact with product, also via contamination on hands [E73]	
Avoid direct skin contact with product. Identify potential areas for indirect skin contact. Wear gloves (tested to EN374) if hand contact with substance likely. Clean up contamination/spills as soon as they occur. Wash off any skin contamination immediately. Provide basic employee training to prevent / minimise exposures and to report any skin problems that may develop [E3]	
Where there is a possibility of contact, wear protective clothing, including gloves. Chemical resistant apron. Goggles + face shield	
Therefore the conclusion is that eye and skin irritation and dermal sensitisation are prevented.	

Other conditions affecting workers exposure

Assumes a good basic standard of occupational hygiene is implemented [G1]	
Indoor use [OOC2]	
Temperature, °C	≤ 40

2.2.9. Control of worker exposure: Bulk transfers. Closed systems (PROC8b)

PROC8b	Transfer of substance or mixture (charging and discharging) at dedicated facilities
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Product (article) characteristics

Physical form of product	Liquid
Concentration of substance in product	≤ 100 %
Other product characteristics	Ester [PrC4I]

Amount used (or contained in articles), frequency and duration of use/exposure

Exposure duration	≤ 4 h/day
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Technical and organisational conditions and measures

Provide a good standard of general ventilation (not less than 3 to 5 air changes per hour) [E11]	Effectiveness. Inhalation. 30%
Local exhaust ventilation. Ensure material transfers are under containment or extract ventilation [E66]	Effectiveness. Inhalation. 90%. Dermal. 0%
Occupational health and safety management system: advanced	

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

Respiratory protection. None	Effectiveness. Inhalation. 0%
Wear chemically resistant gloves (tested to EN374) in combination with 'basic' employee training [PPE16]	
Use suitable eye/skin protection	Effectiveness. Dermal. 80%
Avoid direct eye contact with product, also via contamination on hands [E73]	
Avoid direct skin contact with product. Identify potential areas for indirect skin contact. Wear gloves (tested to EN374) if hand contact with substance likely. Clean up contamination/spills as soon as they occur. Wash off any skin contamination immediately. Provide basic employee training to prevent / minimise exposures and to report any skin problems that may develop [E3]	
Where there is a possibility of contact, wear protective clothing, including gloves. Chemical resistant apron. Goggles + face shield	
Therefore the conclusion is that eye and skin irritation and dermal sensitisation are prevented.	

Methyl acrylate

Annex to the safety data sheet: Exposure scenario

CAS-No.: 96-33-3 Product form: Substance Physical state: Liquid Substance type: Mono-constituent

Other conditions affecting workers exposure

Assumes a good basic standard of occupational hygiene is implemented [G1]	
Indoor use [OOC2]	
Temperature, °C	≤ 40

2.2.10. Control of worker exposure: Bulk transfers.Open systems (PROC8b)

PROC8b	Transfer of substance or mixture (charging and discharging) at dedicated facilities
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Product (article) characteristics

Physical form of product	Liquid
Concentration of substance in product	≤ 100 %
Other product characteristics	Ester [PrC4]

Amount used (or contained in articles), frequency and duration of use/exposure

Exposure duration	≤ 4 h/day
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Technical and organisational conditions and measures

Local exhaust ventilation. Ensure material transfers are under containment or extract ventilation [E66]	Effectiveness. Inhalation. 95%. Dermal. 0%
Provide a good standard of general ventilation (not less than 3 to 5 air changes per hour) [E11]	Effectiveness. Inhalation. 30%
Occupational health and safety management system: advanced	

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

Respiratory protection. None	Effectiveness. Inhalation. 0%
Wear chemically resistant gloves (tested to EN374) in combination with 'basic' employee training [PPE16]	
Use suitable eye/skin protection	Effectiveness. Dermal. 80%
Avoid direct eye contact with product, also via contamination on hands [E73]	
Avoid direct skin contact with product. Identify potential areas for indirect skin contact. Wear gloves (tested to EN374) if hand contact with substance likely. Clean up contamination/spills as soon as they occur. Wash off any skin contamination immediately. Provide basic employee training to prevent / minimise exposures and to report any skin problems that may develop [E3]	
Where there is a possibility of contact, wear protective clothing, including gloves. Chemical resistant apron. Goggles + face shield	
Therefore the conclusion is that eye and skin irritation and dermal sensitisation are prevented.	

Other conditions affecting workers exposure

Assumes a good basic standard of occupational hygiene is implemented [G1]	
Indoor use [OOC2]	
Temperature, °C	≤ 40

2.2.11. Control of worker exposure: Laboratory activities (PROC15)

PROC15	Use as laboratory reagent
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Product (article) characteristics

Physical form of product	Liquid
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Methyl acrylate

Annex to the safety data sheet: Exposure scenario

CAS-No.: 96-33-3 Product form: Substance Physical state: Liquid Substance type: Mono-constituent

Concentration of substance in product	≤ 100 %
Other product characteristics	Ester [PrC4]

Amount used (or contained in articles), frequency and duration of use/exposure

Exposure duration	≤ 4 h/day
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Technical and organisational conditions and measures

Local exhaust ventilation. Handle within a fume cupboard or implement suitable equivalent methods to minimise exposure [E12]	Effectiveness. Inhalation. 90%. Dermal. 0%
Provide a basic standard of general ventilation (1 to 3 air changes per hour).	Effectiveness. Inhalation. 70%
Occupational health and safety management system: advanced	

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

Respiratory protection. None	Effectiveness. Inhalation. 0%
Wear chemically resistant gloves (tested to EN374) in combination with 'basic' employee training [PPE16]	
Use suitable eye/skin protection	Effectiveness. Dermal. 90%
Avoid direct eye contact with product, also via contamination on hands [E73]	
Avoid direct skin contact with product. Identify potential areas for indirect skin contact. Wear gloves (tested to EN374) if hand contact with substance likely. Clean up contamination/spills as soon as they occur. Wash off any skin contamination immediately. Provide basic employee training to prevent / minimise exposures and to report any skin problems that may develop [E3]	
Where there is a possibility of contact, wear protective clothing, including gloves. Chemical resistant apron. Goggles + face shield	
Therefore the conclusion is that eye and skin irritation and dermal sensitisation are prevented.	

Other conditions affecting workers exposure

Assumes a good basic standard of occupational hygiene is implemented [G1]	
Indoor use [OOC2]	
Temperature, °C	≤ 40

2.2.12. Control of worker exposure: Storage (PROC1)

PROC1	Chemical production or refinery in closed process without likelihood of exposure or processes with equivalent containment conditions
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Product (article) characteristics

Physical form of product	Liquid
Concentration of substance in product	≤ 100 %
Other product characteristics	Ester [PrC4]

Amount used (or contained in articles), frequency and duration of use/exposure

Exposure duration	≤ 8 h/day
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Technical and organisational conditions and measures

Local exhaust ventilation. None	Effectiveness. Inhalation. 0%. Dermal. 0%
Provide a basic standard of general ventilation (1 to 3 air changes per hour).	Effectiveness. Inhalation. 0%

Methyl acrylate

Annex to the safety data sheet: Exposure scenario

CAS-No.: 96-33-3 Product form: Substance Physical state: Liquid Substance type: Mono-constituent

Occupational health and safety management system: advanced	
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Conditions and measures related to personal protection, hygiene and health evaluation

Respiratory protection. None	Effectiveness. Inhalation. 0%
Wear chemically resistant gloves (tested to EN374) in combination with 'basic' employee training [PPE16]	
Use suitable eye/skin protection	Effectiveness. Dermal. 90%
Avoid direct eye contact with product, also via contamination on hands [E73]	
Avoid direct skin contact with product. Identify potential areas for indirect skin contact. Wear gloves (tested to EN374) if hand contact with substance likely. Clean up contamination/spills as soon as they occur. Wash off any skin contamination immediately. Provide basic employee training to prevent / minimise exposures and to report any skin problems that may develop [E3]	
Where there is a possibility of contact, wear protective clothing, including gloves. Chemical resistant apron. Goggles + face shield	
Therefore the conclusion is that eye and skin irritation and dermal sensitisation are prevented.	

Other conditions affecting workers exposure

Chemical production or refinery in closed process without likelihood of exposure or processes with equivalent containment conditions	
Assumes a good basic standard of occupational hygiene is implemented [G1]	
Indoor use [OOC2]	
Temperature, °C	≤ 40

2.2.13. Control of worker exposure: Storage (PROC2)

PROC2	Chemical production or refinery in closed continuous process with occasional controlled exposure or processes with equivalent containment conditions
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Product (article) characteristics

Physical form of product	Liquid
Concentration of substance in product	≤ 100 %
Other product characteristics	Ester [PrC4]

Amount used (or contained in articles), frequency and duration of use/exposure

Exposure duration	≤ 1 h/day
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Technical and organisational conditions and measures

Local exhaust ventilation. None	Effectiveness. Inhalation. 0%. Dermal. 0%
Provide a basic standard of general ventilation (1 to 3 air changes per hour).	Effectiveness. Inhalation. 0%
Occupational health and safety management system: advanced	

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

Respiratory protection. None	Effectiveness. Inhalation. 0%
Wear chemically resistant gloves (tested to EN374) in combination with 'basic' employee training [PPE16]	
Use suitable eye/skin protection	Effectiveness. Dermal. 90%
Avoid direct eye contact with product, also via contamination on hands [E73]	

Methyl acrylate

Annex to the safety data sheet: Exposure scenario

CAS-No.: 96-33-3 Product form: Substance Physical state: Liquid Substance type: Mono-constituent

Avoid direct skin contact with product. Identify potential areas for indirect skin contact. Wear gloves (tested to EN374) if hand contact with substance likely. Clean up contamination/spills as soon as they occur. Wash off any skin contamination immediately. Provide basic employee training to prevent / minimise exposures and to report any skin problems that may develop [E3]	
Where there is a possibility of contact, wear protective clothing, including gloves. Chemical resistant apron. Goggles + face shield	
Therefore the conclusion is that eye and skin irritation and dermal sensitisation are prevented.	

Other conditions affecting workers exposure

Assumes a good basic standard of occupational hygiene is implemented [G1]	
Use in closed, continuous process with occasional controlled exposure	
Indoor use [OOC2]	
Temperature, °C	≤ 40

2.3. Exposure estimation and reference to its source

2.3.1. Environmental release and exposure Use of intermediate (ERC6a)

Information for contributing exposure scenario

Release route		Release rate		Release estimation method	
Indoor use [OOC2]					
Protection target	Exposure estimation	PNEC	RCR	Assessment method	
Freshwater	0.00041 mg/l	0.003 mg/l	0.151	EUSES v2.1.2	
Marine water	0.0000529 mg/l	0 mg/l	0.196	EUSES v2.1.2	
Freshwater sediment	1.74 µg/kg dw	0.011 mg/kg dwt	0.151	EUSES v2.1.2	
Marine water sediment	0.224 µg/kg dw	0.011 mg/kg dwt	0.019	EUSES v2.1.2	
Sewage treatment plant	0.00323 mg/l	10 mg/l	< 0.01	EUSES v2.1.2	
Soil	13 µg/kg dw	1 mg/kg dwt	0.013	EUSES v2.1.2	
Release estimation	Water	0.054 kg/day			
Release estimation	Air	650 kg/day			

Methyl acrylate

Annex to the safety data sheet: Exposure scenario

CAS-No.: 96-33-3 Product form: Substance Physical state: Liquid Substance type: Mono-constituent

Release estimation	The removal in the modelled biological STP is not accounted for		
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2.3.2. Worker exposure General exposures (closed systems) (PROC1)

Information for contributing exposure scenario			
Route of exposure and type of effects	Exposure estimate	RCR	Method
Acute - Local - Dermal	0.000992 mg/m ³	< 0.01	ECETOC TRA worker v2.0
Long term - Local - Inhalation	0.036 mg/m ³	< 0.01	ECETOC TRA worker v2.0

2.3.3. Worker exposure General exposures (closed systems) (PROC2)

Information for contributing exposure scenario			
Route of exposure and type of effects	Exposure estimate	RCR	Method
Acute - Local - Dermal	0.02 mg/m ³	0.041	ECETOC TRA worker v2.0
Long term - Local - Inhalation	8.968 mg/m ³	0.498	ECETOC TRA worker v2.0

2.3.4. Worker exposure Manufacture or formulation in the chemical industry in closed batch processes with occasional controlled exposure or processes with equivalent containment condition (PROC3)

Information for contributing exposure scenario			
Route of exposure and type of effects	Exposure estimate	RCR	Method
Acute - Local - Dermal	0.02 mg/m ³	0.041	ECETOC TRA worker v2.0
Long term - Local - Inhalation	12.55 mg/m ³	0.698	ECETOC TRA worker v2.0

2.3.5. Worker exposure Chemical production where opportunity for exposure arises (PROC4)

Information for contributing exposure scenario			
Route of exposure and type of effects	Exposure estimate	RCR	Method
Acute - Local - Dermal	0.1 mg/m ³	0.204	ECETOC TRA worker v2.0
Long term - Local - Inhalation	10.76 mg/m ³	0.598	ECETOC TRA worker v2.0

2.3.6. Worker exposure Equipment cleaning and maintenance (PROC8a, PROC28)

Information for contributing exposure scenario			
Route of exposure and type of effects	Exposure estimate	RCR	Method
Acute - Local - Dermal	0.04 mg/m ³	0.082	ECETOC TRA worker v2.0
Long term - Local - Inhalation	12.55 mg/m ³	0.698	ECETOC TRA worker v2.0

2.3.7. Worker exposure Transfer of substance or mixture (charging/discharging) at non dedicated-facilities (PROC8a)

Information for contributing exposure scenario			
Route of exposure and type of effects	Exposure estimate	RCR	Method
Acute - Local - Dermal	0.02 mg/m ³	0.041	ECETOC TRA worker v2.0
Long term - Local - Inhalation	12.55 mg/m ³	0.698	ECETOC TRA worker v2.0

2.3.8. Worker exposure Process sampling (PROC8b)

Information for contributing exposure scenario			
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Methyl acrylate

Annex to the safety data sheet: Exposure scenario

CAS-No.: 96-33-3 Product form: Substance Physical state: Liquid Substance type: Mono-constituent

Route of exposure and type of effects	Exposure estimate	RCR	Method
Acute - Local - Dermal	0.12 mg/m ³	0.245	ECETOC TRA worker v2.0
Long term - Local - Inhalation	11.3 mg/m ³	0.628	ECETOC TRA worker v2.0

2.3.9. Worker exposure Bulk transfers. Closed systems (PROC8b)

Information for contributing exposure scenario

Route of exposure and type of effects	Exposure estimate	RCR	Method
Acute - Local - Dermal	0.12 mg/m ³	0.245	ECETOC TRA worker v2.0
Long term - Local - Inhalation	11.3 mg/m ³	0.628	ECETOC TRA worker v2.0

2.3.10. Worker exposure Bulk transfers. Open systems (PROC8b)

Information for contributing exposure scenario

Route of exposure and type of effects	Exposure estimate	RCR	Method
Acute - Local - Dermal	0.12 mg/m ³	0.245	ECETOC TRA worker v2.0
Long term - Local - Inhalation	11.3 mg/m ³	0.628	ECETOC TRA worker v2.0

2.3.11. Worker exposure Laboratory activities (PROC15)

Information for contributing exposure scenario

Route of exposure and type of effects	Exposure estimate	RCR	Method
Acute - Local - Dermal	0.00595 mg/m ³	0.012	ECETOC TRA worker v2.0
Long term - Local - Inhalation	10.76 mg/m ³	0.598	ECETOC TRA worker v2.0

2.3.12. Worker exposure Storage (PROC1)

Information for contributing exposure scenario

Route of exposure and type of effects	Exposure estimate	RCR	Method
Acute - Local - Dermal	0.000992 mg/m ³	< 0.01	ECETOC TRA worker v2.0
Long term - Local - Inhalation	0.036 mg/m ³	< 0.01	ECETOC TRA worker v2.0

2.3.13. Worker exposure Storage (PROC2)

Information for contributing exposure scenario

Route of exposure and type of effects	Exposure estimate	RCR	Method
Acute - Local - Dermal	0.004 mg/m ³	< 0.01	ECETOC TRA worker v2.0
Long term - Local - Inhalation	17.94 mg/m ³	0.996	ECETOC TRA worker v2.0

2.4. Guidance to Downstream User to evaluate whether he works inside the boundaries set by the ES

2.4.1. Environment

No data available

2.4.2. Health

No data available

Methyl acrylate

Annex to the safety data sheet: Exposure scenario

CAS-No.: 96-33-3 Product form: Substance Physical state: Liquid Substance type: Mono-constituent

3. IW-3 - Industrial, Manufacture; Polymer production, industrial; Downstream user sites

3.1. Title section

Polymer production, industrial; Downstream user sites

ES Ref.: IW-3
ES Type: Worker
Revision date: 26/05/2020

Company ES code: MA-PD
Association ref code: IW-3

Environment	Use descriptors
CS 1	Use in polymer production ERC6c

Worker	Use descriptors
CS 2	Chemical production or refinery in closed process without likelihood of exposure or processes with equivalent containment conditions PROC1
CS 3	Chemical production or refinery in closed continuous process with occasional controlled exposure or processes with equivalent containment conditions PROC2
CS 4	Manufacture or formulation in the chemical industry in closed batch processes with occasional controlled exposure or processes with equivalent containment condition; Indoor use PROC3
CS 5	Chemical production where opportunity for exposure arises PROC4
CS 6	Transfer of substance or mixture (charging/discharging) at non dedicated-facilities; Drum/batch transfers PROC8a
CS 7	Transfer of substance or mixture (charging/discharging) at non dedicated-facilities; Equipment cleaning and maintenance PROC8a, PROC28
CS 8	Transfer of substance or mixture (charging/discharging) at dedicated facilities PROC8b
CS 9	Transfer of substance or mixture into small containers (dedicated filling line, including weighing) PROC9
CS 10	Storage PROC1
CS 11	Storage PROC2

Processes, tasks, activities covered	Use of monomer in polymerisation processes at industrial site (inclusion or not into/onto article)
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3.2. Conditions of use affecting exposure

3.2.1. Control of environmental exposure: Use in polymer production (ERC6c)

ERC6c	Use of monomer in polymerisation processes at industrial site (inclusion or not into/onto article)
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Methyl acrylate

Annex to the safety data sheet: Exposure scenario

CAS-No.: 96-33-3 Product form: Substance Physical state: Liquid Substance type: Mono-constituent

Assessment method	EUSES [EE4]
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Product (article) characteristics	
Physical form of product	Liquid
Concentration of substance in product	≤ 100 %
Other product characteristics	Ester [PrC4]

Amount used, frequency and duration of use (or from service life)	
Annual site tonnage [A5]	87600 t/yr
Fraction of EU tonnage used in region: [A1]	0.2 %
Daily amount per site	292 t/d
Emission days [FD4]	300 days/yr

Technical and organisational conditions and measures	
Typical measures to maintain workplace concentrations of airborne VOCs and particulates below respective OELs: e.g. thermal wet scrubber – gas removal and/or air filtration – particle removal and/or thermal oxidation and/or vapour recovery – adsorption.	
No release to wastewater from process as such, wastewater emissions limited to release generated from final equipment cleaning step using water	
Process optimized for efficient use of raw materials [OOC16]	
Acclimated biological treatment	Effectiveness. Water. 96,3%. Readily biodegradable [PrC5a]

Conditions and measures related to sewage treatment plant	
Release rate	≥ 2000 m ³ /d
Biological treatment. Standard	88.03 % Effectiveness. Water
Controlled application of sewage sludge to agricultural soil	

Conditions and measures related to treatment of waste (including article waste)	
External treatment and disposal of waste should comply with applicable local and/or national regulations [ETW3]	
External recovery and recycling of waste should comply with applicable local and/or national regulations [ERW1]	

3.2.2. Control of worker exposure: Chemical production or refinery in closed process without likelihood of exposure or processes with equivalent containment conditions (PROC1)

PROC1	Chemical production or refinery in closed process without likelihood of exposure or processes with equivalent containment conditions
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Product (article) characteristics	
Physical form of product	Liquid
Concentration of substance in product	≤ 100 %
Other product characteristics	Ester [PrC4]

Amount used (or contained in articles), frequency and duration of use/exposure	
Exposure duration	≤ 8 h/day

Methyl acrylate

Annex to the safety data sheet: Exposure scenario

CAS-No.: 96-33-3 Product form: Substance Physical state: Liquid Substance type: Mono-constituent

Technical and organisational conditions and measures

Local exhaust ventilation. None	Effectiveness. Inhalation. 0%. Dermal. 0%
Provide a basic standard of general ventilation (1 to 3 air changes per hour).	Effectiveness. Inhalation. 0%
Occupational health and safety management system: advanced	

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

Respiratory protection. None	Effectiveness. Inhalation. 0%
Wear chemically resistant gloves (tested to EN374) in combination with 'basic' employee training [PPE16]	
Use suitable eye/skin protection	Effectiveness. Dermal. 90%
Avoid direct eye contact with product, also via contamination on hands [E73]	
Avoid direct skin contact with product. Identify potential areas for indirect skin contact. Wear gloves (tested to EN374) if hand contact with substance likely. Clean up contamination/spills as soon as they occur. Wash off any skin contamination immediately. Provide basic employee training to prevent / minimise exposures and to report any skin problems that may develop [E3]	
Where there is a possibility of contact, wear protective clothing, including gloves. Chemical resistant apron. Goggles + face shield	
Therefore the conclusion is that eye and skin irritation and dermal sensitisation are prevented.	

Other conditions affecting workers exposure

Assumes a good basic standard of occupational hygiene is implemented [G1]	
Indoor use [OOC2]	
Temperature, °C	≤ 40

3.2.3. Control of worker exposure: Chemical production or refinery in closed continuous process with occasional controlled exposure or processes with equivalent containment conditions (PROC2)

PROC2	Chemical production or refinery in closed continuous process with occasional controlled exposure or processes with equivalent containment conditions
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Product (article) characteristics

Physical form of product	Liquid
Concentration of substance in product	≤ 100 %
Other product characteristics	Ester [PrC4]

Amount used (or contained in articles), frequency and duration of use/exposure

Exposure duration	≤ 8 h/day
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Technical and organisational conditions and measures

Local exhaust ventilation	Effectiveness. Inhalation. 90%. Dermal. 0%
Provide a basic standard of general ventilation (1 to 3 air changes per hour).	Effectiveness. Inhalation. 0%
Occupational health and safety management system: advanced	

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

Respiratory protection. None	Effectiveness. Inhalation. 0%
Wear chemically resistant gloves (tested to EN374) in combination with 'basic' employee training [PPE16]	

Methyl acrylate

Annex to the safety data sheet: Exposure scenario

CAS-No.: 96-33-3 Product form: Substance Physical state: Liquid Substance type: Mono-constituent

Use suitable eye/skin protection	Effectiveness. Dermal. 90%
Avoid direct eye contact with product, also via contamination on hands [E73]	
Avoid direct skin contact with product. Identify potential areas for indirect skin contact. Wear gloves (tested to EN374) if hand contact with substance likely. Clean up contamination/spills as soon as they occur. Wash off any skin contamination immediately. Provide basic employee training to prevent / minimise exposures and to report any skin problems that may develop [E3]	
Where there is a possibility of contact, wear protective clothing, including gloves. Chemical resistant apron. Goggles + face shield	
Therefore the conclusion is that eye and skin irritation and dermal sensitisation are prevented.	

Other conditions affecting workers exposure

Assumes a good basic standard of occupational hygiene is implemented [G1]	
Indoor use [OOC2]	
Temperature, °C	≤ 40

3.2.4. Control of worker exposure: Manufacture or formulation in the chemical industry in closed batch processes with occasional controlled exposure or processes with equivalent containment condition; Indoor use (PROC3)

PROC3	Manufacture or formulation in the chemical industry in closed batch processes with occasional controlled exposure or processes with equivalent containment condition
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Product (article) characteristics

Physical form of product	Liquid
Concentration of substance in product	≤ 100 %
Other product characteristics	Ester [PrC4]

Amount used (or contained in articles), frequency and duration of use/exposure

Exposure duration	≤ 8 h/day
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Technical and organisational conditions and measures

Local exhaust ventilation	Effectiveness. Inhalation. 90%. Dermal. 0%
Provide a good standard of general ventilation (not less than 3 to 5 air changes per hour) [E11]	Effectiveness. Inhalation. 30%
Occupational health and safety management system: advanced	

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

Respiratory protection. None	Effectiveness. Inhalation. 0%
Wear chemically resistant gloves (tested to EN374) in combination with 'basic' employee training [PPE16]	
Use suitable eye/skin protection	Effectiveness. Dermal. 90%
Avoid direct eye contact with product, also via contamination on hands [E73]	
Avoid direct skin contact with product. Identify potential areas for indirect skin contact. Wear gloves (tested to EN374) if hand contact with substance likely. Clean up contamination/spills as soon as they occur. Wash off any skin contamination immediately. Provide basic employee training to prevent / minimise exposures and to report any skin problems that may develop [E3]	
Where there is a possibility of contact, wear protective clothing, including gloves. Chemical resistant apron. Goggles + face shield	
Therefore the conclusion is that eye and skin irritation and dermal sensitisation are prevented.	

Methyl acrylate

Annex to the safety data sheet: Exposure scenario

CAS-No.: 96-33-3 Product form: Substance Physical state: Liquid Substance type: Mono-constituent

Other conditions affecting workers exposure

Assumes a good basic standard of occupational hygiene is implemented [G1]	
Indoor use [OOC2]	
Temperature, °C	≤ 40

3.2.5. Control of worker exposure: Chemical production where opportunity for exposure arises (PROC4)

PROC4	Chemical production where opportunity for exposure arises
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Product (article) characteristics

Physical form of product	Liquid
Concentration of substance in product	≤ 100 %
Other product characteristics	Ester [PrC4]

Amount used (or contained in articles), frequency and duration of use/exposure

Exposure duration	≤ 8 h/day
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Technical and organisational conditions and measures

Local exhaust ventilation	Effectiveness. Inhalation. 90%. Dermal. 0%
Provide enhanced general ventilation (5 to 10 air changes per hour)	Effectiveness. Inhalation. 70%
Occupational health and safety management system: advanced	

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

Respiratory protection. None	Effectiveness. Inhalation. 0%
Wear chemically resistant gloves (tested to EN374) in combination with 'basic' employee training [PPE16]	
Use suitable eye/skin protection	Effectiveness. Dermal. 90%
Avoid direct eye contact with product, also via contamination on hands [E73]	
Avoid direct skin contact with product. Identify potential areas for indirect skin contact. Wear gloves (tested to EN374) if hand contact with substance likely. Clean up contamination/spills as soon as they occur. Wash off any skin contamination immediately. Provide basic employee training to prevent / minimise exposures and to report any skin problems that may develop [E3]	
Where there is a possibility of contact, wear protective clothing, including gloves. Chemical resistant apron. Goggles + face shield	
Therefore the conclusion is that eye and skin irritation and dermal sensitisation are prevented.	

Other conditions affecting workers exposure

Assumes a good basic standard of occupational hygiene is implemented [G1]	
Indoor use [OOC2]	
Temperature, °C	≤ 40

3.2.6. Control of worker exposure: Transfer of substance or mixture (charging/discharging) at non dedicated-facilities; Drum/batch transfers (PROC8a)

PROC8a	Transfer of substance or mixture (charging and discharging) at non-dedicated facilities
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Product (article) characteristics

Physical form of product	Liquid
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Methyl acrylate

Annex to the safety data sheet: Exposure scenario

CAS-No.: 96-33-3 Product form: Substance Physical state: Liquid Substance type: Mono-constituent

Concentration of substance in product	≤ 100 %
Other product characteristics	Ester [PrC4]

Amount used (or contained in articles), frequency and duration of use/exposure

Exposure duration	≤ 1 h/day
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Technical and organisational conditions and measures

Local exhaust ventilation	Effectiveness. Inhalation. 90%. Dermal. 0%
Provide a good standard of general ventilation (not less than 3 to 5 air changes per hour) [E11]	Effectiveness. Inhalation. 30%
Occupational health and safety management system: advanced	

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

Respiratory protection. None	Effectiveness. Inhalation. 0%
Wear chemically resistant gloves (tested to EN374) in combination with 'basic' employee training [PPE16]	
Use suitable eye/skin protection	Effectiveness. Dermal. 90%
Avoid direct eye contact with product, also via contamination on hands [E73]	
Avoid direct skin contact with product. Identify potential areas for indirect skin contact. Wear gloves (tested to EN374) if hand contact with substance likely. Clean up contamination/spills as soon as they occur. Wash off any skin contamination immediately. Provide basic employee training to prevent / minimise exposures and to report any skin problems that may develop [E3]	
Where there is a possibility of contact, wear protective clothing, including gloves. Chemical resistant apron. Goggles + face shield	
Therefore the conclusion is that eye and skin irritation and dermal sensitisation are prevented.	

Other conditions affecting workers exposure

Assumes a good basic standard of occupational hygiene is implemented [G1]	
Indoor use [OOC2]	
Temperature, °C	≤ 40

3.2.7. Control of worker exposure: Transfer of substance or mixture (charging/discharging) at non dedicated-facilities; Equipment cleaning and maintenance (PROC8a, PROC28)

PROC8a	Transfer of substance or mixture (charging and discharging) at non-dedicated facilities
PROC28	Manual maintenance (cleaning and repair) of machinery

Product (article) characteristics

Physical form of product	Liquid
Concentration of substance in product	≤ 100 %
Other product characteristics	Ester [PrC4]

Amount used (or contained in articles), frequency and duration of use/exposure

Exposure duration	≤ 1 h/day
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Technical and organisational conditions and measures

Provide a basic standard of general ventilation (1 to 3 air changes per hour).	Effectiveness. Inhalation. 0%
Local exhaust ventilation. None	Effectiveness. Inhalation. 0%. Dermal. 0%

Methyl acrylate

Annex to the safety data sheet: Exposure scenario

CAS-No.: 96-33-3 Product form: Substance Physical state: Liquid Substance type: Mono-constituent

Occupational health and safety management system: advanced

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

Wear respiratory protection. Approved respirator. Assigned Protection Factor (APF) of 10 Effectiveness. Inhalation. 90%

Wear chemically resistant gloves (tested to EN374) in combination with 'basic' employee training [PPE16]

Use suitable eye/skin protection Effectiveness. Dermal. 90%

Avoid direct eye contact with product, also via contamination on hands [E73]

Avoid direct skin contact with product. Identify potential areas for indirect skin contact. Wear gloves (tested to EN374) if hand contact with substance likely. Clean up contamination/spills as soon as they occur. Wash off any skin contamination immediately. Provide basic employee training to prevent / minimise exposures and to report any skin problems that may develop [E3]

Where there is a possibility of contact, wear protective clothing, including gloves. Chemical resistant apron. Goggles + face shield

Therefore the conclusion is that eye and skin irritation and dermal sensitisation are prevented.

Other conditions affecting workers exposure

Assumes a good basic standard of occupational hygiene is implemented [G1]

Indoor use [OOC2]

Temperature, °C ≤ 40

3.2.8. Control of worker exposure: Transfer of substance or mixture (charging/discharging) at dedicated facilities (PROC8b)

PROC8b Transfer of substance or mixture (charging and discharging) at dedicated facilities

Product (article) characteristics

Physical form of product Liquid

Concentration of substance in product ≤ 100 %

Other product characteristics Ester [PrC4]

Amount used (or contained in articles), frequency and duration of use/exposure

Exposure duration ≤ 4 h/day

Technical and organisational conditions and measures

Local exhaust ventilation Effectiveness. Inhalation. 95%. Dermal. 0%

Provide a good standard of general ventilation (not less than 3 to 5 air changes per hour) [E11] Effectiveness. Inhalation. 30%

Occupational health and safety management system: advanced

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

Respiratory protection. None Effectiveness. Inhalation. 0%

Wear chemically resistant gloves (tested to EN374) in combination with 'basic' employee training [PPE16]

Use suitable eye/skin protection Effectiveness. Dermal. 90%

Avoid direct eye contact with product, also via contamination on hands [E73]

Avoid direct skin contact with product. Identify potential areas for indirect skin contact. Wear gloves (tested to EN374) if hand contact with substance likely. Clean up contamination/spills as soon as they occur. Wash off any skin contamination immediately. Provide basic employee training to prevent / minimise exposures and to report any skin problems that may develop [E3]

Methyl acrylate

Annex to the safety data sheet: Exposure scenario

CAS-No.: 96-33-3 Product form: Substance Physical state: Liquid Substance type: Mono-constituent

Where there is a possibility of contact, wear protective clothing, including gloves. Chemical resistant apron. Goggles + face shield

Therefore the conclusion is that eye and skin irritation and dermal sensitisation are prevented.

Other conditions affecting workers exposure

Assumes a good basic standard of occupational hygiene is implemented [G1]

Indoor use [OOC2]

Temperature, °C

≤ 40

3.2.9. Control of worker exposure: Transfer of substance or mixture into small containers (dedicated filling line, including weighing) (PROC9)

PROC9

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

Product (article) characteristics

Physical form of product

Liquid

Concentration of substance in product

≤ 100 %

Other product characteristics

Ester [PrC4]

Amount used (or contained in articles), frequency and duration of use/exposure

Exposure duration

≤ 1 h/day

Technical and organisational conditions and measures

Local exhaust ventilation

Effectiveness. Inhalation. 90%. Dermal. 0%

Provide a good standard of general ventilation (not less than 3 to 5 air changes per hour) [E11]

Effectiveness. Inhalation. 30%

Occupational health and safety management system: advanced

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

Respiratory protection. None

Effectiveness. Inhalation. 0%

Wear chemically resistant gloves (tested to EN374) in combination with 'basic' employee training [PPE16]

Use suitable eye/skin protection

Effectiveness. Dermal. 90%

Avoid direct eye contact with product, also via contamination on hands [E73]

Avoid direct skin contact with product. Identify potential areas for indirect skin contact. Wear gloves (tested to EN374) if hand contact with substance likely. Clean up contamination/spills as soon as they occur. Wash off any skin contamination immediately. Provide basic employee training to prevent / minimise exposures and to report any skin problems that may develop [E3]

Where there is a possibility of contact, wear protective clothing, including gloves. Chemical resistant apron. Goggles + face shield

Therefore the conclusion is that eye and skin irritation and dermal sensitisation are prevented.

Other conditions affecting workers exposure

Assumes a good basic standard of occupational hygiene is implemented [G1]

Indoor use [OOC2]

Temperature, °C

≤ 40

Methyl acrylate

Annex to the safety data sheet: Exposure scenario

CAS-No.: 96-33-3 Product form: Substance Physical state: Liquid Substance type: Mono-constituent

3.2.10. Control of worker exposure: Storage (PROC1)

PROC1	Chemical production or refinery in closed process without likelihood of exposure or processes with equivalent containment conditions
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Product (article) characteristics

Physical form of product	Liquid
Concentration of substance in product	≤ 100 %
Other product characteristics	Ester [PrC4]

Amount used (or contained in articles), frequency and duration of use/exposure

Exposure duration	≤ 8 h/day
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Technical and organisational conditions and measures

Local exhaust ventilation. None	Effectiveness. Inhalation. 0%. Dermal. 0%
Provide a basic standard of general ventilation (1 to 3 air changes per hour).	Effectiveness. Inhalation. 0%
Occupational health and safety management system: advanced	

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

Respiratory protection. None	Effectiveness. Inhalation. 0%
Wear chemically resistant gloves (tested to EN374) in combination with 'basic' employee training [PPE16]	
Use suitable eye/skin protection	Effectiveness. Dermal. 90%
Avoid direct eye contact with product, also via contamination on hands [E73]	
Avoid direct skin contact with product. Identify potential areas for indirect skin contact. Wear gloves (tested to EN374) if hand contact with substance likely. Clean up contamination/spills as soon as they occur. Wash off any skin contamination immediately. Provide basic employee training to prevent / minimise exposures and to report any skin problems that may develop [E3]	
Where there is a possibility of contact, wear protective clothing, including gloves. Chemical resistant apron. Goggles + face shield	
Therefore the conclusion is that eye and skin irritation and dermal sensitisation are prevented.	

Other conditions affecting workers exposure

Assumes a good basic standard of occupational hygiene is implemented [G1]	
Indoor use [OOC2]	
Temperature, °C	≤ 40

3.2.11. Control of worker exposure: Storage (PROC2)

PROC2	Chemical production or refinery in closed continuous process with occasional controlled exposure or processes with equivalent containment conditions
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Product (article) characteristics

Physical form of product	Liquid
Concentration of substance in product	≤ 100 %
Other product characteristics	Ester [PrC4]

Amount used (or contained in articles), frequency and duration of use/exposure

Exposure duration	≤ 8 h/day
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Methyl acrylate

Annex to the safety data sheet: Exposure scenario

CAS-No.: 96-33-3 Product form: Substance Physical state: Liquid Substance type: Mono-constituent

Technical and organisational conditions and measures

Provide a basic standard of general ventilation (1 to 3 air changes per hour).	Effectiveness. Inhalation. 0%
Local exhaust ventilation	Effectiveness. Inhalation. 90%. Dermal. 0%
Occupational health and safety management system: advanced	

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

Respiratory protection. None	Effectiveness. Inhalation. 0%
Wear chemically resistant gloves (tested to EN374) in combination with 'basic' employee training [PPE16]	
Use suitable eye/skin protection	Effectiveness. Dermal. 90%
Avoid direct eye contact with product, also via contamination on hands [E73]	
Avoid direct skin contact with product. Identify potential areas for indirect skin contact. Wear gloves (tested to EN374) if hand contact with substance likely. Clean up contamination/spills as soon as they occur. Wash off any skin contamination immediately. Provide basic employee training to prevent / minimise exposures and to report any skin problems that may develop [E3]	
Where there is a possibility of contact, wear protective clothing, including gloves. Chemical resistant apron. Goggles + face shield	
Therefore the conclusion is that eye and skin irritation and dermal sensitisation are prevented.	

Other conditions affecting workers exposure

Assumes a good basic standard of occupational hygiene is implemented [G1]	
Indoor use [OOC2]	
Temperature, °C	≤ 40

3.3. Exposure estimation and reference to its source

3.3.1. Environmental release and exposure Use in polymer production (ERC6c)

Information for contributing exposure scenario

Release route		Release rate		Release estimation method
Indoor or outdoor use [OOC3]				
Protection target	Exposure estimation	PNEC	RCR	Assessment method
Freshwater	0.00041 mg/l	0.003 mg/l	0.151	EUSES v2.1.2
Marine water	0.0000529 mg/l	0 mg/l	0.196	EUSES v2.1.2
Freshwater sediment	1.74 µg/kg dw	0.011 mg/kg dwt	0.151	EUSES v2.1.2

Methyl acrylate

Annex to the safety data sheet: Exposure scenario

CAS-No.: 96-33-3 Product form: Substance Physical state: Liquid Substance type: Mono-constituent

Marine water sediment	0.224 µg/kg dw	0.011 mg/kg dwt	0.019	EUSES v2.1.2
Sewage treatment plant	0.00323 mg/l	10 mg/l	< 0.01	EUSES v2.1.2
Soil	296 µg/kg dw	1 mg/kg dwt	0.296	EUSES v2.1.2

Release estimation	Water	0.054 kg/day	Analytical testing
Release estimation	Air	14600 kg/day	ERC
Release estimation	The removal in the modelled biological STP is not accounted for		

3.3.2. Worker exposure Chemical production or refinery in closed process without likelihood of exposure or processes with equivalent containment conditions (PROC1)

Information for contributing exposure scenario

Route of exposure and type of effects	Exposure estimate	RCR	Method
Acute - Local - Dermal	0.000992 mg/m ³	< 0.01	ECETOC TRA worker v2.0
Long term - Local - Inhalation	0.036 mg/m ³	< 0.01	ECETOC TRA worker v2.0

3.3.3. Worker exposure Chemical production or refinery in closed continuous process with occasional controlled exposure or processes with equivalent containment conditions (PROC2)

Information for contributing exposure scenario

Route of exposure and type of effects	Exposure estimate	RCR	Method
Acute - Local - Dermal	0.02 mg/m ³	0.041	ECETOC TRA worker v2.0
Long term - Local - Inhalation	8.968 mg/m ³	0.498	ECETOC TRA worker v2.0

3.3.4. Worker exposure Manufacture or formulation in the chemical industry in closed batch processes with occasional controlled exposure or processes with equivalent containment condition; Indoor use (PROC3)

Information for contributing exposure scenario

Route of exposure and type of effects	Exposure estimate	RCR	Method
Acute - Local - Dermal	0.02 mg/m ³	0.041	ECETOC TRA worker v2.0
Long term - Local - Inhalation	12.55 mg/m ³	0.698	ECETOC TRA worker v2.0

3.3.5. Worker exposure Chemical production where opportunity for exposure arises (PROC4)

Information for contributing exposure scenario

Route of exposure and type of effects	Exposure estimate	RCR	Method
Acute - Local - Dermal	0.01 mg/m ³	0.204	ECETOC TRA worker v2.0
Long term - Local - Inhalation	10.76 mg/m ³	0.598	ECETOC TRA worker v2.0

Methyl acrylate

Annex to the safety data sheet: Exposure scenario

CAS-No.: 96-33-3 Product form: Substance Physical state: Liquid Substance type: Mono-constituent

3.3.6. Worker exposure Transfer of substance or mixture (charging/discharging) at non dedicated-facilities; Drum/batch transfers (PROC8a)

Information for contributing exposure scenario

Route of exposure and type of effects	Exposure estimate	RCR	Method
Acute - Local - Dermal	0.02 mg/m ³	0.041	ECETOC TRA worker v2.0
Long term - Local - Inhalation	12.55 mg/m ³	0.698	ECETOC TRA worker v2.0

3.3.7. Worker exposure Transfer of substance or mixture (charging/discharging) at non dedicated-facilities; Equipment cleaning and maintenance (PROC8a, PROC28)

Information for contributing exposure scenario

Route of exposure and type of effects	Exposure estimate	RCR	Method
Acute - Local - Dermal	0.02 mg/m ³	0.041	ECETOC TRA worker v2.0
Long term - Local - Inhalation	17.94 mg/m ³	0.996	ECETOC TRA worker v2.0

3.3.8. Worker exposure Transfer of substance or mixture (charging/discharging) at dedicated facilities (PROC8b)

Information for contributing exposure scenario

Route of exposure and type of effects	Exposure estimate	RCR	Method
Acute - Local - Dermal	0.06 mg/m ³	0.122	ECETOC TRA worker v2.0
Long term - Local - Inhalation	11.3 mg/m ³	0.628	ECETOC TRA worker v2.0

3.3.9. Worker exposure Transfer of substance or mixture into small containers (dedicated filling line, including weighing) (PROC9)

Information for contributing exposure scenario

Route of exposure and type of effects	Exposure estimate	RCR	Method
Acute - Local - Dermal	0.02 mg/m ³	0.041	ECETOC TRA worker v2.0
Long term - Local - Inhalation	10.04 mg/m ³	0.558	ECETOC TRA worker v2.0

3.3.10. Worker exposure Storage (PROC1)

Information for contributing exposure scenario

Route of exposure and type of effects	Exposure estimate	RCR	Method
Acute - Local - Dermal	0.000992 mg/m ³	< 0.01	ECETOC TRA worker v2.0
Long term - Local - Inhalation	0.036 mg/m ³	< 0.01	ECETOC TRA worker v2.0

3.3.11. Worker exposure Storage (PROC2)

Information for contributing exposure scenario

Route of exposure and type of effects	Exposure estimate	RCR	Method
Acute - Local - Dermal	0.02 mg/m ³	0.041	ECETOC TRA worker v2.0
Long term - Local - Inhalation	8.968 mg/m ³	0.498	ECETOC TRA worker v2.0

3.4. Guidance to Downstream User to evaluate whether he works inside the boundaries set by the ES

3.4.1. Environment

No data available

Methyl acrylate

Annex to the safety data sheet: Exposure scenario

CAS-No.: 96-33-3 Product form: Substance Physical state: Liquid Substance type: Mono-constituent

3.4.2. Health

No data available

Methyl acrylate

Annex to the safety data sheet: Exposure scenario

CAS-No.: 96-33-3 Product form: Substance Physical state: Liquid Substance type: Mono-constituent

4. IW-4 - Industrial, Manufacture; Use as intermediate, industrial; Downstream user sites

4.1. Title section

Use as intermediate, industrial; Downstream user sites

ES Ref.: IW-4 ES Type: Worker	Company ES code: MA-ID Association ref code: IW-4
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Environment	Use descriptors
CS 1	Use of intermediate ERC6a

Worker	Use descriptors
CS 2	General exposures (closed systems) PROC1
CS 3	General exposures (closed systems) PROC2
CS 4	General exposures (closed systems) PROC3
CS 5	General exposures (open systems) PROC4
CS 6	Equipment cleaning and maintenance PROC8a, PROC28
CS 7	Transfer of substance or mixture (charging/discharging) at non dedicated-facilities. Drum/batch transfers PROC8a
CS 8	Process sampling PROC8b
CS 9	Bulk transfers. Closed systems PROC8b
CS 10	Bulk transfers. Open systems PROC8b
CS 11	Laboratory activities PROC15
CS 12	Storage PROC1
CS 13	Storage PROC2

Processes, tasks, activities covered	Use of substance as an intermediate within closed or contained systems (not related to Strictly Controlled Conditions). Includes incidental exposures during recycling/ recovery, material transfers, storage, sampling, associated laboratory activities, maintenance and loading (including marine vessel/barge, road/rail car and bulk container).
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4.2. Conditions of use affecting exposure

4.2.1. Control of environmental exposure: Use of intermediate (ERC6a)

ERC6a	Use of intermediate
Assessment method	EUSES [EE4]

Product (article) characteristics

Physical form of product	Liquid
Concentration of substance in product	≤ 100 %
Viscosity, dynamic	0 mPa·s

Amount used, frequency and duration of use (or from service life)

Daily amount per site	≤ 97 t/d
Annual amount per site	≤ 29100 t/yr

Methyl acrylate

Annex to the safety data sheet: Exposure scenario

CAS-No.: 96-33-3 Product form: Substance Physical state: Liquid Substance type: Mono-constituent

Emission days [FD4]	300 days/yr
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Technical and organisational conditions and measures

Acclimated biological treatment	Effectiveness. Water. 96,3%. Readily biodegradable [PrC5a]
Upgrade of the system in place or additional air treatment measures, such as wet scrubber and/or air filtration and/or thermal oxidation and/or vapour recovery systems, in order to achieve a reduction of the air emissions.	Effectiveness. Air. 50%
Typical measures to maintain workplace concentrations of airborne VOCs and particulates below respective OELs. Typical measures to maintain workplace concentrations of airborne VOCs and particulates below respective OELs: e.g. thermal wet scrubber – gas removal and/or air filtration – particle removal and/or thermal oxidation and/or vapour recovery – adsorption.	
No release to wastewater from process as such, wastewater emissions limited to release generated from final equipment cleaning step using water	
Process optimized for highly efficient use of raw materials [OOC15]	

Conditions and measures related to sewage treatment plant

Release rate	≥ 2000 m ³ /d
Biological treatment. Standard	88.03 % Effectiveness. Water
Controlled application of sewage sludge to agricultural soil	

Conditions and measures related to treatment of waste (including article waste)

External treatment and disposal of waste should comply with applicable local and/or national regulations [ETW3]	
External recovery and recycling of waste should comply with applicable local and/or national regulations [ERW1]	

4.2.2. Control of worker exposure: General exposures (closed systems) (PROC1)

PROC1	Chemical production or refinery in closed process without likelihood of exposure or processes with equivalent containment conditions
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Product (article) characteristics

Physical form of product	Liquid
Concentration of substance in product	≤ 100 %
Other product characteristics	Ester [PrC4]

Amount used (or contained in articles), frequency and duration of use/exposure

Exposure duration	≤ 8 h/day
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Technical and organisational conditions and measures

Local exhaust ventilation. None	Effectiveness. Inhalation. 0%. Dermal. 0%
Provide a basic standard of general ventilation (1 to 3 air changes per hour).	Effectiveness. Inhalation. 0%
Occupational health and safety management system: advanced	
Use in closed process	

Methyl acrylate

Annex to the safety data sheet: Exposure scenario

CAS-No.: 96-33-3 Product form: Substance Physical state: Liquid Substance type: Mono-constituent

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

Respiratory protection. None	Effectiveness. Inhalation. 0%
Wear chemically resistant gloves (tested to EN374) in combination with 'basic' employee training [PPE16]	
Use suitable eye/skin protection	Effectiveness. Dermal. 90%
Avoid direct eye contact with product, also via contamination on hands [E73]	
Avoid direct skin contact with product. Identify potential areas for indirect skin contact. Wear gloves (tested to EN374) if hand contact with substance likely. Clean up contamination/spills as soon as they occur. Wash off any skin contamination immediately. Provide basic employee training to prevent / minimise exposures and to report any skin problems that may develop [E3]	
Where there is a possibility of contact, wear protective clothing, including gloves. Chemical resistant apron. Goggles + face shield	
Therefore the conclusion is that eye and skin irritation and dermal sensitisation are prevented.	

Other conditions affecting workers exposure

Assumes a good basic standard of occupational hygiene is implemented [G1]	
Chemical production or refinery in closed process without likelihood of exposure or processes with equivalent containment conditions	
Indoor use [OOC2]	
Temperature, °C	≤ 40

4.2.3. Control of worker exposure: General exposures (closed systems) (PROC2)

PROC2	Chemical production or refinery in closed continuous process with occasional controlled exposure or processes with equivalent containment conditions
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Product (article) characteristics

Physical form of product	Liquid
Concentration of substance in product	≤ 100 %
Other product characteristics	Ester [PrC4]

Amount used (or contained in articles), frequency and duration of use/exposure

Exposure duration	≤ 8 h/day
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Technical and organisational conditions and measures

Provide a basic standard of general ventilation (1 to 3 air changes per hour).	Effectiveness. Inhalation. 0%
Local exhaust ventilation. Handle substance within a predominantly closed system provided with extract ventilation [E49]	Effectiveness. Inhalation. 90%. Dermal. 0%
Use in closed process	
Occupational health and safety management system: advanced	

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

Respiratory protection. None	Effectiveness. Inhalation. 0%
Wear chemically resistant gloves (tested to EN374) in combination with 'basic' employee training [PPE16]	
Use suitable eye/skin protection	Effectiveness. Dermal. 90%
Avoid direct eye contact with product, also via contamination on hands [E73]	

Methyl acrylate

Annex to the safety data sheet: Exposure scenario

CAS-No.: 96-33-3 Product form: Substance Physical state: Liquid Substance type: Mono-constituent

Avoid direct skin contact with product. Identify potential areas for indirect skin contact. Wear gloves (tested to EN374) if hand contact with substance likely. Clean up contamination/spills as soon as they occur. Wash off any skin contamination immediately. Provide basic employee training to prevent / minimise exposures and to report any skin problems that may develop [E3]

Where there is a possibility of contact, wear protective clothing, including gloves. Chemical resistant apron. Goggles + face shield

Therefore the conclusion is that eye and skin irritation and dermal sensitisation are prevented.

Other conditions affecting workers exposure

Assumes a good basic standard of occupational hygiene is implemented [G1]

Use in closed, continuous process with occasional controlled exposure

Indoor use [OOC2]

Temperature, °C

≤ 40

4.2.4. Control of worker exposure: General exposures (closed systems) (PROC3)

PROC3

Manufacture or formulation in the chemical industry in closed batch processes with occasional controlled exposure or processes with equivalent containment condition

Product (article) characteristics

Physical form of product

Liquid

Concentration of substance in product

≤ 100 %

Other product characteristics

Ester [PrC4]

Amount used (or contained in articles), frequency and duration of use/exposure

Exposure duration

≤ 8 h/day

Technical and organisational conditions and measures

Local exhaust ventilation

Effectiveness. Inhalation. 90%. Dermal. 0%

Provide a good standard of general ventilation (not less than 3 to 5 air changes per hour) [E11]

Effectiveness. Inhalation. 30%

Occupational health and safety management system: advanced

Use in closed process

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

Respiratory protection. None

Effectiveness. Inhalation. 0%

Wear chemically resistant gloves (tested to EN374) in combination with 'basic' employee training [PPE16]

Use suitable eye/skin protection

Effectiveness. Dermal. 90%

Avoid direct eye contact with product, also via contamination on hands [E73]

Avoid direct skin contact with product. Identify potential areas for indirect skin contact. Wear gloves (tested to EN374) if hand contact with substance likely. Clean up contamination/spills as soon as they occur. Wash off any skin contamination immediately. Provide basic employee training to prevent / minimise exposures and to report any skin problems that may develop [E3]

Where there is a possibility of contact, wear protective clothing, including gloves. Chemical resistant apron. Goggles + face shield

Therefore the conclusion is that eye and skin irritation and dermal sensitisation are prevented.

Methyl acrylate

Annex to the safety data sheet: Exposure scenario

CAS-No.: 96-33-3 Product form: Substance Physical state: Liquid Substance type: Mono-constituent

Other conditions affecting workers exposure

Assumes a good basic standard of occupational hygiene is implemented [G1]	
Manufacture or formulation in the chemical industry in closed batch processes with occasional controlled exposure or processes with equivalent containment condition	
Indoor use [OOC2]	
Temperature, °C	≤ 40

4.2.5. Control of worker exposure: General exposures (open systems) (PROC4)

PROC4	Chemical production where opportunity for exposure arises
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Product (article) characteristics

Physical form of product	Liquid
Concentration of substance in product	≤ 100 %
Other product characteristics	Ester [PrC4]

Amount used (or contained in articles), frequency and duration of use/exposure

Exposure duration	≤ 8 h/day
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Technical and organisational conditions and measures

Local exhaust ventilation	Effectiveness. Inhalation. 90%. Dermal. 0%
Provide enhanced general ventilation (5 to 10 air changes per hour)	Effectiveness. Inhalation. 70%
Occupational health and safety management system: advanced	

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

Respiratory protection. None	Effectiveness. Inhalation. 0%
Wear chemically resistant gloves (tested to EN374) in combination with 'basic' employee training [PPE16]	
Use suitable eye/skin protection	Effectiveness. Dermal. 90%
Avoid direct eye contact with product, also via contamination on hands [E73]	
Avoid direct skin contact with product. Identify potential areas for indirect skin contact. Wear gloves (tested to EN374) if hand contact with substance likely. Clean up contamination/spills as soon as they occur. Wash off any skin contamination immediately. Provide basic employee training to prevent / minimise exposures and to report any skin problems that may develop [E3]	
Where there is a possibility of contact, wear protective clothing, including gloves. Chemical resistant apron. Goggles + face shield	
Therefore the conclusion is that eye and skin irritation and dermal sensitisation are prevented.	

Other conditions affecting workers exposure

Assumes a good basic standard of occupational hygiene is implemented [G1]	
Indoor use [OOC2]	
Temperature, °C	≤ 40

4.2.6. Control of worker exposure: Equipment cleaning and maintenance (PROC8a, PROC28)

PROC8a	Transfer of substance or mixture (charging and discharging) at non-dedicated facilities
PROC28	Manual maintenance (cleaning and repair) of machinery

Methyl acrylate

Annex to the safety data sheet: Exposure scenario

CAS-No.: 96-33-3 Product form: Substance Physical state: Liquid Substance type: Mono-constituent

Product (article) characteristics

Physical form of product	Liquid
Concentration of substance in product	≤ 100 %
Other product characteristics	Ester [PrC4]

Amount used (or contained in articles), frequency and duration of use/exposure

Exposure duration	≤ 1 h/day
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Technical and organisational conditions and measures

Provide a good standard of general ventilation (not less than 3 to 5 air changes per hour) [E11]	Effectiveness. Inhalation. 30%
Local exhaust ventilation. None	Effectiveness. Inhalation. 0%. Dermal. 0%
Occupational health and safety management system: advanced	

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

Wear respiratory protection. Approved respirator. Assigned Protection Factor (APF) of 10	Effectiveness. Inhalation. 90%
Wear chemically resistant gloves (tested to EN374) in combination with 'basic' employee training [PPE16]	
Use suitable eye/skin protection	Effectiveness. Dermal. 80%
Avoid direct eye contact with product, also via contamination on hands [E73]	
Avoid direct skin contact with product. Identify potential areas for indirect skin contact. Wear gloves (tested to EN374) if hand contact with substance likely. Clean up contamination/spills as soon as they occur. Wash off any skin contamination immediately. Provide basic employee training to prevent / minimise exposures and to report any skin problems that may develop [E3]	
Where there is a possibility of contact, wear protective clothing, including gloves. Chemical resistant apron. Goggles + face shield	
Therefore the conclusion is that eye and skin irritation and dermal sensitisation are prevented.	

Other conditions affecting workers exposure

Assumes a good basic standard of occupational hygiene is implemented [G1]	
Indoor use [OOC2]	
Temperature, °C	≤ 40

4.2.7. Control of worker exposure: Transfer of substance or mixture (charging/discharging) at non dedicated-facilities. Drum/batch transfers (PROC8a)

PROC8a	Transfer of substance or mixture (charging and discharging) at non-dedicated facilities
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Product (article) characteristics

Physical form of product	Liquid
Concentration of substance in product	≤ 100 %
Other product characteristics	Ester [PrC4]

Amount used (or contained in articles), frequency and duration of use/exposure

Exposure duration	≤ 1 h/day
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Technical and organisational conditions and measures

Provide a good standard of general ventilation (not less than 3 to 5 air changes per hour) [E11]	Effectiveness. Inhalation. 30%
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Methyl acrylate

Annex to the safety data sheet: Exposure scenario

CAS-No.: 96-33-3 Product form: Substance Physical state: Liquid Substance type: Mono-constituent

Local exhaust ventilation	Effectiveness. Inhalation. 90%. Dermal. 0%
Occupational health and safety management system: advanced	

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

Wear respiratory protection. None	Effectiveness. Inhalation. 0%
Wear chemically resistant gloves (tested to EN374) in combination with 'basic' employee training [PPE16]	
Use suitable eye/skin protection	Effectiveness. Dermal. 90%
Avoid direct eye contact with product, also via contamination on hands [E73]	
Avoid direct skin contact with product. Identify potential areas for indirect skin contact. Wear gloves (tested to EN374) if hand contact with substance likely. Clean up contamination/spills as soon as they occur. Wash off any skin contamination immediately. Provide basic employee training to prevent / minimise exposures and to report any skin problems that may develop [E3]	
Where there is a possibility of contact, wear protective clothing, including gloves. Chemical resistant apron. Goggles + face shield	
Therefore the conclusion is that eye and skin irritation and dermal sensitisation are prevented.	

Other conditions affecting workers exposure

Assumes a good basic standard of occupational hygiene is implemented [G1]	
Indoor use [OOC2]	
Temperature, °C	≤ 40

4.2.8. Control of worker exposure: Process sampling (PROC8b)

PROC8b	Transfer of substance or mixture (charging and discharging) at dedicated facilities
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Product (article) characteristics

Physical form of product	Liquid
Concentration of substance in product	≤ 100 %
Other product characteristics	Ester [PrC4]

Amount used (or contained in articles), frequency and duration of use/exposure

Exposure duration	≤ 4 h/day
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Technical and organisational conditions and measures

Provide a basic standard of general ventilation (1 to 3 air changes per hour).	Effectiveness. Inhalation. 0%
Local exhaust ventilation. Ensure material transfers are under containment or extract ventilation [E66]	Effectiveness. Inhalation. 90%. Dermal. 0%
Occupational health and safety management system: advanced	

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

Respiratory protection. None	Effectiveness. Inhalation. 0%
Wear chemically resistant gloves (tested to EN374) in combination with 'basic' employee training [PPE16]	
Use suitable eye/skin protection	Effectiveness. Dermal. 80%
Avoid direct eye contact with product, also via contamination on hands [E73]	

Methyl acrylate

Annex to the safety data sheet: Exposure scenario

CAS-No.: 96-33-3 Product form: Substance Physical state: Liquid Substance type: Mono-constituent

Avoid direct skin contact with product. Identify potential areas for indirect skin contact. Wear gloves (tested to EN374) if hand contact with substance likely. Clean up contamination/spills as soon as they occur. Wash off any skin contamination immediately. Provide basic employee training to prevent / minimise exposures and to report any skin problems that may develop [E3]

Where there is a possibility of contact, wear protective clothing, including gloves. Chemical resistant apron. Goggles + face shield

Therefore the conclusion is that eye and skin irritation and dermal sensitisation are prevented.

Other conditions affecting workers exposure

Assumes a good basic standard of occupational hygiene is implemented [G1]

Indoor use [OOC2]

Temperature, °C

≤ 40

4.2.9. Control of worker exposure: Bulk transfers. Closed systems (PROC8b)

PROC8b

Transfer of substance or mixture (charging and discharging) at dedicated facilities

Product (article) characteristics

Physical form of product

Liquid

Concentration of substance in product

≤ 100 %

Other product characteristics

Ester [PrC4]

Amount used (or contained in articles), frequency and duration of use/exposure

Exposure duration

≤ 4 h/day

Technical and organisational conditions and measures

Provide a good standard of general ventilation (not less than 3 to 5 air changes per hour) [E11]

Effectiveness. Inhalation. 30%

Local exhaust ventilation. Ensure material transfers are under containment or extract ventilation [E66]

Effectiveness. Inhalation. 95%. Dermal. 0%

Occupational health and safety management system: advanced

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

Respiratory protection. None

Effectiveness. Inhalation. 0%

Wear chemically resistant gloves (tested to EN374) in combination with 'basic' employee training [PPE16]

Use suitable eye/skin protection

Effectiveness. Dermal. 80%

Avoid direct eye contact with product, also via contamination on hands [E73]

Avoid direct skin contact with product. Identify potential areas for indirect skin contact. Wear gloves (tested to EN374) if hand contact with substance likely. Clean up contamination/spills as soon as they occur. Wash off any skin contamination immediately. Provide basic employee training to prevent / minimise exposures and to report any skin problems that may develop [E3]

Where there is a possibility of contact, wear protective clothing, including gloves. Chemical resistant apron. Goggles + face shield

Therefore the conclusion is that eye and skin irritation and dermal sensitisation are prevented.

Other conditions affecting workers exposure

Assumes a good basic standard of occupational hygiene is implemented [G1]

Indoor use [OOC2]

Methyl acrylate

Annex to the safety data sheet: Exposure scenario

CAS-No.: 96-33-3 Product form: Substance Physical state: Liquid Substance type: Mono-constituent

Temperature, °C	≤ 40
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4.2.10. Control of worker exposure: Bulk transfers. Open systems (PROC8b)

PROC8b	Transfer of substance or mixture (charging and discharging) at dedicated facilities
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Product (article) characteristics	
Physical form of product	Liquid
Concentration of substance in product	≤ 100 %
Other product characteristics	Ester [PrC4]

Amount used (or contained in articles), frequency and duration of use/exposure	
Exposure duration	≤ 4 h/day

Technical and organisational conditions and measures	
Local exhaust ventilation. Ensure material transfers are under containment or extract ventilation [E66]	Effectiveness. Inhalation. 95%. Dermal. 0%
Provide a basic standard of general ventilation (1 to 3 air changes per hour).	Effectiveness. Inhalation. 0%
Occupational health and safety management system: advanced	

Conditions and measures related to personal protection, hygiene and health evaluation	
Respiratory protection. None	Effectiveness. Inhalation. 0%
Wear chemically resistant gloves (tested to EN374) in combination with 'basic' employee training [PPE16]	
Use suitable eye/skin protection	Effectiveness. Dermal. 80%
Avoid direct eye contact with product, also via contamination on hands [E73]	
Avoid direct skin contact with product. Identify potential areas for indirect skin contact. Wear gloves (tested to EN374) if hand contact with substance likely. Clean up contamination/spills as soon as they occur. Wash off any skin contamination immediately. Provide basic employee training to prevent / minimise exposures and to report any skin problems that may develop [E3]	
Where there is a possibility of contact, wear protective clothing, including gloves. Chemical resistant apron. Goggles + face shield	
Therefore the conclusion is that eye and skin irritation and dermal sensitisation are prevented.	

Other conditions affecting workers exposure	
Assumes a good basic standard of occupational hygiene is implemented [G1]	
Indoor use [OOC2]	
Temperature, °C	≤ 40

4.2.11. Control of worker exposure: Laboratory activities (PROC15)

PROC15	Use as laboratory reagent
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Product (article) characteristics	
Physical form of product	Liquid
Concentration of substance in product	≤ 100 %
Other product characteristics	Ester [PrC4]

Methyl acrylate

Annex to the safety data sheet: Exposure scenario

CAS-No.: 96-33-3 Product form: Substance Physical state: Liquid Substance type: Mono-constituent

Amount used (or contained in articles), frequency and duration of use/exposure

Exposure duration	≤ 4 h/day
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Technical and organisational conditions and measures

Local exhaust ventilation. Handle within a fume cupboard or implement suitable equivalent methods to minimise exposure [E12]	Effectiveness. Inhalation. 90%. Dermal. 0%
Provide a basic standard of general ventilation (1 to 3 air changes per hour).	Effectiveness. Inhalation. 0%
Occupational health and safety management system: advanced	

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

Respiratory protection. None	Effectiveness. Inhalation. 0%
Wear chemically resistant gloves (tested to EN374) in combination with 'basic' employee training [PPE16]	
Use suitable eye/skin protection	Effectiveness. Dermal. 90%
Avoid direct eye contact with product, also via contamination on hands [E73]	
Avoid direct skin contact with product. Identify potential areas for indirect skin contact. Wear gloves (tested to EN374) if hand contact with substance likely. Clean up contamination/spills as soon as they occur. Wash off any skin contamination immediately. Provide basic employee training to prevent / minimise exposures and to report any skin problems that may develop [E3]	
Where there is a possibility of contact, wear protective clothing, including gloves. Chemical resistant apron. Goggles + face shield	
Therefore the conclusion is that eye and skin irritation and dermal sensitisation are prevented.	

Other conditions affecting workers exposure

Assumes a good basic standard of occupational hygiene is implemented [G1]	
Indoor use [OOC2]	
Temperature, °C	≤ 40

4.2.12. Control of worker exposure: Storage (PROC1)

PROC1	Chemical production or refinery in closed process without likelihood of exposure or processes with equivalent containment conditions
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Product (article) characteristics

Physical form of product	Liquid
Concentration of substance in product	≤ 100 %
Other product characteristics	Ester [PrC4]

Amount used (or contained in articles), frequency and duration of use/exposure

Exposure duration	≤ 8 h/day
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Technical and organisational conditions and measures

Local exhaust ventilation. None	Effectiveness. Inhalation. 0%. Dermal. 0%
Provide a basic standard of general ventilation (1 to 3 air changes per hour).	Effectiveness. Inhalation. 0%
Occupational health and safety management system: advanced	

Methyl acrylate

Annex to the safety data sheet: Exposure scenario

CAS-No.: 96-33-3 Product form: Substance Physical state: Liquid Substance type: Mono-constituent

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

Respiratory protection. None	Effectiveness. Inhalation. 0%
Wear chemically resistant gloves (tested to EN374) in combination with 'basic' employee training [PPE16]	
Use suitable eye/skin protection	Effectiveness. Dermal. 90%
Avoid direct eye contact with product, also via contamination on hands [E73]	
Avoid direct skin contact with product. Identify potential areas for indirect skin contact. Wear gloves (tested to EN374) if hand contact with substance likely. Clean up contamination/spills as soon as they occur. Wash off any skin contamination immediately. Provide basic employee training to prevent / minimise exposures and to report any skin problems that may develop [E3]	
Where there is a possibility of contact, wear protective clothing, including gloves. Chemical resistant apron. Goggles + face shield	
Therefore the conclusion is that eye and skin irritation and dermal sensitisation are prevented.	

Other conditions affecting workers exposure

Chemical production or refinery in closed process without likelihood of exposure or processes with equivalent containment conditions	
Assumes a good basic standard of occupational hygiene is implemented [G1]	
Indoor use [OOC2]	
Temperature, °C	≤ 40

4.2.13. Control of worker exposure: Storage (PROC2)

PROC2	Chemical production or refinery in closed continuous process with occasional controlled exposure or processes with equivalent containment conditions
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Product (article) characteristics

Physical form of product	Liquid
Concentration of substance in product	≤ 100 %
Other product characteristics	Ester [PrC4]

Amount used (or contained in articles), frequency and duration of use/exposure

Exposure duration	≤ 1 h/day
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Technical and organisational conditions and measures

Local exhaust ventilation. None	Effectiveness. Inhalation. 0%. Dermal. 0%
Provide a basic standard of general ventilation (1 to 3 air changes per hour).	Effectiveness. Inhalation. 0%
Occupational health and safety management system: advanced	

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

Respiratory protection. None	Effectiveness. Inhalation. 0%
Wear chemically resistant gloves (tested to EN374) in combination with 'basic' employee training [PPE16]	
Use suitable eye/skin protection	Effectiveness. Dermal. 90%
Avoid direct eye contact with product, also via contamination on hands [E73]	

Methyl acrylate

Annex to the safety data sheet: Exposure scenario

CAS-No.: 96-33-3 Product form: Substance Physical state: Liquid Substance type: Mono-constituent

Avoid direct skin contact with product. Identify potential areas for indirect skin contact. Wear gloves (tested to EN374) if hand contact with substance likely. Clean up contamination/spills as soon as they occur. Wash off any skin contamination immediately. Provide basic employee training to prevent / minimise exposures and to report any skin problems that may develop [E3]

Where there is a possibility of contact, wear protective clothing, including gloves. Chemical resistant apron. Goggles + face shield

Therefore the conclusion is that eye and skin irritation and dermal sensitisation are prevented.

Other conditions affecting workers exposure

Assumes a good basic standard of occupational hygiene is implemented [G1]

Use in closed, continuous process with occasional controlled exposure

Indoor use [OOC2]

Temperature, °C

≤ 40

4.3. Exposure estimation and reference to its source

4.3.1. Environmental release and exposure Use of intermediate (ERC6a)

Information for contributing exposure scenario

Release route		Release rate		Release estimation method	
Indoor use [OOC2]					
Protection target	Exposure estimation	PNEC	RCR	Assessment method	
Freshwater	0.00041 mg/l	0.003 mg/l	0.151	EUSES v2.1.2	
Marine water	0.0000529 mg/l	0 mg/l	0.196	EUSES v2.1.2	
Freshwater sediment	1.74 µg/kg dw	0.011 mg/kg dwt	0.151	EUSES v2.1.2	
Marine water sediment	0.224 µg/kg dw	0.011 mg/kg dwt	0.019	EUSES v2.1.2	
Sewage treatment plant	0.00323 mg/l	10 mg/l	< 0.01	EUSES v2.1.2	
Soil	49 µg/kg dw	1 mg/kg dwt	0.049	EUSES v2.1.2	
Release estimation	Water	0.054 kg/day			
Release estimation	Air	2420 kg/day			

Methyl acrylate

Annex to the safety data sheet: Exposure scenario

CAS-No.: 96-33-3 Product form: Substance Physical state: Liquid Substance type: Mono-constituent

Release estimation	The removal in the modelled biological STP is not accounted for		
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4.3.2. Worker exposure General exposures (closed systems) (PROC1)

Information for contributing exposure scenario			
Route of exposure and type of effects	Exposure estimate	RCR	Method
Acute - Local - Dermal	0.000992 mg/m ³	< 0.01	ECETOC TRA worker v2.0
Long term - Local - Inhalation	0.036 mg/m ³	< 0.01	ECETOC TRA worker v2.0

4.3.3. Worker exposure General exposures (closed systems) (PROC2)

Information for contributing exposure scenario			
Route of exposure and type of effects	Exposure estimate	RCR	Method
Acute - Local - Dermal	0.02 mg/m ³	0.041	ECETOC TRA worker v2.0
Long term - Local - Inhalation	8.968 mg/m ³	0.498	ECETOC TRA worker v2.0

4.3.4. Worker exposure General exposures (closed systems) (PROC3)

Information for contributing exposure scenario			
Route of exposure and type of effects	Exposure estimate	RCR	Method
Acute - Local - Dermal	0.02 mg/m ³	0.041	ECETOC TRA worker v2.0
Long term - Local - Inhalation	12.55 mg/m ³	0.698	ECETOC TRA worker v2.0

4.3.5. Worker exposure General exposures (open systems) (PROC4)

Information for contributing exposure scenario			
Route of exposure and type of effects	Exposure estimate	RCR	Method
Acute - Local - Dermal	0.1 mg/m ³	0.204	ECETOC TRA worker v2.0
Long term - Local - Inhalation	10.76 mg/m ³	0.598	ECETOC TRA worker v2.0

4.3.6. Worker exposure Equipment cleaning and maintenance (PROC8a, PROC28)

Information for contributing exposure scenario			
Route of exposure and type of effects	Exposure estimate	RCR	Method
Acute - Local - Dermal	0.04 mg/m ³	0.082	ECETOC TRA worker v2.0
Long term - Local - Inhalation	12.55 mg/m ³	0.698	ECETOC TRA worker v2.0

4.3.7. Worker exposure Transfer of substance or mixture (charging/discharging) at non dedicated-facilities. Drum/batch transfers (PROC8a)

Information for contributing exposure scenario			
Route of exposure and type of effects	Exposure estimate	RCR	Method
Acute - Local - Dermal	0.02 mg/m ³	0.041	ECETOC TRA worker v2.0
Long term - Local - Inhalation	12.55 mg/m ³	0.698	ECETOC TRA worker v2.0

4.3.8. Worker exposure Process sampling (PROC8b)

Information for contributing exposure scenario			
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Methyl acrylate

Annex to the safety data sheet: Exposure scenario

CAS-No.: 96-33-3 Product form: Substance Physical state: Liquid Substance type: Mono-constituent

Route of exposure and type of effects	Exposure estimate	RCR	Method
Acute - Local - Dermal	0.12 mg/m ³	0.245	ECETOC TRA worker v2.0
Long term - Local - Inhalation	16.14 mg/m ³	0.897	ECETOC TRA worker v2.0

4.3.9. Worker exposure Bulk transfers. Closed systems (PROC8b)

Information for contributing exposure scenario

Route of exposure and type of effects	Exposure estimate	RCR	Method
Acute - Local - Dermal	0.12 mg/m ³	0.245	ECETOC TRA worker v2.0
Long term - Local - Inhalation	16.14 mg/m ³	0.897	ECETOC TRA worker v2.0

4.3.10. Worker exposure Bulk transfers. Open systems (PROC8b)

Information for contributing exposure scenario

Route of exposure and type of effects	Exposure estimate	RCR	Method
Acute - Local - Dermal	0.12 mg/m ³	0.245	ECETOC TRA worker v2.0
Long term - Local - Inhalation	16.14 mg/m ³	< 0.897	ECETOC TRA worker v2.0

4.3.11. Worker exposure Laboratory activities (PROC15)

Information for contributing exposure scenario

Route of exposure and type of effects	Exposure estimate	RCR	Method
Acute - Local - Dermal	0.00595 mg/m ³	0.012	ECETOC TRA worker v2.0
Long term - Local - Inhalation	10.76 mg/m ³	0.598	ECETOC TRA worker v2.0

4.3.12. Worker exposure Storage (PROC1)

Information for contributing exposure scenario

Route of exposure and type of effects	Exposure estimate	RCR	Method
Acute - Local - Dermal	0.000992 mg/m ³	< 0.01	ECETOC TRA worker v2.0
Long term - Local - Inhalation	0.036 mg/m ³	< 0.01	ECETOC TRA worker v2.0

4.3.13. Worker exposure Storage (PROC2)

Information for contributing exposure scenario

Route of exposure and type of effects	Exposure estimate	RCR	Method
Acute - Local - Dermal	0.004 mg/m ³	< 0.01	ECETOC TRA worker v2.0
Long term - Local - Inhalation	17.94 mg/m ³	0.996	ECETOC TRA worker v2.0

4.4. Guidance to Downstream User to evaluate whether he works inside the boundaries set by the ES

4.4.1. Environment

No data available

4.4.2. Health

No data available