

BUTYL ACRYLATE

Safety Data Sheet

according to Regulation (EC) No. 1907/2006 (REACH) with its amendment Regulation (EU) 2015/830
Revision date: 6 Oct 2020 Version: 3.0

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

1.1. Product identifier

Product form : Substance
Trade name : BUTYL ACRYLATE
IUPAC name : butyl acrylate
EC Index-No. : 607-062-00-3
EC-No. : 205-480-7
CAS-No. : 141-32-2
REACH registration No : 01-2119453155-43-0025
Type of product : Stabilized product
Formula : C₇H₁₂O₂
Synonyms : 2-propenoic acid butyl ester / 2-Propenoic acid, butyl ester / acrylic acid butyl ester / acrylic acid n-butyl ester / acrylic acid normal-butyl ester / acrylobutylic ester, monomer / butyl acrylate / butyl ester 2-propenoic acid / butyl ester acrylic acid / butyl-2-propenoate / butyl-2-propenoate / butylacrylate, inhibited / n-butyl acrylate / n-butyl-2-propenoate / normal-butyl ester / normal-butyl-2-propenoate / normal-butylacrylate / propenoic acid butyl ester / propenoic butyl ester
BIG No : 14347

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

1.2.1. Relevant identified uses

Use of the substance/mixture : Monomer
Laboratory chemical

Title	Life cycle stage	Use descriptors
Manufacture and distribution of the substance (ES Ref.: ES-1)	Industrial, Manufacture	PROC1, PROC2, PROC3, PROC8a, PROC8b, PROC9, ERC1
Polymerisation at production facilities (ES Ref.: ES-2)	Industrial	SU8, SU9, SU12, PROC1, PROC2, PROC3, PROC4, PROC5, PROC8a, PROC8b, PROC9, ERC6c
Polymerisation at downstream user facilities (ES Ref.: ES-3)	Industrial	SU8, SU9, SU12, PROC1, PROC2, PROC3, PROC4, PROC5, PROC8a, PROC8b, PROC9, ERC6c
Use as an intermediate (ES Ref.: ES-4)	Industrial	SU8, SU9, SU12, PROC1, PROC2, PROC3, PROC4, PROC5, PROC8a, PROC8b, PROC9, ERC6a
Use in laboratories (ES Ref.: ES-5)	Industrial, Manufacture	PROC15, ERC1

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)
Croatia	Centar za kontrolu otrovanja Institut za medicinska istraživanja i medicinu rada	Ksaverska Cesta 2 p.p. 291 10000 Zagreb	+385 1 234 8342	
Denmark	Gifflinjen Bispebjerg Hospital	Bispebjerg Bakke 23 2400 København NV	+45 82 12 12 12	
Estonia	Mürgistusteabekeskus	Gonsiori 29 15027 Tallinn	16662 +372 626 93 90	
Finland	Myrkytystietokeskus	Stenbäckinkatu 9 PO BOX 100 29 Helsinki	+358 9 471 977 +358 800 147 111	
Greece	Poisons Information Centre Children's Hospital P&A Kyriakou	11762 Athens	+30 2 10 779 3777	
Greece	Department of Forensic Medicine & Toxicology Aristotle University of Thessaloniki, Medical Faculty	54006 Thessaloniki		
Latvia	Valsts Toksikoloģijas centrs, Saindēšanās un zāļu informācijas centrs	Hipokrāta 2 1038 Rīga	+371 67 04 24 73	
Lithuania	Apsinuodijimų informacijos biuras	Birutės g. 56 8110 Vilnius	+370 5 236 20 52 +370 687 53378	
Luxembourg	Centre Anti-Poisons/Antigifcentrum c/o Hôpital Central de la Base - Reine Astrid	Rue Bruyn 1 1120 Bruxelles/Brussel	+352 8002 5500	
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	
Slovakia	Národné toxikologické informačné centrum Univerzitná nemocnica Bratislava, pracovisko Kramáre, Klinika pracovného lekárstva a toxikológie	Limbová 5 833 05 Bratislava	+421 2 54 77 41 66	
Slovenia	Center za klinično toksikologijo in farmakologijo Interna klinika, UKCL	Zaloška cesta 7 1525 Ljubljana	+386 41 650 500	
Sweden	Giftinformationscentralen	Box 60 500 171 76 Stockholm	112 – begär Giftinformation +46 10 456 6700 (Från utlandet)	
Switzerland	Tox Info Suisse	Freiestrasse 16 8032 Zürich	145	(from abroad: +41 44 251 51 51) non urgent inquiry: +41 44 251 66 66

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Turkey	Ulusal Zehir Merkezi (UZEM) Refik Saydam Hıfzıssıhha Merkezi Başkanlığı	Cemal Gürsel Cd. No: 18 Sıhhiye Çankaya 06590 Ankara	114	Information is provided to public and medical personnel on poisoning incidents via 114.
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]

Flammable liquids, Category 3	H226
Acute toxicity (inhal.), Category 4	H332
Skin corrosion/irritation, Category 2	H315
Serious eye damage/eye irritation, Category 2	H319
Skin sensitisation, Category 1	H317
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	

Adverse physicochemical, human health and environmental effects

No additional information available

2.2. Label elements

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

Hazard pictograms (CLP)



GHS02

GHS07

Signal word (CLP)

: Warning

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Hazard statements (CLP)	: H226 - Flammable liquid and vapour. H315 - Causes skin irritation. H317 - May cause an allergic skin reaction. H319 - Causes serious eye irritation. H332 - Harmful 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. P240 - Ground and bond container and receiving equipment. P241 - Use explosion-proof electrical/ventilating/lighting equipment. P261 - Avoid breathing vapours. P273 - Avoid release to the environment. P280 - Wear protective gloves, protective clothing, eye protection, face protection. P303+P361+P353 - IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water or shower. P304+P340 - IF INHALED: Remove person to fresh air and keep comfortable for breathing. P305+P351+P338 - IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. P312 - Call a POISON CENTRE or doctor if you feel unwell. P333+P313 - If skin irritation or rash occurs: Get medical advice/attention. P337+P313 - If eye irritation persists: Get medical advice/attention. P403+P235 - Store in a well-ventilated place. Keep cool.

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	: Butyl acrylate
CAS-No.	: 141-32-2
EC-No.	: 205-480-7
EC Index-No.	: 607-062-00-3

Name	Product identifier	%	Classification according to Regulation (EC) No. 1272/2008 [CLP]
Butyl acrylate (Note D)	(CAS-No.) 141-32-2 (EC-No.) 205-480-7 (EC Index-No.) 607-062-00-3 (REACH-no) 01-2119453155-43-0025	99.5 – 99.85	Flam. Liq. 3, H226 Acute Tox. 4 (Inhalation), H332 Skin Irrit. 2, H315 Eye Irrit. 2, H319 Skin Sens. 1, H317 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

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

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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. Respiratory problems: consult a doctor/medical service.
First-aid measures after skin contact	: Wash immediately with lots of water. Soap may be used. Do not apply (chemical) neutralizing agents without medical advice. 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. Take victim to an ophthalmologist if irritation persists.
First-aid measures after ingestion	: Rinse mouth with water. Immediately after ingestion: give lots of water to drink. 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.

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

Symptoms/effects after inhalation	: Headache. Irritation of the respiratory tract. Dry/sore throat. Irritation of the nasal mucous membranes. EXPOSURE TO HIGH CONCENTRATIONS: Risk of lung oedema. Respiratory difficulties.
Symptoms/effects after skin contact	: Red skin. Tingling/irritation of the skin.
Symptoms/effects after eye contact	: Irritation of the eye tissue. Lacrimation.
Symptoms/effects after ingestion	: Dry/sore throat. Nausea. Vomiting. Abdominal pain.
Chronic symptoms	: Skin rash/inflammation.

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 (not alcohol-resistant).
Unsuitable extinguishing media	: Water (quick-acting extinguisher, reel); risk of puddle expansion. Water; risk of puddle expansion.

5.2. Special hazards arising from the substance or mixture

Fire hazard	: DIRECT FIRE HAZARD: 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. 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

Precautionary measures fire	: Exposure to fire/heat: keep upwind. Exposure to fire/heat: consider evacuation. Exposure to fire/heat: have neighbourhood close doors and windows.
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.
Protection during firefighting	: Heat/fire exposure: compressed air/oxygen apparatus.

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SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

General measures : Avoid contact with skin and eyes. Avoid inhalation of vapours. Eliminate every possible source of ignition. No open flames. No smoking. Use personal protective equipment (PPE). Use special care to avoid static electric charges. Absorb spillage with: inert absorbent material.

6.1.1. For non-emergency personnel

Protective equipment : Gloves. Face shield. Protective clothing.
Emergency procedures : Mark the danger area. Stop engines and no smoking. No naked flames or sparks. Spark- and explosionproof appliances and lighting equipment. Wash contaminated clothes. Large spills/in confined spaces: consider evacuation. In case of hazardous reactions: keep upwind. In case of reactivity hazard: consider evacuation.

6.1.2. For emergency responders

Emergency procedures : Cover spill with non combustible material, e.g.: sand/earth. All equipment used when handling the product must be grounded. Do not touch spilled material. Evacuate unnecessary personnel. Keep away from combustible material. Prevent from entering sewers, basements and workpits, or any place where its accumulation can be dangerous. Stop leak if safe to do so.

6.2. Environmental precautions

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. Provide equipment/receptacles with earthing. Do not use compressed air for pumping over spills. Heating: dilute combustible gas/vapour with water curtain.
Methods for cleaning up : Take up liquid spill into a non combustible material e.g.: 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. Contaminated surfaces: clean (treat) with an excess of water. Take collected spill to manufacturer/competent authority. Wash clothing and equipment after handling.
Other information : Dispose of waste in accordance with environmental legislation.

6.4. Reference to other sections

For further information refer to section 13. See Heading 8.

SECTION 7: Handling and storage

7.1. Precautions for safe handling

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. Carry operations in the open/under local exhaust/ventilation or with respiratory protection. Comply with the legal requirements. Remove contaminated clothing immediately. Clean contaminated clothing. 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 : Comply with applicable regulations. Keep in a cool, well-ventilated place away from heat. Store in a well-ventilated place. Keep container tightly closed. Maintain inhibitor and dissolved oxygen level. Recommended inhibitor level is: 10 to 20 ppm. Recommended oxygen level is 5 to 9 vol. %.
Storage conditions : Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. Keep container tightly closed. Store in accordance with local, regional, national or international regulation.

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Incompatible products	: Mineral acids. Organic solvents. Oxidizing materials. Peroxides. reducing materials. Strong acids. Strong bases.
Incompatible materials	: Direct sunlight. Sources of ignition. Heat sources. combustible materials.
Maximum storage period	: ≤ 12 months
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) bases. water/moisture.
Storage area	: Store in a cool area. Store in a dry area. Store in a dark area. Keep out of direct sunlight. Ventilation at floor level. Fireproof storeroom. Provide for a cooling system. Provide for a tub to collect spills. Provide the tank with earthing. Meet the legal requirements.
Special rules on packaging	: SPECIAL REQUIREMENTS: closing. nonhermetical. dry. clean. correctly labelled. meet the legal requirements. Secure fragile packagings in solid containers.
Packaging materials	: SUITABLE MATERIAL: steel. stainless steel. aluminium. glass. polyethylene.

7.3. Specific end use(s)

No additional information available

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

BUTYL ACRYLATE (141-32-2)

EU - Occupational Exposure Limits

Local name	n-Butylacrylate
IOELV TWA (mg/m ³)	11 mg/m ³
IOELV TWA (ppm)	2 ppm
IOELV STEL (mg/m ³)	53 mg/m ³
IOELV STEL (ppm)	10 ppm
Regulatory reference	COMMISSION DIRECTIVE 2000/39/EC

Belgium - Occupational Exposure Limits

Local name	Acrylate de n-butyle # n-Butylacrylaat
Limit value [mg/m ³]	11 mg/m ³
Limit value [ppm]	2 ppm
Short time value [mg/m ³]	53 mg/m ³
Short time value [ppm]	10 ppm
Regulatory reference	Koninklijk besluit/Arrêté royal 21/01/2020

Czech Republic - Occupational Exposure Limits

Local name	Butylakrylát (Butylester 2-propenové kyseliny; Butyl 2-propenoát)
Expoziční limity (PEL) (mg/m ³)	10 mg/m ³
Expoziční limity (PEL) (ppm)	1.9 ppm
Expoziční limity (NPK-P) (mg/m ³)	20 mg/m ³
Expoziční limity (NPK-P) (ppm)	3.8 ppm
Remark (CZ)	I - dráždí sliznice (oči, dýchací cesty), respektive kůži, S - látka má senzibilizující účinek (s větou H317, H334).
Regulatory reference	Nařízení vlády č. 361/2007 Sb. (Předpis 41/2020 Sb.)

Germany - Occupational Exposure Limits (TRGS 900)

TRGS 900 Local name	n-Butylacrylat
Occupational exposure limit value (mg/m ³)	11 mg/m ³

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Occupational exposure limit value (ppm)	2 ppm
Peak exposure limitation factor	2(l)
TRGS 900 Remark	DFG;EU;Y;H;Sh
TRGS 900 Regulatory reference	TRGS900
Hungary - Occupational Exposure Limits	
Local name	n-BUTIL-AKRILÁT
AK-érték	11 mg/m ³
CK-érték	53 mg/m ³
Megjegyzések (HU)	i (ingerlő anyag, amely izgatja a bőrt, nyálkahártyát, szemet vagy mindhárom); I. (HELYILEG IRRITÁLÓ ANYAGOK), EU1 (2000/39/EK irányelvben közölt érték); N (Irritáló anyagok, egyszerű fojtógázok, csekély egészségkárosító hatással bíró anyagok)
Regulatory reference	5/2020. (II. 6.) ITM rendelet - A kémiai kóroki tényezők hatásának kitett munkavállalók egészségének és biztonságának védelméről
Italy - Occupational Exposure Limits	
Local name	Acrilato di n-butile
OEL TWA (mg/m ³)	11 mg/m ³
OEL TWA (ppm)	2 ppm
OEL STEL (mg/m ³)	53 mg/m ³
OEL STEL (ppm)	10 ppm
Regulatory reference	Allegato XXXVIII del D.Lgs. 9 aprile 2008, n. 81 e s.m.i.
Poland - Occupational Exposure Limits	
Local name	Akrylan butylu
NDS (mg/m ³)	11 mg/m ³
NDSCh (mg/m ³)	30 mg/m ³
Regulatory reference	Dz. U. 2018 poz. 1286
Portugal - Occupational Exposure Limits	
Local name	Acrilato de n-butilo
OEL TWA (ppm)	2 ppm
Regulatory reference	Norma Portuguesa NP 1796:2014
Romania - Occupational Exposure Limits	
Local name	Acrilat de n-butil
OEL TWA (mg/m ³)	11 mg/m ³
OEL TWA (ppm)	2 ppm
OEL STEL (mg/m ³)	53 mg/m ³
OEL STEL (ppm)	10 ppm
Regulatory reference	Hotărârea Guvernului nr. 1.218/2006 (Hotărârea nr. 157/2020)
Spain - Occupational Exposure Limits	
Local name	Acrilato de n-butilo
VLA-ED (mg/m ³)	11 mg/m ³
VLA-ED (ppm)	2 ppm
VLA-EC (mg/m ³)	53 mg/m ³

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VLA-EC (ppm)	10 ppm
Notes	VLI (Agente químico para el que la U.E. estableció en su día un valor límite indicativo), Sen (Sensibilizante).
Regulatory reference	Límites de Exposición Profesional para Agentes Químicos en España 2019. INSHT
United Kingdom - Occupational Exposure Limits	
Local name	n-Butyl acrylate
WEL TWA (mg/m ³)	5 mg/m ³
WEL TWA (ppm)	1 ppm
WEL STEL (mg/m ³)	26 mg/m ³
WEL STEL [ppm]	5 ppm
Regulatory reference	EH40/2005 (Fourth edition, 2020). HSE

BUTYL ACRYLATE (141-32-2)

DNEL/DMEL (Workers)

Acute - local effects, dermal	0.28 mg/cm ²
Long-term - local effects, dermal	0.28 mg/cm ²
Long-term - local effects, inhalation	11 mg/m ³

PNEC (Water)

PNEC aqua (freshwater)	0.003 mg/l
PNEC aqua (marine water)	0.0003 mg/l
PNEC aqua (intermittent, freshwater)	0.011 mg/l

PNEC (Sediment)

PNEC sediment (freshwater)	0.034 mg/kg dwt
PNEC sediment (marine water)	0.003 mg/kg dwt

PNEC (Soil)

PNEC soil	1 mg/kg dwt
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PNEC (STP)

PNEC sewage treatment plant	3.5 mg/l
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8.2. Exposure controls

Appropriate engineering controls:

Ensure that there is a suitable ventilation system.

Materials for protective clothing:

GIVE GOOD RESISTANCE: tetrafluoroethylene. GIVE POOR RESISTANCE: natural rubber. neoprene. PVC. viton

Hand protection:

Wear suitable gloves tested to EN374

Eye protection:

Face shield. Use eye protection according to EN 166.

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Skin and body protection:

Protective clothing

Respiratory protection:

Full face mask with filter type A at conc. in air > exposure limit

Environmental exposure controls:

Avoid release to the environment. Do not exceed the occupational exposure limits (OEL).

Other information:

Do not eat, drink or smoke when using this product.

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Physical state	: Liquid
Appearance	: Liquid.
Molecular mass	: 128.17 g/mol
Colour	: Colourless.
Odour	: Irritating/pungent odour. Unpleasant odour.
Odour threshold	: No data available
pH	: No data available
Relative evaporation rate (butylacetate=1)	: 0.4
Melting point	: -65 °C
Freezing point	: No data available
Boiling point	: 147 °C (1013 hPa)
Flash point	: 38 °C (1013 hPa)
Critical temperature	: 327 °C
Auto-ignition temperature	: 275 °C (1013 hPa, DIN 51794: Self-ignition temperature)
Decomposition temperature	: No data available
Flammability (solid, gas)	: No data available
Vapour pressure	: 5 hPa (22 °C)
Critical pressure	: 29377 hPa
Relative vapour density at 20 °C	: 4.4
Relative density	: 0.9 (20 °C)
Relative density of saturated gas/air mixture	: 1.02
Density	: 889.8 kg/m ³
Solubility	: Poorly soluble in water. Soluble in ethanol. Soluble in ether. Soluble in acetone. Water: 0.17 g/100ml (20 °C, OECD 105: Water Solubility) Ethanol: soluble Ether: soluble Acetone: soluble
Partition coefficient n-octanol/water (Log Pow)	: 2.38 (Experimental value, OECD 107: Partition Coefficient (n-octanol/water): Shake Flask Method, 25 °C)
Viscosity, kinematic	: 0.989 mm ² /s
Viscosity, dynamic	: 0.88 mPa·s (20 °C)
Explosive properties	: No data available
Oxidising properties	: No data available
Lower explosive limit (LEL)	: 1.25 vol %
Upper explosive limit (UEL)	: 8 vol %

9.2. Other information

Specific conductivity	: 3580 pS/m
SAPT	: > 50 °C at the inhibitor level not less than 13 ppm
Saturation concentration	: 28 g/m ³
VOC content	: 100 %
Other properties	: Gas/vapour heavier than air at 20°C. Clear. Slightly volatile. Neutral reaction.

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SECTION 10: Stability and reactivity

10.1. Reactivity

Reacts violently with (strong) oxidizers: (increased) risk of fire/explosion. Unstabilized product polymerizes on exposure to light: pressure rise and possible bursting of container. Unstabilized product polymerizes on exposure to some compounds: pressure rise and possible bursting of container. Polymerizes on exposure to temperature rise: pressure rise and possible bursting of container. Decomposes slowly on exposure to water (moisture).

10.2. Chemical stability

Unstable on exposure to heat. Unstable on exposure to moisture.

10.3. Possibility of hazardous reactions

Hazardous polymerization may occur if exposed to high temperature.

10.4. Conditions to avoid

Direct sunlight. Heat. high temperatures, naked flames. Avoid contact with hot surfaces. Avoid oxygen content above the product of less than 5 %.

10.5. Incompatible materials

Strong acids. Strong acids. Oxidizing materials. Organic materials. Combustible materials. reducing agents.

10.6. Hazardous decomposition products

Under normal conditions of storage and use, hazardous decomposition products should not be produced.

SECTION 11: Toxicological information

11.1. Information on toxicological effects

Acute toxicity (oral) : Not classified (Based on available data, the classification criteria are not met)
Acute toxicity (dermal) : Not classified
Acute toxicity (inhalation) : Harmful if inhaled.

BUTYL ACRYLATE (141-32-2)

LD50 oral rat	3150 mg/kg bodyweight (Equivalent or similar to OECD 401, Rat, Experimental value, Oral, 7 day(s))
LD50 dermal rabbit	2000 mg/kg bodyweight (24 h, Rabbit, Male, Experimental value, Dermal)
LC50 Inhalation - Rat	10.3 mg/l (Equivalent or similar to OECD 403, 4 h, Rat, Male / female, Experimental value, Inhalation (vapours), 14 day(s))

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 (Based on available data, the classification criteria are not met)
Carcinogenicity : Not classified (Based on available data, the classification criteria are not met)

Reproductive toxicity : Not classified

STOT-single exposure : May cause respiratory irritation.

STOT-repeated exposure : Not classified (Based on available data, the classification criteria are not met)

Aspiration hazard : Not classified

BUTYL ACRYLATE (141-32-2)

Viscosity, kinematic	0.989 mm ² /s
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Potential adverse human health effects and symptoms : Practically non-toxic if swallowed (LD50 oral, rat > 2000 mg/kg). Causes skin irritation. May cause respiratory irritation. Causes serious eye irritation.

BUTYL ACRYLATE

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according to Regulation (EC) No. 1907/2006 (REACH) with its amendment Regulation (EU) 2015/830

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. Toxic to fishes. Fouling to shoreline. Inhibition of activated sludge. Toxic to algae.
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	

BUTYL ACRYLATE (141-32-2)

LC50 fish 1	5.2 mg/l (EPA OTS 797.1400, 96 h, Oncorhynchus mykiss, Semi-static system, Fresh water, Experimental value, GLP)
EC50 Daphnia 1	8.2 mg/l (EPA OTS 797.1300, 48 h, Daphnia magna, Flow-through system, Fresh water, Experimental value, Locomotor effect)
EC50 96h algae (1)	2.65 mg/l Test organisms (species): Pseudokirchneriella subcapitata (previous names: Raphidocelis subcapitata, Selenastrum capricornutum)
ErC50 (algae)	1.71 mg/l (OECD 201: Alga, Growth Inhibition Test, 72 h, Desmodesmus subspicatus, Static system, Fresh water, Experimental value, GLP)

12.2. Persistence and degradability

BUTYL ACRYLATE (141-32-2)

Persistence and degradability	Readily biodegradable in water.
Biochemical oxygen demand (BOD)	0.91 g O ₂ /g substance
Chemical oxygen demand (COD)	1.674 g O ₂ /g substance
ThOD	2.25 g O ₂ /g substance

12.3. Bioaccumulative potential

BUTYL ACRYLATE (141-32-2)

BCF other aquatic organisms 1	17.3 l/kg (BCFBAF v3.01, Calculated value)
Partition coefficient n-octanol/water (Log Pow)	2.38 (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

BUTYL ACRYLATE (141-32-2)

Partition coefficient n-octanol/water (Log Koc)	1.6 – 2.2 (log Koc, EPA OTS 796.2750: Sediment and Soil Adsorption Isotherm, Experimental value, GLP)
Ecology - soil	Highly mobile in soil.

12.5. Results of PBT and vPvB assessment

BUTYL ACRYLATE (141-32-2)

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

No additional information available






SECTION 13: Disposal considerations

13.1. Waste treatment methods

Regional legislation (waste)	: Disposal must be done according to official regulations.
Waste treatment methods	: Must follow special treatment according to local regulation.
Sewage disposal recommendations	: Disposal must be done according to official regulations.
Product/Packaging disposal recommendations	: Do not discharge into drains or the environment. 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. Recycle by distillation. Do not landfill. Incinerate under surveillance with energy recovery. Dilute. May be discharged to wastewater treatment installation.
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.
European List of Waste (LoW) code	: 15 01 10* - packaging containing residues of or contaminated by dangerous substances 16 05 06* - laboratory chemicals consisting of or containing dangerous substances including mixtures of laboratory chemicals

SECTION 14: Transport information

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

ADR	IMDG	IATA	ADN	RID
14.1. UN number				
UN 2348	UN 2348	UN 2348	UN 2348	UN 2348
14.2. UN proper shipping name				
Butyl acrylates, stabilized	butyl acrylates, stabilized	Butyl acrylates, stabilized	Butyl acrylates, stabilized	Butyl acrylates, stabilized
Transport document description				
UN 2348 Butyl acrylates, stabilized, 3, III, (D/E)	UN 2348 butyl acrylates, stabilized, 3, III	UN 2348 Butyl acrylates, stabilized, 3, III	UN 2348 Butyl acrylates, stabilized, 3, III	UN 2348 Butyl acrylates, stabilized, 3, III
14.3. Transport hazard class(es)				
3	3	3	3	3
				
14.4. Packing group				
III	III	III	III	III
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				

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Safety Data Sheet

according to Regulation (EC) No. 1907/2006 (REACH) with its amendment Regulation (EU) 2015/830

14.6. Special precautions for user

Overland transport

Transport regulations (ADR) : Subject to the provisions
Classification code (ADR) : F1
Hazard identification number (Kemler No.) : 39
Orange plates :



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

Transport by sea

Transport regulations (IMDG) : Subject to the provisions
EmS-No. (Fire) : F-E
EmS-No. (Spillage) : S-D

Air transport

Transport regulations (IATA) : Subject to the provisions

Inland waterway transport

Classification code (ADN) : F1
Carriage permitted (ADN) : T

Rail transport

Transport regulations (RID) : Subject to the provisions
Classification code (RID) : F1

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

Not applicable

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
40.	BUTYL 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.

BUTYL ACRYLATE is not on the REACH Candidate List

BUTYL ACRYLATE is not on the REACH Annex XIV List

BUTYL 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.

BUTYL 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 1, Slightly hazardous to water (Classification according to AwSV; ID No. 12)

Hazardous Incident Ordinance (12. BImSchV) : Is not subject of the Hazardous Incident Ordinance (12. BImSchV)

Technical Instructions on Air Quality Control (TA Luft) : 5.2.5 Organic Substances. Class I

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Denmark

Class for fire hazard	: Class II-1
Store unit	: 5 liter
Classification remarks	: R10 <H226;H315;H317;H319;H332;H335;H412>; Emergency management guidelines for the storage of flammable liquids must be followed
Danish National Regulations	: Young people below the age of 18 years are not allowed to use the product

15.2. Chemical safety assessment

A chemical safety assessment has been carried out

SECTION 16: Other information

Indication of changes:

Version	Date of change	Section	Comments
1.0	21/09/2011	All	First edition created according to recommendations of Regulations (EC) #1907/2006
1.1	21/07/2014	3	The hazard classification was modified according to the updated dossier
2.0	02/04/2018	1-16, Annex	SDS have been corrected in according to new data of Registration dossier, Chemical Safety Report, and new Transport information
2.1	19/10/2018	9	Physical and chemical properties were updated.
3.0	06/10/2020	All	All sections were updated, the document format was changed.

Full text of H- and EUH-statements:

Acute Tox. 4 (Inhalation)	Acute toxicity (inhal.), 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. 3	Flammable liquids, Category 3
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
H226	Flammable liquid and vapour.
H302	Harmful if swallowed.
H315	Causes skin irritation.
H317	May cause an allergic skin reaction.
H319	Causes serious eye irritation.
H332	Harmful if inhaled.
H335	May cause respiratory irritation.
H412	Harmful to aquatic life with long lasting effects.

Full text of use descriptors

ERC1	Manufacture of the substance
ERC6a	Use of intermediate
ERC6c	Use of monomer in polymerisation processes at industrial site (inclusion or not into/onto article)

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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
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
PROC5	Mixing or blending in batch processes
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 mixture 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

SDS EU (REACH Annex II)

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

Product exposure scenario(s)

ES Type	ES title
Worker	Manufacture and distribution of the substance
Worker	Polymerisation at production facilities
Worker	Polymerisation at downstream user facilities
Worker	Use as an intermediate
Worker	Use in laboratories

BUTYL ACRYLATE

Annex to the safety data sheet: Exposure scenario

CAS-No.: 141-32-2 Product form: Substance Physical state: Liquid Substance type: Mono-constituent

1. ES-1: Manufacture and distribution of the substance

1.1. Title section

Manufacture and distribution of the substance

ES Ref.: ES-1
ES Type: Worker

Company ES code: ES-1
Association ref code: M-1

Environment

CS-1	Production of chemicals	ERC1
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Worker

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	Chemical production or refinery in closed continuous process with occasional controlled exposure or processes with equivalent containment conditions	PROC2
CS-5	Chemical production or refinery in closed continuous process with occasional controlled exposure or processes with equivalent containment conditions	PROC2
CS-6	Manufacture or formulation in the chemical industry in closed batch processes with occasional controlled exposure or processes with equivalent containment condition	PROC3
CS-7	Manufacture or formulation in the chemical industry in closed batch processes with occasional controlled exposure or processes with equivalent containment condition	PROC3
CS-8	Transfer of substance or mixture (charging and discharging) at non-dedicated facilities	PROC8a
CS-9	Transfer of substance or mixture (charging and discharging) at non-dedicated facilities	PROC8a
CS-10	Transfer of substance or mixture (charging and discharging) at dedicated facilities	PROC8b
CS-11	Transfer of substance or mixture (charging and discharging) at dedicated facilities	PROC8b
CS-12	Transfer of substance or mixture (charging and discharging) at dedicated facilities	PROC8b
CS-13	Transfer of substance or mixture into small containers (dedicated filling line, including weighing)	PROC9

BUTYL ACRYLATE

Annex to the safety data sheet: Exposure scenario

CAS-No.: 141-32-2 Product form: Substance Physical state: Liquid Substance type: Mono-constituent

CS-14	Transfer of substance or mixture into small containers (dedicated filling line, including weighing)	PROC9
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Processes, tasks, activities covered	Industrial useX ManufactureX
Assessment method	EasyTRA 4.0.0

1.2. Conditions of use affecting exposure

1.2.1. Control of environmental exposure: Production of chemicals (ERC1)

ERC1	Manufacture of the substance
Assessment method	EUSES

Product (article) characteristics

Physical form of product	Liquid
Concentration of substance in product	≈ 100 %
Vapour pressure	5 hPa
Viscosity, dynamic	1 mPa·s

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

Fraction of EU tonnage used in region:	0
Amount per use	280000 t/yr
Daily amount per site	933000 kg/day
Fraction of Regional tonnage used locally:	100 %
Emission days	300 days/yr

Conditions and measures related to sewage treatment plant

Municipal Sewage Treatment Plant	2000 m ³ /d
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Other conditions affecting environmental exposure

Local freshwater dilution factor:	10
Local marine water dilution factor:	100
Receiving surface water flow is 18000 m ³ /d	

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 %
Vapour pressure	5 hPa
Viscosity, dynamic	1 mPa·s
Viscosity, kinematic	33 mm ² /s

BUTYL ACRYLATE

Annex to the safety data sheet: Exposure scenario

CAS-No.: 141-32-2 Product form: Substance Physical state: Liquid Substance type: Mono-constituent

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

Covers exposure up to	5 days/week
Exposure duration	> 4 h/day

Technical and organisational conditions and measures

Local exhaust ventilation	None
Open windows during application to ensure natural ventilation	

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

Use eye protection according to EN 166.	
According to the conditions of use, protective gloves, apron, boots, head and face protection must be worn	
Respiratory protection not applicable	
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	

Other conditions affecting workers exposure

Exposed skin surface assumed:	Palm of one hand
Indoor use	

Additional good practice advice. Obligations according to Article 37(4) of REACH do not apply

See chapter 8 of the safety data sheet (Environmental exposure controls).

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 %
Vapour pressure	5 hPa
Viscosity, dynamic	1 mPa·s
Viscosity, kinematic	33 mm ² /s

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

Covers exposure up to	5 days/week
Exposure duration	> 4 h/day

Technical and organisational conditions and measures

Local exhaust ventilation	90%. Effectiveness
Open windows during application to ensure natural ventilation	

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

Use eye protection according to EN 166.	
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BUTYL ACRYLATE

Annex to the safety data sheet: Exposure scenario

CAS-No.: 141-32-2 Product form: Substance Physical state: Liquid Substance type: Mono-constituent

According to the conditions of use, protective gloves, apron, boots, head and face protection must be worn	
Respiratory protection not applicable	
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	

Other conditions affecting workers exposure

Exposed skin surface assumed:	Palm of both hands
Indoor use	

Additional good practice advice. Obligations according to Article 37(4) of REACH do not apply

See chapter 8 of the safety data sheet (Environmental exposure controls).

1.2.4. 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 %
Vapour pressure	5 hPa
Viscosity, dynamic	1 mPa·s
Viscosity, kinematic	33 mm ² /s

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

Covers exposure up to	5 days/week
Exposure duration	> 4 h/day

Technical and organisational conditions and measures

Local exhaust ventilation	None
Open windows during application to ensure natural ventilation	

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

Use eye protection according to EN 166.	
According to the conditions of use, protective gloves, apron, boots, head and face protection must be worn	
Respiratory protection	90%. Effectiveness
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	

Other conditions affecting workers exposure

Exposed skin surface assumed:	Palm of both hands
Indoor use	

BUTYL ACRYLATE

Annex to the safety data sheet: Exposure scenario

CAS-No.: 141-32-2 Product form: Substance Physical state: Liquid Substance type: Mono-constituent

Additional good practice advice. Obligations according to Article 37(4) of REACH do not apply

See chapter 8 of the safety data sheet (Environmental exposure controls).

1.2.5. 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 %
Vapour pressure	5 hPa
Viscosity, dynamic	1 mPa·s
Viscosity, kinematic	33 mm ² /s

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

Covers exposure up to	5 days/week
Exposure duration	> 4 h/day

Technical and organisational conditions and measures

Provide enhanced general ventilation by mechanical means	70%. Effectiveness
Local exhaust ventilation	None
Open windows during application to ensure natural ventilation	

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

Use eye protection according to EN 166.	
According to the conditions of use, protective gloves, apron, boots, head and face protection must be worn	
Respiratory protection not applicable	
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	

Other conditions affecting workers exposure

Exposed skin surface assumed:	Palm of both hands
Indoor use	

Additional good practice advice. Obligations according to Article 37(4) of REACH do not apply

See chapter 8 of the safety data sheet (Environmental exposure controls).

1.2.6. 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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BUTYL ACRYLATE

Annex to the safety data sheet: Exposure scenario

CAS-No.: 141-32-2 Product form: Substance Physical state: Liquid Substance type: Mono-constituent

Product (article) characteristics

Physical form of product	Liquid
Concentration of substance in product	100 %
Vapour pressure	5 hPa
Viscosity, dynamic	1 mPa·s
Viscosity, kinematic	33 mm ² /s

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

Covers exposure up to	5 days/week
Exposure duration	> 4 h/day

Technical and organisational conditions and measures

Local exhaust ventilation	90%. Effectiveness
Open windows during application to ensure natural ventilation	

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

Use eye protection according to EN 166.	
According to the conditions of use, protective gloves, apron, boots, head and face protection must be worn	
Respiratory protection not applicable	
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	

Other conditions affecting workers exposure

Exposed skin surface assumed:	Palm of one hand
Indoor use	

Additional good practice advice. Obligations according to Article 37(4) of REACH do not apply

See chapter 8 of the safety data sheet (Environmental exposure controls).

1.2.7. 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 %
Vapour pressure	5 hPa
Viscosity, dynamic	1 mPa·s
Viscosity, kinematic	33 mm ² /s

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

Covers exposure up to	5 days/week
Exposure duration	> 4 h/day

BUTYL ACRYLATE

Annex to the safety data sheet: Exposure scenario

CAS-No.: 141-32-2 Product form: Substance Physical state: Liquid Substance type: Mono-constituent

Technical and organisational conditions and measures

Local exhaust ventilation	90%. Effectiveness
Open windows during application to ensure natural ventilation	

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

Use eye protection according to EN 166.	
According to the conditions of use, protective gloves, apron, boots, head and face protection must be worn	
Respiratory protection	Effectiveness. 95%
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	

Other conditions affecting workers exposure

Exposed skin surface assumed:	Palm of one hand
Indoor use	

Additional good practice advice. Obligations according to Article 37(4) of REACH do not apply

See chapter 8 of the safety data sheet (Environmental exposure controls).

1.2.8. Control of worker exposure: Transfer of substance or mixture (charging and 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 %
Vapour pressure	5 hPa
Viscosity, dynamic	1 mPa·s
Viscosity, kinematic	33 mm ² /s

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

Covers exposure up to	5 days/week
Exposure duration	> 4 h/day

Technical and organisational conditions and measures

Good standard of general ventilation	Effectiveness. 30%
Local exhaust ventilation	None
Open windows during application to ensure natural ventilation	

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

Use eye protection according to EN 166.	
According to the conditions of use, protective gloves, apron, boots, head and face protection must be worn	
Respiratory protection	95%. Effectiveness

BUTYL ACRYLATE

Annex to the safety data sheet: Exposure scenario

CAS-No.: 141-32-2 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

Other conditions affecting workers exposure

Exposed skin surface assumed: Both hands

Indoor use

Additional good practice advice. Obligations according to Article 37(4) of REACH do not apply

See chapter 8 of the safety data sheet (Environmental exposure controls).

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

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

Product (article) characteristics

Physical form of product	Liquid
Concentration of substance in product	100 %
Vapour pressure	5 hPa
Viscosity, dynamic	1 mPa·s
Viscosity, kinematic	33 mm ² /s

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

Covers exposure up to 5 days/week
Exposure duration > 4 h/day

Technical and organisational conditions and measures

Provide enhanced general ventilation by mechanical means	Effectiveness. 70%
Local exhaust ventilation	Effectiveness. 90%
Open windows during application to ensure natural ventilation	

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

Use eye protection according to EN 166.	
According to the conditions of use, protective gloves, apron, boots, head and face protection must be worn	
Respiratory protection	None
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	

Other conditions affecting workers exposure

Exposed skin surface assumed: Both hands

Indoor use

Additional good practice advice. Obligations according to Article 37(4) of REACH do not apply

See chapter 8 of the safety data sheet (Environmental exposure controls).

BUTYL ACRYLATE

Annex to the safety data sheet: Exposure scenario

CAS-No.: 141-32-2 Product form: Substance Physical state: Liquid Substance type: Mono-constituent

1.2.10. Control of worker exposure: Transfer of substance or mixture (charging and 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 %
Vapour pressure	5 hPa
Viscosity, dynamic	1 mPa·s
Viscosity, kinematic	33 mm ² /s

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

Covers exposure up to	5 days/week
Exposure duration	> 4 h/day

Technical and organisational conditions and measures

Local exhaust ventilation	Effectiveness. 95%
Open windows during application to ensure natural ventilation	

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

Use eye protection according to EN 166.	
According to the conditions of use, protective gloves, apron, boots, head and face protection must be worn	
Respiratory protection	None
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	

Other conditions affecting workers exposure

Exposed skin surface assumed:	Both hands
Indoor use	

Additional good practice advice. Obligations according to Article 37(4) of REACH do not apply

See chapter 8 of the safety data sheet (Environmental exposure controls).

1.2.11. Control of worker exposure: Transfer of substance or mixture (charging and 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 %
Vapour pressure	5 hPa
Viscosity, dynamic	1 mPa·s
Viscosity, kinematic	33 mm ² /s

BUTYL ACRYLATE

Annex to the safety data sheet: Exposure scenario

CAS-No.: 141-32-2 Product form: Substance Physical state: Liquid Substance type: Mono-constituent

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

Covers exposure up to	5 days/week
Exposure duration	> 4 h/day

Technical and organisational conditions and measures

Local exhaust ventilation	None
Open windows during application to ensure natural ventilation	

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

Use eye protection according to EN 166.	
According to the conditions of use, protective gloves, apron, boots, head and face protection must be worn	
Respiratory protection	95%. Effectiveness
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	

Other conditions affecting workers exposure

Exposed skin surface assumed:	Both hands
Indoor use	

Additional good practice advice. Obligations according to Article 37(4) of REACH do not apply

See chapter 8 of the safety data sheet (Environmental exposure controls).

1.2.12. Control of worker exposure: Transfer of substance or mixture (charging and 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 %
Vapour pressure	5 hPa
Viscosity, dynamic	1 mPa·s
Viscosity, kinematic	33 mm ² /s

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

Covers exposure up to	5 days/week
Exposure duration	> 4 h/day

Technical and organisational conditions and measures

Local exhaust ventilation	95%. Effectiveness
Open windows during application to ensure natural ventilation	

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

Use eye protection according to EN 166.	
According to the conditions of use, protective gloves, apron, boots, head and face protection must be worn	

BUTYL ACRYLATE

Annex to the safety data sheet: Exposure scenario

CAS-No.: 141-32-2 Product form: Substance Physical state: Liquid Substance type: Mono-constituent

Respiratory protection	None
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	

Other conditions affecting workers exposure

Exposed skin surface assumed:	Both hands
Indoor use	

Additional good practice advice. Obligations according to Article 37(4) of REACH do not apply

See chapter 8 of the safety data sheet (Environmental exposure controls).

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

PROC9	Transfer of substance or mixture into small containers (dedicated filling line, including weighing)
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Product (article) characteristics

Physical form of product	Liquid
Concentration of substance in product	100 %
Vapour pressure	5 hPa
Viscosity, dynamic	1 mPa·s
Viscosity, kinematic	33 mm ² /s

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

Covers exposure up to	5 days/week
Exposure duration	> 4 h/day

Technical and organisational conditions and measures

Provide enhanced general ventilation by mechanical means	70%. Effectiveness
Local exhaust ventilation	90%. Effectiveness
Open windows during application to ensure natural ventilation	

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

Use eye protection according to EN 166.	
According to the conditions of use, protective gloves, apron, boots, head and face protection must be worn	
Respiratory protection	None
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	

Other conditions affecting workers exposure

Exposed skin surface assumed:	Palm of both hands
Indoor use	

BUTYL ACRYLATE

Annex to the safety data sheet: Exposure scenario

CAS-No.: 141-32-2 Product form: Substance Physical state: Liquid Substance type: Mono-constituent

Additional good practice advice. Obligations according to Article 37(4) of REACH do not apply

See chapter 8 of the safety data sheet (Environmental exposure controls).

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

PROC9	Transfer of substance or mixture into small containers (dedicated filling line, including weighing)
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Product (article) characteristics

Physical form of product	Liquid
Concentration of substance in product	100 %
Vapour pressure	5 hPa
Viscosity, dynamic	1 mPa·s
Viscosity, kinematic	33 mm ² /s

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

Covers exposure up to	5 days/week
Exposure duration	> 4 h/day

Technical and organisational conditions and measures

Good standard of general ventilation	30%. Effectiveness
Local exhaust ventilation	None
Open windows during application to ensure natural ventilation	

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

Use eye protection according to EN 166.	
According to the conditions of use, protective gloves, apron, boots, head and face protection must be worn	
Respiratory protection	95%. Effectiveness
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	

Other conditions affecting workers exposure

Exposed skin surface assumed:	Palm of both hands
Indoor use	

Additional good practice advice. Obligations according to Article 37(4) of REACH do not apply

See chapter 8 of the safety data sheet (Environmental exposure controls).

1.3. Exposure estimation and reference to its source

1.3.1. Environmental release and exposure Production of chemicals (ERC1)

Information for contributing exposure scenario

Release route	Release rate	Release estimation method
Release fraction to air from process (initial release prior to RMM):	0.01 %	

BUTYL ACRYLATE

Annex to the safety data sheet: Exposure scenario

CAS-No.: 141-32-2 Product form: Substance Physical state: Liquid Substance type: Mono-constituent

Release fraction to wastewater from process (initial release prior to RMM):	0.3 %				
Release fraction to soil from process (initial release prior to RMM):	0.001 %				
Protection target	Unit	Exposure estimation	PNEC	RCR	Assessment method
Freshwater	mg/l	0.00219	0.003	0.805098	EASY TRA v4.1
Marine water	mg/l	0.000196	0.0003	0.725136	EASY TRA v4.1
Freshwater sediment	mg/kg wet weight	0.027242	0.034	0.805975	EASY TRA v4.1
Marine water sediment	mg/kg dwt	0.002436	0.003	0.720588	EASY TRA v4.1
Sewage treatment plant	mg/l	0.01	3.5	0.002857	EASY TRA v4.1
Soil	mg/kg dwt	0.015282	1	0.015282	EASY TRA v4.1

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
Inhalation - Long-term - systemic effects	0.053404 mg/m ³	0.004855	EASY TRA v4.1
Sum RCR - Long-term - systemic effects		0.005	

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
Inhalation - Long-term - systemic effects	2.67 mg/m ³	0.242744	EASY TRA v4.1
Sum RCR - Long-term - systemic effects		0.243	

1.3.4. 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
Inhalation - Long-term - systemic effects	2.67	0.242744	EASY TRA v4.1
Sum RCR - Long-term - systemic effects		0.243	

1.3.5. 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			
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BUTYL ACRYLATE

Annex to the safety data sheet: Exposure scenario

CAS-No.: 141-32-2 Product form: Substance Physical state: Liquid Substance type: Mono-constituent

Route of exposure and type of effects	Exposure estimate	RCR	Method
Inhalation - Long-term - systemic effects	8.011 mg/m ³	0.728233	EASY TRA v4.1
Sum RCR - Long-term - systemic effects		0.728	

1.3.6. 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
Inhalation - Long-term - systemic effects	5.34	0.485489	EASY TRA v4.1
Sum RCR - Long-term - systemic effects		0.485	

1.3.7. 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
Inhalation - Long-term - systemic effects	2.67 mg/m ³	0.242744	EASY TRA v4.1
Sum RCR - Long-term - systemic effects		0.243	

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

Information for contributing exposure scenario			
Route of exposure and type of effects	Exposure estimate	RCR	Method
Inhalation - Long-term - systemic effects	9.346 mg/m ³	0.849605	EASY TRA v4.1
Sum RCR - Long-term - systemic effects		0.85	

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

Information for contributing exposure scenario			
Route of exposure and type of effects	Exposure estimate	RCR	Method
Inhalation - Long-term - systemic effects	8.011	0.728233	EASY TRA v4.1
Sum RCR - Long-term - systemic effects		0.728	

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

Information for contributing exposure scenario			
Route of exposure and type of effects	Exposure estimate	RCR	Method
Inhalation - Long-term - systemic effects	6.675 mg/m ³	0.606861	EASY TRA v4.1

BUTYL ACRYLATE

Annex to the safety data sheet: Exposure scenario

CAS-No.: 141-32-2 Product form: Substance Physical state: Liquid Substance type: Mono-constituent

Sum RCR - Long-term - systemic effects		0.607	
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1.3.11. Worker exposure Transfer of substance or mixture (charging and discharging) at dedicated facilities (PROC8b)

Information for contributing exposure scenario

Route of exposure and type of effects	Exposure estimate	RCR	Method
Inhalation - Long-term - systemic effects	6.675	0.606861	EASY TRA v4.1
Sum RCR - Long-term - systemic effects		0.607	

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

Information for contributing exposure scenario

Route of exposure and type of effects	Exposure estimate	RCR	Method
Inhalation - Long-term - systemic effects	6.675 mg/m ³	0.606861	EASY TRA v4.1
Sum RCR - Long-term - systemic effects		0.607	

1.3.13. 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
Inhalation - Long-term - systemic effects	8.011 mg/m ³	0.728233	EASY TRA v4.1
Sum RCR - Long-term - systemic effects		0.728	

1.3.14. 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
Inhalation - Long-term - systemic effects	9.346 mg/m ³	0.849605	EASY TRA v4.1
Sum RCR - Long-term - systemic effects		0.85	

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

BUTYL ACRYLATE

Annex to the safety data sheet: Exposure scenario

CAS-No.: 141-32-2 Product form: Substance Physical state: Liquid Substance type: Mono-constituent

2. ES-2: Polymerisation at production facilities

2.1. Title section

Polymerisation at production facilities

ES Ref.: ES-2
ES Type: Worker

Company ES code: ES-2
Association ref code: IW-2

Environment

CS-1	Use of monomer in polymerisation processes at industrial site (inclusion or not into/onto article)	ERC6c
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Worker

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	Chemical production or refinery in closed continuous process with occasional controlled exposure or processes with equivalent containment conditions	PROC2
CS-5	Chemical production or refinery in closed continuous process with occasional controlled exposure or processes with equivalent containment conditions	PROC2
CS-6	Manufacture or formulation in the chemical industry in closed batch processes with occasional controlled exposure or processes with equivalent containment condition	PROC3
CS-7	Manufacture or formulation in the chemical industry in closed batch processes with occasional controlled exposure or processes with equivalent containment condition	PROC3
CS-8	Chemical production where opportunity for exposure arises	PROC4
CS-9	Chemical production where opportunity for exposure arises	PROC4
CS-10	Mixing or blending in batch processes	PROC5
CS-11	Mixing or blending in batch processes	PROC5
CS-12	Transfer of substance or mixture (charging and discharging) at non-dedicated facilities	PROC8a
CS-13	Transfer of substance or mixture (charging and discharging) at non-dedicated facilities	PROC8a
CS-14	Transfer of substance or mixture (charging and discharging) at dedicated facilities	PROC8b

BUTYL ACRYLATE

Annex to the safety data sheet: Exposure scenario

CAS-No.: 141-32-2 Product form: Substance Physical state: Liquid Substance type: Mono-constituent

CS-15	Transfer of substance or mixture (charging and discharging) at dedicated facilities	PROC8b
CS-16	Transfer of substance or mixture into small containers (dedicated filling line, including weighing)	PROC9
CS-17	Transfer of substance or mixture into small containers (dedicated filling line, including weighing)	PROC9

Processes, tasks, activities covered	Industrial useX
Assessment method	EasyTRA 4.0.0

2.2. Conditions of use affecting exposure

2.2.1. Control of environmental exposure: Use of monomer in polymerisation processes at industrial site (inclusion or not into/onto article) (ERC6c)

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

Product (article) characteristics

Physical form of product	Liquid
Concentration of substance in product	100 %
Vapour pressure	5 hPa
Viscosity, dynamic	1 mPa·s

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

Amount per use	12900 t/yr
Daily amount per site	8600 kg/day
Fraction of Regional tonnage used locally:	100 %
Emission days	300 days/yr

Conditions and measures related to sewage treatment plant

Municipal Sewage Treatment Plant	2000 m ³ /d
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Other conditions affecting environmental exposure

Local freshwater dilution factor:	10
Local marine water dilution factor:	100
Receiving surface water flow is 18000 m ³ /d	

2.2.2. 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 %
Vapour pressure	5 hPa

BUTYL ACRYLATE

Annex to the safety data sheet: Exposure scenario

CAS-No.: 141-32-2 Product form: Substance Physical state: Liquid Substance type: Mono-constituent

Viscosity, dynamic	1 mPa·s
Viscosity, kinematic	33 mm ² /s

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

Covers exposure up to Exposure duration	5 days/week > 4 h/day
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Technical and organisational conditions and measures

Open windows during application to ensure natural ventilation	
Local exhaust ventilation	None

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

Use eye protection according to EN 166.	
According to the conditions of use, protective gloves, apron, boots, head and face protection must be worn	
Respiratory protection not applicable	
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	

Other conditions affecting workers exposure

Exposed skin surface assumed:	Palm of one hand
Indoor use	

Additional good practice advice. Obligations according to Article 37(4) of REACH do not apply

See chapter 8 of the safety data sheet (Environmental exposure controls).

2.2.3. 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 %
Vapour pressure	5 hPa
Viscosity, dynamic	1 mPa·s
Viscosity, kinematic	33 mm ² /s

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

Covers exposure up to Exposure duration	5 days/week > 4 h/day
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Technical and organisational conditions and measures

Local exhaust ventilation	90%. Effectiveness
Open windows during application to ensure natural ventilation	

BUTYL ACRYLATE

Annex to the safety data sheet: Exposure scenario

CAS-No.: 141-32-2 Product form: Substance Physical state: Liquid Substance type: Mono-constituent

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

Use eye protection according to EN 166.	
According to the conditions of use, protective gloves, apron, boots, head and face protection must be worn	
Respiratory protection not applicable	
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	

Other conditions affecting workers exposure

Exposed skin surface assumed:	Palm of both hands
Indoor use	

Additional good practice advice. Obligations according to Article 37(4) of REACH do not apply

See chapter 8 of the safety data sheet (Environmental exposure controls).

2.2.4. 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 %
Vapour pressure	5 hPa
Viscosity, dynamic	1 mPa·s
Viscosity, kinematic	33 mm ² /s

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

Covers exposure up to	5 days/week
Exposure duration	> 4 h/day

Technical and organisational conditions and measures

Local exhaust ventilation	None
Open windows during application to ensure natural ventilation	

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

Use eye protection according to EN 166.	
According to the conditions of use, protective gloves, apron, boots, head and face protection must be worn	
Respiratory protection	90%. Effectiveness
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	

BUTYL ACRYLATE

Annex to the safety data sheet: Exposure scenario

CAS-No.: 141-32-2 Product form: Substance Physical state: Liquid Substance type: Mono-constituent

Other conditions affecting workers exposure

Exposed skin surface assumed:	Palm of both hands
Indoor use	

Additional good practice advice. Obligations according to Article 37(4) of REACH do not apply

See chapter 8 of the safety data sheet (Environmental exposure controls).

2.2.5. 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 %
Vapour pressure	5 hPa
Viscosity, dynamic	1 mPa·s
Viscosity, kinematic	33 mm ² /s

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

Covers exposure up to	5 days/week
Exposure duration	> 4 h/day

Technical and organisational conditions and measures

Provide enhanced general ventilation by mechanical means	70%. Effectiveness
Local exhaust ventilation	None
Open windows during application to ensure natural ventilation	

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

Use eye protection according to EN 166.	
According to the conditions of use, protective gloves, apron, boots, head and face protection must be worn	
Respiratory protection	90%. Effectiveness
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	

Other conditions affecting workers exposure

Exposed skin surface assumed:	Palm of both hands
Indoor use	

Additional good practice advice. Obligations according to Article 37(4) of REACH do not apply

See chapter 8 of the safety data sheet (Environmental exposure controls).

BUTYL ACRYLATE

Annex to the safety data sheet: Exposure scenario

CAS-No.: 141-32-2 Product form: Substance Physical state: Liquid Substance type: Mono-constituent

2.2.6. 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 %
Vapour pressure	5 hPa
Viscosity, dynamic	1 mPa·s
Viscosity, kinematic	33 mm ² /s

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

Covers exposure up to	5 days/week
Exposure duration	> 4 h/day

Technical and organisational conditions and measures

Local exhaust ventilation	90%. Effectiveness
Open windows during application to ensure natural ventilation	

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

Use eye protection according to EN 166.	
According to the conditions of use, protective gloves, apron, boots, head and face protection must be worn	
Respiratory protection not applicable	
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	

Other conditions affecting workers exposure

Exposed skin surface assumed:	Palm of one hand
Indoor use	

Additional good practice advice. Obligations according to Article 37(4) of REACH do not apply

See chapter 8 of the safety data sheet (Environmental exposure controls).

2.2.7. 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 %
Vapour pressure	5 hPa
Viscosity, dynamic	1 mPa·s

BUTYL ACRYLATE

Annex to the safety data sheet: Exposure scenario

CAS-No.: 141-32-2 Product form: Substance Physical state: Liquid Substance type: Mono-constituent

Viscosity, kinematic	33 mm ² /s
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Amount used (or contained in articles), frequency and duration of use/exposure

Covers exposure up to	5 days/week
Exposure duration	> 4 h/day

Technical and organisational conditions and measures

Local exhaust ventilation	None
Open windows during application to ensure natural ventilation	

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

Use eye protection according to EN 166.	
According to the conditions of use, protective gloves, apron, boots, head and face protection must be worn	
Respiratory protection	Effectiveness. 90%
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	

Other conditions affecting workers exposure

Exposed skin surface assumed:	Palm of one hand
Indoor use	

Additional good practice advice. Obligations according to Article 37(4) of REACH do not apply

See chapter 8 of the safety data sheet (Environmental exposure controls).

2.2.8. 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 %
Vapour pressure	5 hPa
Viscosity, dynamic	1 mPa·s
Viscosity, kinematic	33 mm ² /s

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

Covers exposure up to	5 days/week
Exposure duration	> 4 h/day

Technical and organisational conditions and measures

Local exhaust ventilation	90%. Effectiveness
Good standard of general ventilation	30%. Effectiveness
Open windows during application to ensure natural ventilation	

BUTYL ACRYLATE

Annex to the safety data sheet: Exposure scenario

CAS-No.: 141-32-2 Product form: Substance Physical state: Liquid Substance type: Mono-constituent

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

Use eye protection according to EN 166.	
According to the conditions of use, protective gloves, apron, boots, head and face protection must be worn	
Respiratory protection	None
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	

Other conditions affecting workers exposure

Exposed skin surface assumed:	Palm of both hands
Indoor use	

Additional good practice advice. Obligations according to Article 37(4) of REACH do not apply

See chapter 8 of the safety data sheet (Environmental exposure controls).

2.2.9. 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 %
Vapour pressure	5 hPa
Viscosity, dynamic	1 mPa·s
Viscosity, kinematic	33 mm ² /s

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

Covers exposure up to	5 days/week
Exposure duration	> 4 h/day

Technical and organisational conditions and measures

Local exhaust ventilation	None
Good standard of general ventilation	30%. Effectiveness
Open windows during application to ensure natural ventilation	

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

Use eye protection according to EN 166.	
According to the conditions of use, protective gloves, apron, boots, head and face protection must be worn	
Respiratory protection	90%. Effectiveness
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	

BUTYL ACRYLATE

Annex to the safety data sheet: Exposure scenario

CAS-No.: 141-32-2 Product form: Substance Physical state: Liquid Substance type: Mono-constituent

Other conditions affecting workers exposure

Exposed skin surface assumed:	Palm of both hands
Indoor use	

Additional good practice advice. Obligations according to Article 37(4) of REACH do not apply

See chapter 8 of the safety data sheet (Environmental exposure controls).

2.2.10. Control of worker exposure: Mixing or blending in batch processes (PROC5)

PROC5	Mixing or blending in batch processes
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Product (article) characteristics

Physical form of product	Liquid
Concentration of substance in product	100 %
Vapour pressure	5 hPa
Viscosity, dynamic	1 mPa·s
Viscosity, kinematic	33 mm ² /s

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

Covers exposure up to	5 days/week
Exposure duration	> 4 h/day

Technical and organisational conditions and measures

Provide enhanced general ventilation by mechanical means	70%. Effectiveness
Local exhaust ventilation	90%. Effectiveness
Open windows during application to ensure natural ventilation	

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

Use eye protection according to EN 166.	
According to the conditions of use, protective gloves, apron, boots, head and face protection must be worn	
Respiratory protection	None
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	

Other conditions affecting workers exposure

Exposed skin surface assumed:	Palm of both hands
Indoor use	

Additional good practice advice. Obligations according to Article 37(4) of REACH do not apply

See chapter 8 of the safety data sheet (Environmental exposure controls).

2.2.11. Control of worker exposure: Mixing or blending in batch processes (PROC5)

PROC5	Mixing or blending in batch processes
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BUTYL ACRYLATE

Annex to the safety data sheet: Exposure scenario

CAS-No.: 141-32-2 Product form: Substance Physical state: Liquid Substance type: Mono-constituent

Product (article) characteristics	
Physical form of product	Liquid
Concentration of substance in product	100 %
Vapour pressure	5 hPa
Viscosity, dynamic	1 mPa·s
Viscosity, kinematic	33 mm ² /s

Amount used (or contained in articles), frequency and duration of use/exposure	
Covers exposure up to	5 days/week
Exposure duration	> 4 h/day

Technical and organisational conditions and measures	
Local exhaust ventilation	95%. Effectiveness
Good standard of general ventilation	30%. Effectiveness
Open windows during application to ensure natural ventilation	

Conditions and measures related to personal protection, hygiene and health evaluation	
Use eye protection according to EN 166.	
According to the conditions of use, protective gloves, apron, boots, head and face protection must be worn	
Respiratory protection	95%. Effectiveness
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	

Other conditions affecting workers exposure	
Exposed skin surface assumed:	Palm of both hands
Indoor use	

Additional good practice advice. Obligations according to Article 37(4) of REACH do not apply	
See chapter 8 of the safety data sheet (Environmental exposure controls).	

2.2.12. Control of worker exposure: Transfer of substance or mixture (charging and 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 %
Vapour pressure	5 hPa
Viscosity, dynamic	1 mPa·s
Viscosity, kinematic	33 mm ² /s

Amount used (or contained in articles), frequency and duration of use/exposure	
Covers exposure up to	5 days/week
Exposure duration	> 4 h/day

BUTYL ACRYLATE

Annex to the safety data sheet: Exposure scenario

CAS-No.: 141-32-2 Product form: Substance Physical state: Liquid Substance type: Mono-constituent

Technical and organisational conditions and measures

Provide enhanced general ventilation by mechanical means	Effectiveness. 70%
Local exhaust ventilation	Effectiveness. 90%
Open windows during application to ensure natural ventilation	

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

Use eye protection according to EN 166.	
According to the conditions of use, protective gloves, apron, boots, head and face protection must be worn	
Respiratory protection	None
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	

Other conditions affecting workers exposure

Exposed skin surface assumed:	Both hands
Indoor use	

Additional good practice advice. Obligations according to Article 37(4) of REACH do not apply

See chapter 8 of the safety data sheet (Environmental exposure controls).

2.2.13. Control of worker exposure: Transfer of substance or mixture (charging and 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 %
Vapour pressure	5 hPa
Viscosity, dynamic	1 mPa·s
Viscosity, kinematic	33 mm ² /s

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

Covers exposure up to	5 days/week
Exposure duration	> 4 h/day

Technical and organisational conditions and measures

Good standard of general ventilation	Effectiveness. 30%
Local exhaust ventilation	None
Open windows during application to ensure natural ventilation	

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

Use eye protection according to EN 166.	
According to the conditions of use, protective gloves, apron, boots, head and face protection must be worn	
Respiratory protection	95%. Effectiveness

BUTYL ACRYLATE

Annex to the safety data sheet: Exposure scenario

CAS-No.: 141-32-2 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

Other conditions affecting workers exposure

Exposed skin surface assumed: Both hands

Indoor use

Additional good practice advice. Obligations according to Article 37(4) of REACH do not apply

See chapter 8 of the safety data sheet (Environmental exposure controls).

2.2.14. Control of worker exposure: Transfer of substance or mixture (charging and 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 %
Vapour pressure	5 hPa
Viscosity, dynamic	1 mPa·s
Viscosity, kinematic	33 mm ² /s

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

Covers exposure up to 5 days/week
Exposure duration > 4 h/day

Technical and organisational conditions and measures

Local exhaust ventilation Effectiveness. 95%

Open windows during application to ensure natural ventilation

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

Use eye protection according to EN 166.

According to the conditions of use, protective gloves, apron, boots, head and face protection must be worn

Respiratory protection None

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

Other conditions affecting workers exposure

Exposed skin surface assumed: Both hands

Indoor use

Additional good practice advice. Obligations according to Article 37(4) of REACH do not apply

See chapter 8 of the safety data sheet (Environmental exposure controls).

BUTYL ACRYLATE

Annex to the safety data sheet: Exposure scenario

CAS-No.: 141-32-2 Product form: Substance Physical state: Liquid Substance type: Mono-constituent

2.2.15. Control of worker exposure: Transfer of substance or mixture (charging and 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 %
Vapour pressure	5 hPa
Viscosity, dynamic	1 mPa·s
Viscosity, kinematic	33 mm ² /s

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

Covers exposure up to	5 days/week
Exposure duration	> 4 h/day

Technical and organisational conditions and measures

Local exhaust ventilation	None
Open windows during application to ensure natural ventilation	

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

Use eye protection according to EN 166.	
According to the conditions of use, protective gloves, apron, boots, head and face protection must be worn	
Respiratory protection	95%. Effectiveness
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	

Other conditions affecting workers exposure

Exposed skin surface assumed:	Both hands
Indoor use	

Additional good practice advice. Obligations according to Article 37(4) of REACH do not apply

See chapter 8 of the safety data sheet (Environmental exposure controls).

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

PROC9	Transfer of substance or mixture into small containers (dedicated filling line, including weighing)
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Product (article) characteristics

Physical form of product	Liquid
Concentration of substance in product	100 %
Vapour pressure	5 hPa
Viscosity, dynamic	1 mPa·s
Viscosity, kinematic	33 mm ² /s

BUTYL ACRYLATE

Annex to the safety data sheet: Exposure scenario

CAS-No.: 141-32-2 Product form: Substance Physical state: Liquid Substance type: Mono-constituent

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

Covers exposure up to	5 days/week
Exposure duration	> 4 h/day

Technical and organisational conditions and measures

Provide enhanced general ventilation by mechanical means	70%. Effectiveness
Local exhaust ventilation	90%. Effectiveness
Open windows during application to ensure natural ventilation	

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

Use eye protection according to EN 166.	
According to the conditions of use, protective gloves, apron, boots, head and face protection must be worn	
Respiratory protection	None
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	

Other conditions affecting workers exposure

Exposed skin surface assumed:	Palm of both hands
Indoor use	

Additional good practice advice. Obligations according to Article 37(4) of REACH do not apply

See chapter 8 of the safety data sheet (Environmental exposure controls).

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

PROC9	Transfer of substance or mixture into small containers (dedicated filling line, including weighing)
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Product (article) characteristics

Physical form of product	Liquid
Concentration of substance in product	100 %
Vapour pressure	5 hPa
Viscosity, dynamic	1 mPa·s
Viscosity, kinematic	33 mm ² /s

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

Covers exposure up to	5 days/week
Exposure duration	> 4 h/day

Technical and organisational conditions and measures

Good standard of general ventilation	30%. Effectiveness
Local exhaust ventilation	None
Open windows during application to ensure natural ventilation	

BUTYL ACRYLATE

Annex to the safety data sheet: Exposure scenario

CAS-No.: 141-32-2 Product form: Substance Physical state: Liquid Substance type: Mono-constituent

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

Use eye protection according to EN 166.	
According to the conditions of use, protective gloves, apron, boots, head and face protection must be worn	
Respiratory protection	95%. Effectiveness
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	

Other conditions affecting workers exposure

Exposed skin surface assumed:	Palm of both hands
Indoor use	

Additional good practice advice. Obligations according to Article 37(4) of REACH do not apply

See chapter 8 of the safety data sheet (Environmental exposure controls).

2.3. Exposure estimation and reference to its source

2.3.1. Environmental release and exposure Use of monomer in polymerisation processes at industrial site (inclusion or not into/onto article) (ERC6c)

Information for contributing exposure scenario

Release route	Release rate	Release estimation method			
Release fraction to air from process (initial release prior to RMM):	1 %				
Release fraction to wastewater from process (initial release prior to RMM):	1 %				
Release fraction to soil from process (initial release prior to RMM):	0 %				
Protection target	Unit	Exposure estimation	PNEC	RCR	Assessment method
Freshwater	mg/l	0.00219	0.003	0.0027208	EASY TRA v4.1
Marine water	mg/l	0.000196	0.0003	0.725136	EASY TRA v4.1
Freshwater sediment	mg/kg dwt	0.027242	0.034	0.805975	EASY TRA v4.1
Marine water sediment	mg/kg dwt	0.002436	0.003	0.720588	EASY TRA v4.1
Sewage treatment plant	mg/l	0.01	3.5	0.002857	EASY TRA v4.1
Soil	mg/kg dwt	0.010625	1	0.010625	EASY TRA v4.1

2.3.2. 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
Inhalation - Long-term - systemic effects	0.053404 mg/m ³	0.004855	EASY TRA v4.1
Sum RCR - Long-term - systemic effects		0.005	

BUTYL ACRYLATE

Annex to the safety data sheet: Exposure scenario

CAS-No.: 141-32-2 Product form: Substance Physical state: Liquid Substance type: Mono-constituent

2.3.3. 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
Inhalation - Long-term - systemic effects	2.67 mg/m ³	0.242744	EASY TRA v4.1
Sum RCR - Long-term - systemic effects		0.243	

2.3.4. 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
Inhalation - Long-term - systemic effects	2.67 mg/m ³	0.242744	EASY TRA v4.1
Sum RCR - Long-term - systemic effects		0.243	

2.3.5. 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
Inhalation - Long-term - systemic effects	8.011 mg/m ³	0.728233	EASY TRA v4.1
Sum RCR - Long-term - systemic effects		0.728	

2.3.6. 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
Inhalation - Long-term - systemic effects	5.34 mg/m ³	0.485489	EASY TRA v4.1
Sum RCR - Long-term - systemic effects		0.485	

2.3.7. 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
Inhalation - Long-term - systemic effects	5.34 mg/m ³	0.485489	EASY TRA v4.1
Sum RCR - Long-term - systemic effects		0.485	

BUTYL ACRYLATE

Annex to the safety data sheet: Exposure scenario

CAS-No.: 141-32-2 Product form: Substance Physical state: Liquid Substance type: Mono-constituent

2.3.8. 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
Inhalation - Long-term - systemic effects	7.477 mg/m ³	0.679684	EASY TRA v4.1
Sum RCR - Long-term - systemic effects		0.68	

2.3.9. 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
Inhalation - Long-term - systemic effects	7.477 mg/m ³	0.679684	EASY TRA v4.1
Sum RCR - Long-term - systemic effects		0.68	

2.3.10. Worker exposure Mixing or blending in batch processes (PROC5)

Information for contributing exposure scenario			
Route of exposure and type of effects	Exposure estimate	RCR	Method
Inhalation - Long-term - systemic effects	7.477 mg/m ³	0.679684	EASY TRA v4.1
Sum RCR - Long-term - systemic effects		0.68	

2.3.11. Worker exposure Mixing or blending in batch processes (PROC5)

Information for contributing exposure scenario			
Route of exposure and type of effects	Exposure estimate	RCR	Method
Inhalation - Long-term - systemic effects	8.011 mg/m ³	0.728233	EASY TRA v4.1
Sum RCR - Long-term - systemic effects		0.728	

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

Information for contributing exposure scenario			
Route of exposure and type of effects	Exposure estimate	RCR	Method
Inhalation - Long-term - systemic effects	9.346 mg/m ³	0.849605	EASY TRA v4.1
Sum RCR - Long-term - systemic effects		0.85	

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

Information for contributing exposure scenario			
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BUTYL ACRYLATE

Annex to the safety data sheet: Exposure scenario

CAS-No.: 141-32-2 Product form: Substance Physical state: Liquid Substance type: Mono-constituent

Route of exposure and type of effects	Exposure estimate	RCR	Method
Inhalation - Long-term - systemic effects	8.011 mg/m ³	0.728233	EASY TRA v4.1
Sum RCR - Long-term - systemic effects		0.728	

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

Information for contributing exposure scenario			
Route of exposure and type of effects	Exposure estimate	RCR	Method
Inhalation - Long-term - systemic effects	6.675 mg/m ³	0.606861	EASY TRA v4.1
Sum RCR - Long-term - systemic effects		0.607	

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

Information for contributing exposure scenario			
Route of exposure and type of effects	Exposure estimate	RCR	Method
Inhalation - Long-term - systemic effects	6.675 mg/m ³	0.606861	EASY TRA v4.1
Sum RCR - Long-term - systemic effects		0.607	

2.3.16. 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
Inhalation - Long-term - systemic effects	8.011 mg/m ³	0.728233	EASY TRA v4.1
Sum RCR - Long-term - systemic effects		0.728	

2.3.17. 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
Inhalation - Long-term - systemic effects	9.346 mg/m ³	0.849605	EASY TRA v4.1
Sum RCR - Long-term - systemic effects		0.85	

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

BUTYL ACRYLATE

Annex to the safety data sheet: Exposure scenario

CAS-No.: 141-32-2 Product form: Substance Physical state: Liquid Substance type: Mono-constituent

3. ES-3: Polymerisation at downstream user facilities

3.1. Title section

Polymerisation at downstream user facilities

ES Ref.: ES-3
ES Type: Worker

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

Environment

CS-1	Use of monomer in polymerisation processes at industrial site (inclusion or not into/onto article)	ERC6c
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Worker

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	Chemical production or refinery in closed continuous process with occasional controlled exposure or processes with equivalent containment conditions	PROC2
CS-5	Chemical production or refinery in closed continuous process with occasional controlled exposure or processes with equivalent containment conditions	PROC2
CS-6	Manufacture or formulation in the chemical industry in closed batch processes with occasional controlled exposure or processes with equivalent containment condition	PROC3
CS-7	Manufacture or formulation in the chemical industry in closed batch processes with occasional controlled exposure or processes with equivalent containment condition	PROC3
CS-8	Chemical production where opportunity for exposure arises	PROC4
CS-9	Chemical production where opportunity for exposure arises	PROC4
CS-10	Mixing or blending in batch processes	PROC5
CS-11	Mixing or blending in batch processes	PROC5
CS-12	Transfer of substance or mixture (charging and discharging) at non-dedicated facilities	PROC8a
CS-13	Transfer of substance or mixture (charging and discharging) at non-dedicated facilities	PROC8a
CS-14	Transfer of substance or mixture (charging and discharging) at dedicated facilities	PROC8b

BUTYL ACRYLATE

Annex to the safety data sheet: Exposure scenario

CAS-No.: 141-32-2 Product form: Substance Physical state: Liquid Substance type: Mono-constituent

CS-15	Transfer of substance or mixture (charging and discharging) at dedicated facilities	PROC8b
CS-16	Transfer of substance or mixture into small containers (dedicated filling line, including weighing)	PROC9
CS-17	Transfer of substance or mixture into small containers (dedicated filling line, including weighing)	PROC9

Processes, tasks, activities covered	Industrial useX
Assessment method	EasyTRA 4.0.0

3.2. Conditions of use affecting exposure

3.2.1. Control of environmental exposure: Use of monomer in polymerisation processes at industrial site (inclusion or not into/onto article) (ERC6c)

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

Product (article) characteristics

Physical form of product	Liquid
Concentration of substance in product	100 %
Vapour pressure	5 hPa
Viscosity, dynamic	1 mPa·s

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

Amount per use	16300 t/yr
Daily amount per site	8600 kg/day
Fraction of Regional tonnage used locally:	100 %
Emission days	300 days/yr

Conditions and measures related to sewage treatment plant

Municipal Sewage Treatment Plant	2000 m ³ /d
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Other conditions affecting environmental exposure

Local freshwater dilution factor:	10
Local marine water dilution factor:	100
Receiving surface water flow is 18000 m ³ /d	

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 %
Vapour pressure	5 hPa

BUTYL ACRYLATE

Annex to the safety data sheet: Exposure scenario

CAS-No.: 141-32-2 Product form: Substance Physical state: Liquid Substance type: Mono-constituent

Viscosity, dynamic	1 mPa·s
Viscosity, kinematic	33 mm ² /s

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

Covers exposure up to Exposure duration	5 days/week > 4 h/day
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Technical and organisational conditions and measures

Open windows during application to ensure natural ventilation	
Local exhaust ventilation	None

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

Use eye protection according to EN 166.	
According to the conditions of use, protective gloves, apron, boots, head and face protection must be worn	
Respiratory protection not applicable	
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	

Other conditions affecting workers exposure

Exposed skin surface assumed:	Palm of one hand
Indoor use	

Additional good practice advice. Obligations according to Article 37(4) of REACH do not apply

See chapter 8 of the safety data sheet (Environmental exposure controls).

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 %
Vapour pressure	5 hPa
Viscosity, dynamic	1 mPa·s
Viscosity, kinematic	33 mm ² /s

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

Covers exposure up to Exposure duration	5 days/week > 4 h/day
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Technical and organisational conditions and measures

Local exhaust ventilation	90%. Effectiveness
Open windows during application to ensure natural ventilation	

BUTYL ACRYLATE

Annex to the safety data sheet: Exposure scenario

CAS-No.: 141-32-2 Product form: Substance Physical state: Liquid Substance type: Mono-constituent

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

Use eye protection according to EN 166.	
According to the conditions of use, protective gloves, apron, boots, head and face protection must be worn	
Respiratory protection not applicable	
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	

Other conditions affecting workers exposure

Exposed skin surface assumed:	Palm of both hands
Indoor use	

Additional good practice advice. Obligations according to Article 37(4) of REACH do not apply

See chapter 8 of the safety data sheet (Environmental exposure controls).

3.2.4. 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 %
Vapour pressure	5 hPa
Viscosity, dynamic	1 mPa·s
Viscosity, kinematic	33 mm ² /s

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

Covers exposure up to	5 days/week
Exposure duration	> 4 h/day

Technical and organisational conditions and measures

Local exhaust ventilation	None
Open windows during application to ensure natural ventilation	

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

Use eye protection according to EN 166.	
According to the conditions of use, protective gloves, apron, boots, head and face protection must be worn	
Respiratory protection	90%. Effectiveness
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	

BUTYL ACRYLATE

Annex to the safety data sheet: Exposure scenario

CAS-No.: 141-32-2 Product form: Substance Physical state: Liquid Substance type: Mono-constituent

Other conditions affecting workers exposure

Exposed skin surface assumed:	Palm of both hands
Indoor use	

Additional good practice advice. Obligations according to Article 37(4) of REACH do not apply

See chapter 8 of the safety data sheet (Environmental exposure controls).

3.2.5. 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 %
Vapour pressure	5 hPa
Viscosity, dynamic	1 mPa·s
Viscosity, kinematic	33 mm ² /s

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

Covers exposure up to	5 days/week
Exposure duration	> 4 h/day

Technical and organisational conditions and measures

Provide enhanced general ventilation by mechanical means	70%. Effectiveness
Local exhaust ventilation	None
Open windows during application to ensure natural ventilation	

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

Use eye protection according to EN 166.	
According to the conditions of use, protective gloves, apron, boots, head and face protection must be worn	
Respiratory protection	None
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	

Other conditions affecting workers exposure

Exposed skin surface assumed:	Palm of both hands
Indoor use	

Additional good practice advice. Obligations according to Article 37(4) of REACH do not apply

See chapter 8 of the safety data sheet (Environmental exposure controls).

BUTYL ACRYLATE

Annex to the safety data sheet: Exposure scenario

CAS-No.: 141-32-2 Product form: Substance Physical state: Liquid Substance type: Mono-constituent

3.2.6. 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 %
Vapour pressure	5 hPa
Viscosity, dynamic	1 mPa·s
Viscosity, kinematic	33 mm ² /s

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

Covers exposure up to Exposure duration	5 days/week > 4 h/day
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Technical and organisational conditions and measures

Local exhaust ventilation	90%. Effectiveness
Open windows during application to ensure natural ventilation	

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

Use eye protection according to EN 166.	
According to the conditions of use, protective gloves, apron, boots, head and face protection must be worn	
Respiratory protection not applicable	
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	

Other conditions affecting workers exposure

Exposed skin surface assumed:	Palm of one hand
Indoor use	

Additional good practice advice. Obligations according to Article 37(4) of REACH do not apply

See chapter 8 of the safety data sheet (Environmental exposure controls).

3.2.7. 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 %
Vapour pressure	5 hPa
Viscosity, dynamic	1 mPa·s

BUTYL ACRYLATE

Annex to the safety data sheet: Exposure scenario

CAS-No.: 141-32-2 Product form: Substance Physical state: Liquid Substance type: Mono-constituent

Viscosity, kinematic	33 mm ² /s
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Amount used (or contained in articles), frequency and duration of use/exposure

Covers exposure up to	5 days/week
Exposure duration	> 4 h/day

Technical and organisational conditions and measures

Local exhaust ventilation	None
Open windows during application to ensure natural ventilation	

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

Use eye protection according to EN 166.	
According to the conditions of use, protective gloves, apron, boots, head and face protection must be worn	
Respiratory protection	Effectiveness. 90%
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	

Other conditions affecting workers exposure

Exposed skin surface assumed:	Palm of one hand
Indoor use	

Additional good practice advice. Obligations according to Article 37(4) of REACH do not apply

See chapter 8 of the safety data sheet (Environmental exposure controls).

3.2.8. 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 %
Vapour pressure	5 hPa
Viscosity, dynamic	1 mPa·s
Viscosity, kinematic	33 mm ² /s

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

Covers exposure up to	5 days/week
Exposure duration	> 4 h/day

Technical and organisational conditions and measures

Local exhaust ventilation	90%. Effectiveness
Good standard of general ventilation	30%. Effectiveness
Open windows during application to ensure natural ventilation	

BUTYL ACRYLATE

Annex to the safety data sheet: Exposure scenario

CAS-No.: 141-32-2 Product form: Substance Physical state: Liquid Substance type: Mono-constituent

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

Use eye protection according to EN 166.	
According to the conditions of use, protective gloves, apron, boots, head and face protection must be worn	
Respiratory protection	None
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	

Other conditions affecting workers exposure

Exposed skin surface assumed:	Palm of both hands
Indoor use	

Additional good practice advice. Obligations according to Article 37(4) of REACH do not apply

See chapter 8 of the safety data sheet (Environmental exposure controls).

3.2.9. 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 %
Vapour pressure	5 hPa
Viscosity, dynamic	1 mPa·s
Viscosity, kinematic	33 mm ² /s

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

Covers exposure up to	5 days/week
Exposure duration	> 4 h/day

Technical and organisational conditions and measures

Local exhaust ventilation	None
Open windows during application to ensure natural ventilation	

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

Use eye protection according to EN 166.	
According to the conditions of use, protective gloves, apron, boots, head and face protection must be worn	
Respiratory protection	95%. Effectiveness
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	

Other conditions affecting workers exposure

Exposed skin surface assumed:	Palm of both hands
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BUTYL ACRYLATE

Annex to the safety data sheet: Exposure scenario

CAS-No.: 141-32-2 Product form: Substance Physical state: Liquid Substance type: Mono-constituent

Indoor use	
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Additional good practice advice. Obligations according to Article 37(4) of REACH do not apply

See chapter 8 of the safety data sheet (Environmental exposure controls).

3.2.10. Control of worker exposure: Mixing or blending in batch processes (PROC5)

PROC5	Mixing or blending in batch processes
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Product (article) characteristics

Physical form of product	Liquid
Concentration of substance in product	100 %
Vapour pressure	5 hPa
Viscosity, dynamic	1 mPa·s
Viscosity, kinematic	33 mm ² /s

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

Covers exposure up to Exposure duration	5 days/week > 4 h/day
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Technical and organisational conditions and measures

Provide enhanced general ventilation by mechanical means	70%. Effectiveness
Local exhaust ventilation	90%. Effectiveness
Open windows during application to ensure natural ventilation	

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

Use eye protection according to EN 166.	
According to the conditions of use, protective gloves, apron, boots, head and face protection must be worn	
Respiratory protection	None
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	

Other conditions affecting workers exposure

Exposed skin surface assumed:	Palm of both hands
Indoor use	

Additional good practice advice. Obligations according to Article 37(4) of REACH do not apply

See chapter 8 of the safety data sheet (Environmental exposure controls).

3.2.11. Control of worker exposure: Mixing or blending in batch processes (PROC5)

PROC5	Mixing or blending in batch processes
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Product (article) characteristics

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

BUTYL ACRYLATE

Annex to the safety data sheet: Exposure scenario

CAS-No.: 141-32-2 Product form: Substance Physical state: Liquid Substance type: Mono-constituent

Vapour pressure	5 hPa
Viscosity, dynamic	1 mPa·s
Viscosity, kinematic	33 mm ² /s

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

Covers exposure up to Exposure duration	5 days/week > 4 h/day
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Technical and organisational conditions and measures

Local exhaust ventilation	95%. Effectiveness
Good standard of general ventilation	30%. Effectiveness
Open windows during application to ensure natural ventilation	

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

Use eye protection according to EN 166.	
According to the conditions of use, protective gloves, apron, boots, head and face protection must be worn	
Respiratory protection	95%. Effectiveness
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	

Other conditions affecting workers exposure

Exposed skin surface assumed:	Palm of both hands
Indoor use	

Additional good practice advice. Obligations according to Article 37(4) of REACH do not apply

See chapter 8 of the safety data sheet (Environmental exposure controls).

3.2.12. Control of worker exposure: Transfer of substance or mixture (charging and 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 %
Vapour pressure	5 hPa
Viscosity, dynamic	1 mPa·s
Viscosity, kinematic	33 mm ² /s

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

Covers exposure up to Exposure duration	5 days/week > 4 h/day
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Technical and organisational conditions and measures

Provide enhanced general ventilation by mechanical means	Effectiveness. 70%
Local exhaust ventilation	Effectiveness. 90%

BUTYL ACRYLATE

Annex to the safety data sheet: Exposure scenario

CAS-No.: 141-32-2 Product form: Substance Physical state: Liquid Substance type: Mono-constituent

Open windows during application to ensure natural ventilation

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

Use eye protection according to EN 166.

According to the conditions of use, protective gloves, apron, boots, head and face protection must be worn

Respiratory protection

None

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

Other conditions affecting workers exposure

Exposed skin surface assumed:

Both hands

Indoor use

Additional good practice advice. Obligations according to Article 37(4) of REACH do not apply

See chapter 8 of the safety data sheet (Environmental exposure controls).

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

PROC8a

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

Product (article) characteristics

Physical form of product

Liquid

Concentration of substance in product

100 %

Vapour pressure

5 hPa

Viscosity, dynamic

1 mPa·s

Viscosity, kinematic

33 mm²/s

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

Covers exposure up to

5 days/week

Exposure duration

> 4 h/day

Technical and organisational conditions and measures

Good standard of general ventilation

Effectiveness. 30%

Local exhaust ventilation

None

Open windows during application to ensure natural ventilation

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

Use eye protection according to EN 166.

According to the conditions of use, protective gloves, apron, boots, head and face protection must be worn

Respiratory protection

95%. Effectiveness

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

BUTYL ACRYLATE

Annex to the safety data sheet: Exposure scenario

CAS-No.: 141-32-2 Product form: Substance Physical state: Liquid Substance type: Mono-constituent

Other conditions affecting workers exposure

Exposed skin surface assumed:	Both hands
Indoor use	

Additional good practice advice. Obligations according to Article 37(4) of REACH do not apply

See chapter 8 of the safety data sheet (Environmental exposure controls).

3.2.14. Control of worker exposure: Transfer of substance or mixture (charging and 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 %
Vapour pressure	5 hPa
Viscosity, dynamic	1 mPa·s
Viscosity, kinematic	33 mm ² /s

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

Covers exposure up to	5 days/week
Exposure duration	> 4 h/day

Technical and organisational conditions and measures

Local exhaust ventilation	Effectiveness. 95%
Open windows during application to ensure natural ventilation	

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

Use eye protection according to EN 166.	
According to the conditions of use, protective gloves, apron, boots, head and face protection must be worn	
Respiratory protection	None
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	

Other conditions affecting workers exposure

Exposed skin surface assumed:	Both hands
Indoor use	

Additional good practice advice. Obligations according to Article 37(4) of REACH do not apply

See chapter 8 of the safety data sheet (Environmental exposure controls).

3.2.15. Control of worker exposure: Transfer of substance or mixture (charging and 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
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BUTYL ACRYLATE

Annex to the safety data sheet: Exposure scenario

CAS-No.: 141-32-2 Product form: Substance Physical state: Liquid Substance type: Mono-constituent

Concentration of substance in product	100 %
Vapour pressure	5 hPa
Viscosity, dynamic	1 mPa·s
Viscosity, kinematic	33 mm ² /s

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

Covers exposure up to Exposure duration	5 days/week > 4 h/day
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Technical and organisational conditions and measures

Local exhaust ventilation	None
Open windows during application to ensure natural ventilation	

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

Use eye protection according to EN 166.	
According to the conditions of use, protective gloves, apron, boots, head and face protection must be worn	
Respiratory protection	95%. Effectiveness
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	

Other conditions affecting workers exposure

Exposed skin surface assumed:	Both hands
Indoor use	

Additional good practice advice. Obligations according to Article 37(4) of REACH do not apply

See chapter 8 of the safety data sheet (Environmental exposure controls).

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

PROC9	Transfer of substance or mixture into small containers (dedicated filling line, including weighing)
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Product (article) characteristics

Physical form of product	Liquid
Concentration of substance in product	100 %
Vapour pressure	5 hPa
Viscosity, dynamic	1 mPa·s
Viscosity, kinematic	33 mm ² /s

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

Covers exposure up to Exposure duration	5 days/week > 4 h/day
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Technical and organisational conditions and measures

Provide enhanced general ventilation by mechanical means	70%. Effectiveness
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BUTYL ACRYLATE

Annex to the safety data sheet: Exposure scenario

CAS-No.: 141-32-2 Product form: Substance Physical state: Liquid Substance type: Mono-constituent

Local exhaust ventilation	90%. Effectiveness
Open windows during application to ensure natural ventilation	

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

Use eye protection according to EN 166.	
According to the conditions of use, protective gloves, apron, boots, head and face protection must be worn	
Respiratory protection	None
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	

Other conditions affecting workers exposure

Exposed skin surface assumed:	Palm of both hands
Indoor use	

Additional good practice advice. Obligations according to Article 37(4) of REACH do not apply

See chapter 8 of the safety data sheet (Environmental exposure controls).

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

PROC9	Transfer of substance or mixture into small containers (dedicated filling line, including weighing)
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Product (article) characteristics

Physical form of product	Liquid
Concentration of substance in product	100 %
Vapour pressure	5 hPa
Viscosity, dynamic	1 mPa·s
Viscosity, kinematic	33 mm ² /s

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

Covers exposure up to	5 days/week
Exposure duration	> 4 h/day

Technical and organisational conditions and measures

Good standard of general ventilation	30%. Effectiveness
Local exhaust ventilation	None
Open windows during application to ensure natural ventilation	

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

Use eye protection according to EN 166.	
According to the conditions of use, protective gloves, apron, boots, head and face protection must be worn	
Respiratory protection	95%. Effectiveness

BUTYL ACRYLATE

Annex to the safety data sheet: Exposure scenario

CAS-No.: 141-32-2 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

Other conditions affecting workers exposure

Exposed skin surface assumed:

Palm of both hands

Indoor use

Additional good practice advice. Obligations according to Article 37(4) of REACH do not apply

See chapter 8 of the safety data sheet (Environmental exposure controls).

3.3. Exposure estimation and reference to its source

3.3.1. Environmental release and exposure Use of monomer in polymerisation processes at industrial site (inclusion or not into/onto article) (ERC6c)

Information for contributing exposure scenario

Release route	Release rate	Release estimation method
Release fraction to air from process (initial release prior to RMM):	1 %	
Release fraction to wastewater from process (initial release prior to RMM):	1 %	
Release fraction to soil from process (initial release prior to RMM):	0 %	

Protection target	Unit	Exposure estimation	PNEC	RCR	Assessment method
Freshwater	mg/l	0.00219	0.003	0.805098	EASY TRA v4.1
Marine water	mg/l	0.000196	0.0003	0.725136	EASY TRA v4.1
Freshwater sediment	mg/kg dwt	0.027242	0.034	0.805975	EASY TRA v4.1
Marine water sediment	mg/kg dwt	0.002436	0.003	0.720588	EASY TRA v4.1
Sewage treatment plant	mg/l	0.01	3.5	0.002857	EASY TRA v4.1
Soil	mg/kg dwt	0.016728	1	0.016728	EASY TRA v4.1

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
Inhalation - Long-term - systemic effects	0.053404 mg/m ³	0.004855	EASY TRA v4.1
Sum RCR - Long-term - systemic effects		0.005	

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

BUTYL ACRYLATE

Annex to the safety data sheet: Exposure scenario

CAS-No.: 141-32-2 Product form: Substance Physical state: Liquid Substance type: Mono-constituent

Route of exposure and type of effects	Exposure estimate	RCR	Method
Inhalation - Long-term - systemic effects	2.67 mg/m ³	0.242744	EASY TRA v4.1
Sum RCR - Long-term - systemic effects		0.243	

3.3.4. 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
Inhalation - Long-term - systemic effects	2.67 mg/m ³	0.242744	EASY TRA v4.1
Sum RCR - Long-term - systemic effects		0.243	

3.3.5. 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
Inhalation - Long-term - systemic effects	8.011 mg/m ³	0.728233	EASY TRA v4.1
Sum RCR - Long-term - systemic effects		0.728	

3.3.6. 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
Inhalation - Long-term - systemic effects	5.34 mg/m ³	0.485489	EASY TRA v4.1
Sum RCR - Long-term - systemic effects		0.485	

3.3.7. 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
Inhalation - Long-term - systemic effects	5.34 mg/m ³	0.485489	EASY TRA v4.1
Sum RCR - Long-term - systemic effects		0.485	

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

Information for contributing exposure scenario			
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BUTYL ACRYLATE

Annex to the safety data sheet: Exposure scenario

CAS-No.: 141-32-2 Product form: Substance Physical state: Liquid Substance type: Mono-constituent

Route of exposure and type of effects	Exposure estimate	RCR	Method
Inhalation - Long-term - systemic effects	7.477 mg/m ³	0.679684	EASY TRA v4.1
Sum RCR - Long-term - systemic effects		0.68	

3.3.9. 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
Inhalation - Long-term - systemic effects	5.34 mg/m ³	0.485489	EASY TRA v4.1
Sum RCR - Long-term - systemic effects		0.485	

3.3.10. Worker exposure Mixing or blending in batch processes (PROC5)

Information for contributing exposure scenario			
Route of exposure and type of effects	Exposure estimate	RCR	Method
Inhalation - Long-term - systemic effects	8.011 mg/m ³	0.728233	EASY TRA v4.1
Sum RCR - Long-term - systemic effects		0.728	

3.3.11. Worker exposure Mixing or blending in batch processes (PROC5)

Information for contributing exposure scenario			
Route of exposure and type of effects	Exposure estimate	RCR	Method
Inhalation - Long-term - systemic effects	9.346 mg/m ³	0.849605	EASY TRA v4.1
Sum RCR - Long-term - systemic effects		0.85	

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

Information for contributing exposure scenario			
Route of exposure and type of effects	Exposure estimate	RCR	Method
Inhalation - Long-term - systemic effects	8.011 mg/m ³	0.728233	EASY TRA v4.1
Sum RCR - Long-term - systemic effects		0.728	

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

Information for contributing exposure scenario			
Route of exposure and type of effects	Exposure estimate	RCR	Method
Inhalation - Long-term - systemic effects	8.011 mg/m ³	0.728233	EASY TRA v4.1

BUTYL ACRYLATE

Annex to the safety data sheet: Exposure scenario

CAS-No.: 141-32-2 Product form: Substance Physical state: Liquid Substance type: Mono-constituent

Sum RCR - Long-term - systemic effects		0.728	
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3.3.14. Worker exposure Transfer of substance or mixture (charging and discharging) at dedicated facilities (PROC8b)

Information for contributing exposure scenario

Route of exposure and type of effects	Exposure estimate	RCR	Method
Inhalation - Long-term - systemic effects	6.675 mg/m ³	0.606861	EASY TRA v4.1
Sum RCR - Long-term - systemic effects		0.607	

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

Information for contributing exposure scenario

Route of exposure and type of effects	Exposure estimate	RCR	Method
Inhalation - Long-term - systemic effects	6.675 mg/m ³	0.606861	EASY TRA v4.1
Sum RCR - Long-term - systemic effects		0.607	

3.3.16. 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
Inhalation - Long-term - systemic effects	8.011 mg/m ³	0.728233	EASY TRA v4.1
Sum RCR - Long-term - systemic effects		0.728	

3.3.17. 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
Inhalation - Long-term - systemic effects	8.011 mg/m ³	0.849605	EASY TRA v4.1
Sum RCR - Long-term - systemic effects		0.85	

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

3.4.2. Health

No data available

BUTYL ACRYLATE

Annex to the safety data sheet: Exposure scenario

CAS-No.: 141-32-2 Product form: Substance Physical state: Liquid Substance type: Mono-constituent

4. ES-4: Use as an intermediate

4.1. Title section

Use as an intermediate

ES Ref.: ES-4
ES Type: Worker

Company ES code: ES-4
Association ref code: IW-4

Environment

CS-1	Use of monomer in polymerisation processes at industrial site (inclusion or not into/onto article)	ERC6c
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Worker

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	Chemical production or refinery in closed continuous process with occasional controlled exposure or processes with equivalent containment conditions	PROC2
CS-5	Chemical production or refinery in closed continuous process with occasional controlled exposure or processes with equivalent containment conditions	PROC2
CS-6	Manufacture or formulation in the chemical industry in closed batch processes with occasional controlled exposure or processes with equivalent containment condition	PROC3
CS-7	Manufacture or formulation in the chemical industry in closed batch processes with occasional controlled exposure or processes with equivalent containment condition	PROC3
CS-8	Manufacture or formulation in the chemical industry in closed batch processes with occasional controlled exposure or processes with equivalent containment condition	PROC3
CS-9	Chemical production where opportunity for exposure arises	PROC4
CS-10	Chemical production where opportunity for exposure arises	PROC4
CS-11	Mixing or blending in batch processes	PROC5
CS-12	Mixing or blending in batch processes	PROC5

BUTYL ACRYLATE

Annex to the safety data sheet: Exposure scenario

CAS-No.: 141-32-2 Product form: Substance Physical state: Liquid Substance type: Mono-constituent

CS-13	Transfer of substance or mixture (charging and discharging) at non-dedicated facilities	PROC8a
CS-14	Transfer of substance or mixture (charging and discharging) at non-dedicated facilities	PROC8a
CS-15	Transfer of substance or mixture (charging and discharging) at dedicated facilities	PROC8b
CS-16	Transfer of substance or mixture (charging and discharging) at dedicated facilities	PROC8b
CS-17	Transfer of substance or mixture into small containers (dedicated filling line, including weighing)	PROC9
CS-18	Transfer of substance or mixture into small containers (dedicated filling line, including weighing)	PROC9

Processes, tasks, activities covered	Industrial useX
Assessment method	EasyTRA 4.0.0

4.2. Conditions of use affecting exposure

4.2.1. Control of environmental exposure: Use of monomer in polymerisation processes at industrial site (inclusion or not into/onto article) (ERC6c)

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

Product (article) characteristics

Physical form of product	Liquid
Concentration of substance in product	100 %
Vapour pressure	5 hPa
Viscosity, dynamic	1 mPa·s

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

Amount per use	6160 t/yr
Daily amount per site	4106.667 kg/day
Fraction of Regional tonnage used locally:	100 %
Emission days	300 days/yr

Conditions and measures related to sewage treatment plant

Municipal Sewage Treatment Plant	2000 m ³ /d
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Other conditions affecting environmental exposure

Local freshwater dilution factor:	10
Local marine water dilution factor:	100
Receiving surface water flow is 18000 m ³ /d	

4.2.2. 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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BUTYL ACRYLATE

Annex to the safety data sheet: Exposure scenario

CAS-No.: 141-32-2 Product form: Substance Physical state: Liquid Substance type: Mono-constituent

Product (article) characteristics

Physical form of product	Liquid
Concentration of substance in product	100 %
Vapour pressure	5 hPa
Viscosity, dynamic	1 mPa·s
Viscosity, kinematic	33 mm ² /s

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

Covers exposure up to	5 days/week
Exposure duration	> 4 h/day

Technical and organisational conditions and measures

Open windows during application to ensure natural ventilation	
Local exhaust ventilation	None

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

Use eye protection according to EN 166.	
According to the conditions of use, protective gloves, apron, boots, head and face protection must be worn	
Respiratory protection not applicable	
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	

Other conditions affecting workers exposure

Exposed skin surface assumed:	Palm of one hand
Indoor use	

Additional good practice advice. Obligations according to Article 37(4) of REACH do not apply

See chapter 8 of the safety data sheet (Environmental exposure controls).

4.2.3. 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 %
Vapour pressure	5 hPa
Viscosity, dynamic	1 mPa·s
Viscosity, kinematic	33 mm ² /s

BUTYL ACRYLATE

Annex to the safety data sheet: Exposure scenario

CAS-No.: 141-32-2 Product form: Substance Physical state: Liquid Substance type: Mono-constituent

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

Covers exposure up to	5 days/week
Exposure duration	> 4 h/day

Technical and organisational conditions and measures

Local exhaust ventilation	90%. Effectiveness
Open windows during application to ensure natural ventilation	

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

Use eye protection according to EN 166.	
According to the conditions of use, protective gloves, apron, boots, head and face protection must be worn	
Respiratory protection not applicable	
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	

Other conditions affecting workers exposure

Exposed skin surface assumed:	Palm of both hands
Indoor use	

Additional good practice advice. Obligations according to Article 37(4) of REACH do not apply

See chapter 8 of the safety data sheet (Environmental exposure controls).

4.2.4. 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 %
Vapour pressure	5 hPa
Viscosity, dynamic	1 mPa·s
Viscosity, kinematic	33 mm ² /s

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

Covers exposure up to	5 days/week
Exposure duration	> 4 h/day

Technical and organisational conditions and measures

Local exhaust ventilation	None
Open windows during application to ensure natural ventilation	

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

Use eye protection according to EN 166.	
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BUTYL ACRYLATE

Annex to the safety data sheet: Exposure scenario

CAS-No.: 141-32-2 Product form: Substance Physical state: Liquid Substance type: Mono-constituent

According to the conditions of use, protective gloves, apron, boots, head and face protection must be worn	
Respiratory protection	90%. Effectiveness
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	

Other conditions affecting workers exposure

Exposed skin surface assumed:	Palm of both hands
Indoor use	

Additional good practice advice. Obligations according to Article 37(4) of REACH do not apply

See chapter 8 of the safety data sheet (Environmental exposure controls).

4.2.5. 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 %
Vapour pressure	5 hPa
Viscosity, dynamic	1 mPa·s
Viscosity, kinematic	33 mm ² /s

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

Covers exposure up to	5 days/week
Exposure duration	> 4 h/day

Technical and organisational conditions and measures

Provide enhanced general ventilation by mechanical means	70%. Effectiveness
Local exhaust ventilation	None
Open windows during application to ensure natural ventilation	

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

Use eye protection according to EN 166.	
According to the conditions of use, protective gloves, apron, boots, head and face protection must be worn	
Respiratory protection	None
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	

Other conditions affecting workers exposure

Exposed skin surface assumed:	Palm of both hands
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BUTYL ACRYLATE

Annex to the safety data sheet: Exposure scenario

CAS-No.: 141-32-2 Product form: Substance Physical state: Liquid Substance type: Mono-constituent

Indoor use	
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Additional good practice advice. Obligations according to Article 37(4) of REACH do not apply

See chapter 8 of the safety data sheet (Environmental exposure controls).

4.2.6. 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 %
Vapour pressure	5 hPa
Viscosity, dynamic	1 mPa·s
Viscosity, kinematic	33 mm ² /s

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

Covers exposure up to	5 days/week
Exposure duration	> 4 h/day

Technical and organisational conditions and measures

Local exhaust ventilation	90%. Effectiveness
Open windows during application to ensure natural ventilation	

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

Use eye protection according to EN 166.	
According to the conditions of use, protective gloves, apron, boots, head and face protection must be worn	
Respiratory protection not applicable	
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	

Other conditions affecting workers exposure

Exposed skin surface assumed:	Palm of one hand
Indoor use	

Additional good practice advice. Obligations according to Article 37(4) of REACH do not apply

See chapter 8 of the safety data sheet (Environmental exposure controls).

4.2.7. 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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BUTYL ACRYLATE

Annex to the safety data sheet: Exposure scenario

CAS-No.: 141-32-2 Product form: Substance Physical state: Liquid Substance type: Mono-constituent

Product (article) characteristics	
Physical form of product	Liquid
Concentration of substance in product	100 %
Vapour pressure	5 hPa
Viscosity, dynamic	1 mPa·s
Viscosity, kinematic	33 mm ² /s

Amount used (or contained in articles), frequency and duration of use/exposure	
Covers exposure up to	5 days/week
Exposure duration	> 4 h/day

Technical and organisational conditions and measures	
Local exhaust ventilation	None
Open windows during application to ensure natural ventilation	

Conditions and measures related to personal protection, hygiene and health evaluation	
Use eye protection according to EN 166.	
According to the conditions of use, protective gloves, apron, boots, head and face protection must be worn	
Respiratory protection	Effectiveness. 95%
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	

Other conditions affecting workers exposure	
Exposed skin surface assumed:	Palm of one hand
Indoor use	

Additional good practice advice. Obligations according to Article 37(4) of REACH do not apply	
See chapter 8 of the safety data sheet (Environmental exposure controls).	

4.2.8. 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 %
Vapour pressure	5 hPa
Viscosity, dynamic	1 mPa·s
Viscosity, kinematic	33 mm ² /s

Amount used (or contained in articles), frequency and duration of use/exposure	
Covers exposure up to	5 days/week
Exposure duration	> 4 h/day

BUTYL ACRYLATE

Annex to the safety data sheet: Exposure scenario

CAS-No.: 141-32-2 Product form: Substance Physical state: Liquid Substance type: Mono-constituent

Technical and organisational conditions and measures

Local exhaust ventilation	None
Good standard of general ventilation	30%. Effectiveness
Open windows during application to ensure natural ventilation	

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

Use eye protection according to EN 166.	
According to the conditions of use, protective gloves, apron, boots, head and face protection must be worn	
Respiratory protection	90%. Effectiveness
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	

Other conditions affecting workers exposure

Exposed skin surface assumed:	Palm of both hands
Indoor use	

Additional good practice advice. Obligations according to Article 37(4) of REACH do not apply

See chapter 8 of the safety data sheet (Environmental exposure controls).

4.2.9. 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 %
Vapour pressure	5 hPa
Viscosity, dynamic	1 mPa·s
Viscosity, kinematic	33 mm ² /s

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

Covers exposure up to Exposure duration	5 days/week > 4 h/day
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Technical and organisational conditions and measures

Good standard of general ventilation	30%. Effectiveness
Local exhaust ventilation	90%. Effectiveness
Open windows during application to ensure natural ventilation	

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

Use eye protection according to EN 166.	
According to the conditions of use, protective gloves, apron, boots, head and face protection must be worn	

BUTYL ACRYLATE

Annex to the safety data sheet: Exposure scenario

CAS-No.: 141-32-2 Product form: Substance Physical state: Liquid Substance type: Mono-constituent

Respiratory protection	None
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	

Other conditions affecting workers exposure

Exposed skin surface assumed:	Palm of both hands
Indoor use	

Additional good practice advice. Obligations according to Article 37(4) of REACH do not apply

See chapter 8 of the safety data sheet (Environmental exposure controls).

4.2.10. 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 %
Vapour pressure	5 hPa
Viscosity, dynamic	1 mPa·s
Viscosity, kinematic	33 mm ² /s

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

Covers exposure up to	5 days/week
Exposure duration	> 4 h/day

Technical and organisational conditions and measures

Local exhaust ventilation	None
Open windows during application to ensure natural ventilation	

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

Use eye protection according to EN 166.	
According to the conditions of use, protective gloves, apron, boots, head and face protection must be worn	
Respiratory protection	95%. Effectiveness
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	

Other conditions affecting workers exposure

Exposed skin surface assumed:	Palm of both hands
Indoor use	

Additional good practice advice. Obligations according to Article 37(4) of REACH do not apply

See chapter 8 of the safety data sheet (Environmental exposure controls).

BUTYL ACRYLATE

Annex to the safety data sheet: Exposure scenario

CAS-No.: 141-32-2 Product form: Substance Physical state: Liquid Substance type: Mono-constituent

4.2.11. Control of worker exposure: Mixing or blending in batch processes (PROC5)

PROC5	Mixing or blending in batch processes
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Product (article) characteristics

Physical form of product	Liquid
Concentration of substance in product	100 %
Vapour pressure	5 hPa
Viscosity, dynamic	1 mPa·s
Viscosity, kinematic	33 mm ² /s

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

Covers exposure up to	5 days/week
Exposure duration	> 4 h/day

Technical and organisational conditions and measures

Provide enhanced general ventilation by mechanical means	70%. Effectiveness
Local exhaust ventilation	90%. Effectiveness
Open windows during application to ensure natural ventilation	

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

Use eye protection according to EN 166.	
According to the conditions of use, protective gloves, apron, boots, head and face protection must be worn	
Respiratory protection	None
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	

Other conditions affecting workers exposure

Exposed skin surface assumed:	Palm of both hands
Indoor use	

Additional good practice advice. Obligations according to Article 37(4) of REACH do not apply

See chapter 8 of the safety data sheet (Environmental exposure controls).

4.2.12. Control of worker exposure: Mixing or blending in batch processes (PROC5)

PROC5	Mixing or blending in batch processes
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Product (article) characteristics

Physical form of product	Liquid
Concentration of substance in product	100 %
Vapour pressure	5 hPa
Viscosity, dynamic	1 mPa·s
Viscosity, kinematic	33 mm ² /s

BUTYL ACRYLATE

Annex to the safety data sheet: Exposure scenario

CAS-No.: 141-32-2 Product form: Substance Physical state: Liquid Substance type: Mono-constituent

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

Covers exposure up to	5 days/week
Exposure duration	> 4 h/day

Technical and organisational conditions and measures

Local exhaust ventilation	None
Good standard of general ventilation	30%. Effectiveness
Open windows during application to ensure natural ventilation	

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

Use eye protection according to EN 166.	
According to the conditions of use, protective gloves, apron, boots, head and face protection must be worn	
Respiratory protection	95%. Effectiveness
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	

Other conditions affecting workers exposure

Exposed skin surface assumed:	Palm of both hands
Indoor use	

Additional good practice advice. Obligations according to Article 37(4) of REACH do not apply

See chapter 8 of the safety data sheet (Environmental exposure controls).

4.2.13. Control of worker exposure: Transfer of substance or mixture (charging and 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 %
Vapour pressure	5 hPa
Viscosity, dynamic	1 mPa·s
Viscosity, kinematic	33 mm ² /s

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

Covers exposure up to	5 days/week
Exposure duration	> 4 h/day

Technical and organisational conditions and measures

Provide enhanced general ventilation by mechanical means	Effectiveness. 70%
Local exhaust ventilation	Effectiveness. 90%
Open windows during application to ensure natural ventilation	

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

Use eye protection according to EN 166.

BUTYL ACRYLATE

Annex to the safety data sheet: Exposure scenario

CAS-No.: 141-32-2 Product form: Substance Physical state: Liquid Substance type: Mono-constituent

According to the conditions of use, protective gloves, apron, boots, head and face protection must be worn	
Respiratory protection	None
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	

Other conditions affecting workers exposure

Exposed skin surface assumed:	Both hands
Indoor use	

Additional good practice advice. Obligations according to Article 37(4) of REACH do not apply

See chapter 8 of the safety data sheet (Environmental exposure controls).

4.2.14. Control of worker exposure: Transfer of substance or mixture (charging and 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 %
Vapour pressure	5 hPa
Viscosity, dynamic	1 mPa·s
Viscosity, kinematic	33 mm ² /s

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

Covers exposure up to	5 days/week
Exposure duration	> 4 h/day

Technical and organisational conditions and measures

Good standard of general ventilation	Effectiveness. 30%
Local exhaust ventilation	None
Open windows during application to ensure natural ventilation	

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

Use eye protection according to EN 166.	
According to the conditions of use, protective gloves, apron, boots, head and face protection must be worn	
Respiratory protection	95%. Effectiveness
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	

Other conditions affecting workers exposure

Exposed skin surface assumed:	Both hands
Indoor use	

BUTYL ACRYLATE

Annex to the safety data sheet: Exposure scenario

CAS-No.: 141-32-2 Product form: Substance Physical state: Liquid Substance type: Mono-constituent

Additional good practice advice. Obligations according to Article 37(4) of REACH do not apply

See chapter 8 of the safety data sheet (Environmental exposure controls).

4.2.15. Control of worker exposure: Transfer of substance or mixture (charging and 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 %
Vapour pressure	5 hPa
Viscosity, dynamic	1 mPa·s
Viscosity, kinematic	33 mm ² /s

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

Covers exposure up to	5 days/week
Exposure duration	> 4 h/day

Technical and organisational conditions and measures

Local exhaust ventilation	Effectiveness. 95%
Open windows during application to ensure natural ventilation	

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

Use eye protection according to EN 166.	
According to the conditions of use, protective gloves, apron, boots, head and face protection must be worn	
Respiratory protection	None
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	

Other conditions affecting workers exposure

Exposed skin surface assumed:	Both hands
Indoor use	

Additional good practice advice. Obligations according to Article 37(4) of REACH do not apply

See chapter 8 of the safety data sheet (Environmental exposure controls).

4.2.16. Control of worker exposure: Transfer of substance or mixture (charging and 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 %
Vapour pressure	5 hPa
Viscosity, dynamic	1 mPa·s
Viscosity, kinematic	33 mm ² /s

BUTYL ACRYLATE

Annex to the safety data sheet: Exposure scenario

CAS-No.: 141-32-2 Product form: Substance Physical state: Liquid Substance type: Mono-constituent

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

Covers exposure up to	5 days/week
Exposure duration	> 4 h/day

Technical and organisational conditions and measures

Local exhaust ventilation	None
Open windows during application to ensure natural ventilation	

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

Use eye protection according to EN 166.	
According to the conditions of use, protective gloves, apron, boots, head and face protection must be worn	
Respiratory protection	95%. Effectiveness
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	

Other conditions affecting workers exposure

Exposed skin surface assumed:	Both hands
Indoor use	

Additional good practice advice. Obligations according to Article 37(4) of REACH do not apply

See chapter 8 of the safety data sheet (Environmental exposure controls).

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

PROC9	Transfer of substance or mixture into small containers (dedicated filling line, including weighing)
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Product (article) characteristics

Physical form of product	Liquid
Concentration of substance in product	100 %
Vapour pressure	5 hPa
Viscosity, dynamic	1 mPa·s
Viscosity, kinematic	33 mm ² /s

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

Covers exposure up to	5 days/week
Exposure duration	> 4 h/day

Technical and organisational conditions and measures

Provide enhanced general ventilation by mechanical means	70%. Effectiveness
Local exhaust ventilation	90%. Effectiveness
Open windows during application to ensure natural ventilation	

BUTYL ACRYLATE

Annex to the safety data sheet: Exposure scenario

CAS-No.: 141-32-2 Product form: Substance Physical state: Liquid Substance type: Mono-constituent

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

Use eye protection according to EN 166.	
According to the conditions of use, protective gloves, apron, boots, head and face protection must be worn	
Respiratory protection	None
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	

Other conditions affecting workers exposure

Exposed skin surface assumed:	Palm of both hands
Indoor use	

Additional good practice advice. Obligations according to Article 37(4) of REACH do not apply

See chapter 8 of the safety data sheet (Environmental exposure controls).

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

PROC9	Transfer of substance or mixture into small containers (dedicated filling line, including weighing)
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Product (article) characteristics

Physical form of product	Liquid
Concentration of substance in product	100 %
Vapour pressure	5 hPa
Viscosity, dynamic	1 mPa·s
Viscosity, kinematic	33 mm ² /s

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

Covers exposure up to	5 days/week
Exposure duration	> 4 h/day

Technical and organisational conditions and measures

Good standard of general ventilation	30%. Effectiveness
Local exhaust ventilation	None
Open windows during application to ensure natural ventilation	

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

Use eye protection according to EN 166.	
According to the conditions of use, protective gloves, apron, boots, head and face protection must be worn	
Respiratory protection	95%. Effectiveness
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	

BUTYL ACRYLATE

Annex to the safety data sheet: Exposure scenario

CAS-No.: 141-32-2 Product form: Substance Physical state: Liquid Substance type: Mono-constituent

Other conditions affecting workers exposure

Exposed skin surface assumed:	Palm of both hands
Indoor use	

Additional good practice advice. Obligations according to Article 37(4) of REACH do not apply

See chapter 8 of the safety data sheet (Environmental exposure controls).

4.3. Exposure estimation and reference to its source

4.3.1. Environmental release and exposure Use of monomer in polymerisation processes at industrial site (inclusion or not into/onto article) (ERC6c)

Information for contributing exposure scenario

Release route	Release rate	Release estimation method
Release fraction to air from process (initial release prior to RMM):	1 %	
Release fraction to wastewater from process (initial release prior to RMM):	0.7 %	
Release fraction to soil from process (initial release prior to RMM):	0.1 %	

Protection target	Unit	Exposure estimation	PNEC	RCR	Assessment method
Freshwater	mg/l	0.00219	0.003	0.805098	EASY TRA v4.1
Marine water	mg/l	0.000196	0.0003	0.725136	EASY TRA v4.1
Freshwater sediment	mg/kg dwt	0.027242	0.034	0.805975	EASY TRA v4.1
Marine water sediment	mg/kg dwt	0.002436	0.003	0.720588	EASY TRA v4.1
Sewage treatment plant	mg/l	0.01	3.5	0.002857	EASY TRA v4.1
Soil	mg/kg dwt	0.009128	1	0.009128	EASY TRA v4.1

4.3.2. 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
Inhalation - Long-term - systemic effects	0.053404 mg/m ³	0.004855	EASY TRA v4.1
Sum RCR - Long-term - systemic effects		0.005	

4.3.3. 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
Inhalation - Long-term - systemic effects	2.67 mg/m ³	0.242744	EASY TRA v4.1
Sum RCR - Long-term - systemic effects		0.243	

BUTYL ACRYLATE

Annex to the safety data sheet: Exposure scenario

CAS-No.: 141-32-2 Product form: Substance Physical state: Liquid Substance type: Mono-constituent

4.3.4. 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
Inhalation - Long-term - systemic effects	2.67 mg/m ³	0.242744	EASY TRA v4.1
Sum RCR - Long-term - systemic effects		0.243	

4.3.5. 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
Inhalation - Long-term - systemic effects	8.011 mg/m ³	0.728233	EASY TRA v4.1
Sum RCR - Long-term - systemic effects		0.728	

4.3.6. 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
Inhalation - Long-term - systemic effects	5.34 mg/m ³	0.485489	EASY TRA v4.1
Sum RCR - Long-term - systemic effects		0.485	

4.3.7. 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
Inhalation - Long-term - systemic effects	2.67 mg/m ³	0.242744	EASY TRA v4.1
Sum RCR - Long-term - systemic effects		0.243	

4.3.8. 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
Inhalation - Long-term - systemic effects	3.738 mg/m ³	0.339842	EASY TRA v4.1
Sum RCR - Long-term - systemic effects		0.34	

BUTYL ACRYLATE

Annex to the safety data sheet: Exposure scenario

CAS-No.: 141-32-2 Product form: Substance Physical state: Liquid Substance type: Mono-constituent

4.3.9. 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
Inhalation - Long-term - systemic effects	7.477 mg/m ³	0.679684	EASY TRA v4.1
Sum RCR - Long-term - systemic effects		0.68	

4.3.10. 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
Inhalation - Long-term - systemic effects	5.34 mg/m ³	0.485489	EASY TRA v4.1
Sum RCR - Long-term - systemic effects		0.485	

4.3.11. Worker exposure Mixing or blending in batch processes (PROC5)

Information for contributing exposure scenario			
Route of exposure and type of effects	Exposure estimate	RCR	Method
Inhalation - Long-term - systemic effects	5.34 mg/m ³	0.485489	EASY TRA v4.1
Sum RCR - Long-term - systemic effects		0.485	

4.3.12. Worker exposure Mixing or blending in batch processes (PROC5)

Information for contributing exposure scenario			
Route of exposure and type of effects	Exposure estimate	RCR	Method
Inhalation - Long-term - systemic effects	9.346 mg/m ³	0.849605	EASY TRA v4.1
Sum RCR - Long-term - systemic effects		0.85	

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

Information for contributing exposure scenario			
Route of exposure and type of effects	Exposure estimate	RCR	Method
Inhalation - Long-term - systemic effects	8.011 mg/m ³	0.728233	EASY TRA v4.1
Sum RCR - Long-term - systemic effects		0.728	

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

Information for contributing exposure scenario			
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BUTYL ACRYLATE

Annex to the safety data sheet: Exposure scenario

CAS-No.: 141-32-2 Product form: Substance Physical state: Liquid Substance type: Mono-constituent

Route of exposure and type of effects	Exposure estimate	RCR	Method
Inhalation - Long-term - systemic effects	9.346 mg/m ³	0.849605	EASY TRA v4.1
Sum RCR - Long-term - systemic effects		0.85	

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

Information for contributing exposure scenario			
Route of exposure and type of effects	Exposure estimate	RCR	Method
Inhalation - Long-term - systemic effects	6.675 mg/m ³	0.606861	EASY TRA v4.1
Sum RCR - Long-term - systemic effects		0.607	

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

Information for contributing exposure scenario			
Route of exposure and type of effects	Exposure estimate	RCR	Method
Inhalation - Long-term - systemic effects	6.675 mg/m ³	0.606861	EASY TRA v4.1
Sum RCR - Long-term - systemic effects		0.607	

4.3.17. 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
Inhalation - Long-term - systemic effects	8.011 mg/m ³	0.728233	EASY TRA v4.1
Sum RCR - Long-term - systemic effects		0.728	

4.3.18. 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
Inhalation - Long-term - systemic effects	9.346 mg/m ³	0.849605	EASY TRA v4.1
Sum RCR - Long-term - systemic effects		0.85	

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

BUTYL ACRYLATE

Annex to the safety data sheet: Exposure scenario

CAS-No.: 141-32-2 Product form: Substance Physical state: Liquid Substance type: Mono-constituent

5. ES-5: Use in laboratories

5.1. Title section

Use in laboratories

ES Ref.: ES-5
ES Type: Worker

Company ES code: ES-5
Association ref code: M-5

Environment

CS-1	Manufacture of the substance	ERC1
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Worker

CS-2	Use as laboratory reagent	PROC15
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Processes, tasks, activities covered	Industrial useX ManufactureX
Assessment method	EasyTRA 4.0.0

5.2. Conditions of use affecting exposure

5.2.1. Control of environmental exposure: Manufacture of the substance (ERC1)

ERC1	Manufacture of the substance
Assessment method	EUSES

Product (article) characteristics

Physical form of product	Liquid
Concentration of substance in product	≈ 100 %
Vapour pressure	5 hPa
Viscosity, dynamic	1 mPa·s

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

Amount per use	6160 t/yr
Daily amount per site	12300 kg/day
Fraction of Regional tonnage used locally:	100 %
Emission days	100 days/yr

Conditions and measures related to sewage treatment plant

Municipal Sewage Treatment Plant	2000 m ³ /d
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Other conditions affecting environmental exposure

Local freshwater dilution factor:	10
Local marine water dilution factor:	100
Receiving surface water flow is 18000 m ³ /d	

5.2.2. Control of worker exposure: Use as laboratory reagent (PROC15)

PROC15	Use as laboratory reagent
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BUTYL ACRYLATE

Annex to the safety data sheet: Exposure scenario

CAS-No.: 141-32-2 Product form: Substance Physical state: Liquid Substance type: Mono-constituent

Product (article) characteristics

Physical form of product	Liquid
Concentration of substance in product	100 %
Vapour pressure	5 hPa
Viscosity, dynamic	1 mPa·s
Viscosity, kinematic	33 mm ² /s

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

Covers exposure up to	5 days/week
Exposure duration	> 4 h/day

Technical and organisational conditions and measures

Local exhaust ventilation	90%. Effectiveness
Open windows during application to ensure natural ventilation	

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

Use eye protection according to EN 166.	
According to the conditions of use, protective gloves, apron, boots, head and face protection must be worn	
Respiratory protection not applicable	
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	

Other conditions affecting workers exposure

Exposed skin surface assumed:	Palm of one hand
Indoor use	

Additional good practice advice. Obligations according to Article 37(4) of REACH do not apply

See chapter 8 of the safety data sheet (Environmental exposure controls).

5.3. Exposure estimation and reference to its source

5.3.1. Environmental release and exposure Manufacture of the substance (ERC1)

Information for contributing exposure scenario

Release route	Release rate	Release estimation method			
Release fraction to air from process (initial release prior to RMM):	5 %				
Release fraction to wastewater from process (initial release prior to RMM):	6 %				
Release fraction to soil from process (initial release prior to RMM):	0.01 %				
Protection target	Unit	Exposure estimation	PNEC	RCR	Assessment method
Freshwater	mg/l	0.00219	0.003	0.805098	EASY TRA v4.1
Marine water	mg/l	0.000196	0.0003	0.725136	EASY TRA v4.1

BUTYL ACRYLATE

Annex to the safety data sheet: Exposure scenario

CAS-No.: 141-32-2 Product form: Substance Physical state: Liquid Substance type: Mono-constituent

Freshwater sediment	mg/kg dwt	0.027242	0.034	0.805975	EASY TRA v4.1
Marine water sediment	mg/kg dwt	0.002436	0.003	0.720588	EASY TRA v4.1
Sewage treatment plant	mg/l	0.01	3.5	0.002857	EASY TRA v4.1
Soil	mg/kg dwt	0.014615	1	0.014615	EASY TRA v4.1

5.3.2. Worker exposure Use as laboratory reagent (PROC15)

Information for contributing exposure scenario

Route of exposure and type of effects	Exposure estimate	RCR	Method
Inhalation - Long-term - systemic effects	5.34 mg/m ³	0.485489	EASY TRA v4.1
Sum RCR - Long-term - systemic effects		0.485	

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

5.4.1. Environment

No data available

5.4.2. Health

No data available