Section 1. Identification of the substance/preparation and of the company/undertaking

Product name: LOCTITE AA 3342 known as Loctite 3342

Other means of identification: LOCTITE AA 3342 CR300ML EGFD
Product code: IDH537444
Recommended use of the chemical and restrictions on use

Intended use: Acrylic Adhesive
Manufacturer/Importer/Distributor Representative Company

Henkel Adhesive Tech. Vietnam Co., Ltd,
No. 7, Road 9A Bien Hoa II Industrial Zone,
Bien Hoa City,
810000 Dong Nai Province

Vietnam

Phone: +84 (28) 7100 6301
Fax-no.: +84 (28) 7100 6300

E-mail address of person responsible for Safety Data Sheet: ap-ua-psra.sea@henkel.com

Emergency Telephone for Chemical Accidents: FOR EMERGENCIES ONLY (Spill, major leak, Fire, Exposure, or Accident). Call: +84 28 71006388

Section 2. Hazards identification

GHS Classification:

Hazard Class	Hazard Category	Target organ
Skin corrosion/irritation	Category 2	
Serious eye damage/eye irritation	Category 1	
Skin sensitizer	Category 1	
Specific target organ toxicity - single exposure	Category 3	respiratory tract irritation
Chronic hazards to the aquatic environment	Category 3	

GHS label elements:

Hazard pictogram:



Signal word: Danger

Hazard statement:	H315 Causes skin irritation. H317 May cause an allergic skin reaction. H318 Causes serious eye damage. H335 May cause respiratory irritation. H412 Harmful to aquatic life with long lasting effects.

Precaution:

Prevention:	P261 Avoid breathing dust/fume/gas/mist/vapours/spray. P264 Wash hands thoroughly after handling. P272 Contaminated work clothing should not be allowed out of the workplace. P273 Avoid release to the environment. P280 Wear protective gloves/protective clothing/eye protection/face protection.
Response:	P302+P352 IF ON SKIN: Wash with plenty of water. P304+P340+P312 IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing. Call a POISON CENTER or physician if you feel unwell. P305+P351+P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. P333+P313 If skin irritation or rash occurs: Get medical advice/attention. P362+P364 Take off contaminated clothing and wash it before reuse.
Storage:	P403+P233 Store in a well-ventilated place. Keep container tightly closed.
Disposal:	P501 Dispose of contents/container to an appropriate treatment and disposal facility in accordance with applicable laws and regulations, and product characteristics at time of disposal.

Section 3. Composition / information on ingredients

Substance or Mixture:
Mixture

Declaration of hazardous chemical:

Hazard component CAS-No.	Content	GHS Classification
2-Propenoic acid, 2-methyl-, phenylmethyl ester 2495-37-6	30- 60 %	Acute toxicity 5; Oral H303 Skin corrosion/irritation 2 H315 Serious eye damage/eye irritation 2A H319 Skin Sensitization 1B H317 Target Organ Systemic Toxicant - Single exposure 3 H335 Acute hazards to the aquatic environment 2 H401
methacrylic acid 79-41-4	10- 30 %	Flammable liquids 4 H227 Acute toxicity 4; Oral H302 Acute toxicity 4; Inhalation H332 Acute toxicity 3; Dermal H311 Skin corrosion/irritation 1A H314 Serious eye damage/eye irritation 1 H318 Target Organ Systemic Toxicant - Single exposure 3 H335 Acute hazards to the aquatic environment 3 H402
1,1'-(1,3-phenylene)bis-1H-pyrrole-2,5-dione 3006-93-7	1- 10 %	Acute toxicity 4; Oral H302 Acute toxicity 2; Inhalation H330 Skin Sensitization 1A H317 Acute hazards to the aquatic environment 3 H402 Chronic hazards to the aquatic environment 2 H411
Tert-butyl perbenzoate 614-45-9	1- 10 %	Organic peroxides C H242 Acute toxicity 4; Inhalation H332 Skin corrosion/irritation 2 H315 Skin Sensitization 1 H317 Acute hazards to the aquatic environment 1 H400 Chronic hazards to the aquatic environment 3 H412
1-Methyltrimethylene dimethacrylate 1189-08-8	1- 10 %	Skin Sensitization 1B H317 Acute hazards to the aquatic environment 2 H401
Silica, amorphous, fumed, cryst.-free 112945-52-5	1- 10 %	
2,6-Di-tert-butyl-p-cresol 128-37-0	0.1- 1 %	Acute hazards to the aquatic environment 1 H400 Chronic hazards to the aquatic environment 1 H410
2-ethylhexanoic acid, iron salt 19583-54-1	0.1- 1 %	Acute toxicity 4; Oral H302 Reproductive toxicant. 1B H360
p-benzoquinone 106-51-4	< 0.1 %	Flammable solids 1 H228 Acute toxicity 3; Oral

		H301 Acute toxicity 3; Inhalation H331 Skin corrosion/irritation 2 H315 Serious eye damage/eye irritation 2A H319 Skin Sensitization 1 H317 Germ cell mutagenicity 2 H341 Target Organ Systemic Toxicant - Single exposure 3 H335 Acute hazards to the aquatic environment 1 H400

Section 4. First aid measures

Inhalation: Move to fresh air. If symptoms persist, seek medical advice.

Skin contact: Rinse with running water and soap.
Seek medical advice.

Eye contact: Rinse immediately with plenty of running water (for 10 minutes). Seek medical attention if necessary.

Ingestion: Rinse out mouth, drink 1-2 glasses of water, do not induce vomiting.
Seek medical advice.

Indication of immediate medical attention and special treatment needed: See section: Description of first aid measures

Section 5. Fire fighting measures

Suitable extinguishing media: Carbon dioxide, foam, powder

Specific hazards arising from the chemical: In case of fire, keep containers cool with water spray.

Special protection equipment and precautions for firefighters: Wear self-contained breathing apparatus and full protective clothing, such as turn-out gear.

Hazardous combustion products: Oxides of carbon, oxides of nitrogen, irritating organic vapors.

Section 6. Accidental release measures

Personal precautions: Avoid skin and eye contact.
Wear protective equipment.
Ensure adequate ventilation.
See advice in section 8

Environmental precautions: Do not empty into drains / surface water / ground water.

Clean-up methods: For small spills wipe up with paper towel and place in container for disposal.
For large spills absorb onto inert absorbent material and place in sealed container for disposal.
Dispose of contaminated material as waste according to Section 13.

Section 7. Handling and storage

Handling:

Use only in well-ventilated areas.
Avoid skin and eye contact.
Prolonged or repeated skin contact should be avoided to minimise any risk of sensitisation.
See advice in section 8

Storage:

For optimum shelf life store in original containers under refrigerated conditions at 2 - 8°C (35.6 - 46.4 °F).
Refer to Technical Data Sheet.

Section 8. Exposure controls / personal protection

Components with specific control parameters for workplace:

METHACRYLIC ACID 79-41-4	**Value type**	Time Weighted Average (TWA):
	ppm	20
	Remarks	ACGIH
Methacrylic acid 79-41-4	**Value type**	Time Weighted Average (TWA):
	mg/m³	70
	Remarks	VN OEL
Particles (insoluble or poorly soluble) not otherwise specified, respirable particles 112945-52-5	**Value type**	Time Weighted Average (TWA):
	mg/m³	3
	Remarks	ACGIH
Particles (insoluble or poorly soluble) not otherwise specified, inhalable particles 112945-52-5	**Value type**	Time Weighted Average (TWA):
	mg/m³	10
	Remarks	ACGIH
BUTYLATED HYDROXYTOLUENE (BHT), INHALABLE FRACTION AND VAPOR 128-37-0	**Value type**	Time Weighted Average (TWA):
	mg/m³	2
	Remarks	ACGIH
FERRIC SALT (AS FE) 19583-54-1	**Value type**	Short-term exposure limit (STEL):
	mg/m³	2
	Remarks	VN OEL
FERRIC SALT (AS FE) 19583-54-1	**Value type**	Time Weighted Average (TWA):
	mg/m³	1
	Remarks	VN OEL
(o,p) Benzoquinone 106-51-4	**Value type**	Time Weighted Average (TWA):
	mg/m³	0.4
	Remarks	VN OEL
Benzoquinone 106-51-4	**Value type**	Threshold Limit Value-Surface Limit (TLV-SL):
	Remarks	ACGIH
Benzoquinone 106-51-4	**Value type**	Time Weighted Average (TWA):
	ppm	0.1
	Remarks	ACGIH
(o,p) Benzoquinone 106-51-4	**Value type**	Short-term exposure limit (STEL):
	mg/m³	1
	Remarks	VN OEL

Respiratory protection:

Ensure adequate ventilation.
An approved mask or respirator fitted with an organic vapour cartridge should be worn if the product is used in a poorly ventilated area
Filter type: A

Hand protection:

Chemical-resistant protective gloves (EN 374).
Suitable materials for short-term contact or splashes (recommended: at least protection index 2, corresponding to > 30 minutes permeation time as per EN 374):
nitrile rubber (NBR; >= 0.4 mm thickness)
Suitable materials for longer, direct contact (recommended: protection index 6, corresponding to > 480 minutes permeation time as per EN 374):
nitrile rubber (NBR; >= 0.4 mm thickness)
This information is based on literature references and on information provided by glove manufacturers, or is derived by analogy with similar substances. Please note that in

	practice the working life of chemical-resistant protective gloves may be considerably shorter than the permeation time determined in accordance with EN 374 as a result of the many influencing factors (e.g. temperature). If signs of wear and tear are noticed then the gloves should be replaced.
Eye protection:	Safety glasses with sideshields or chemical safety goggles should be worn if there is a risk of splashing. Protective eye equipment should conform to EN166.
Body protection:	Wear suitable protective clothing. Protective clothing should conform to EN 14605 for liquid splashes or to EN 13982 for dusts.
Engineering controls:	Provide local and general exhaust ventilation to effectively remove and prevent buildup of any vapors or mists generated from the handling of this product.
General protection and hygiene measures:	The workplace should be equipped with an emergency shower and eye-rinsing facility.
Hygienic measures:	Wash hands before work breaks and after finishing work. Do not eat, drink or smoke while working. Take off contaminated clothing and wash before reuse.

Section 9. Physical and chemical properties

Appearance:	Yellow liquid
Odor:	Acrylic
Odor threshold (CA):	No data available.
pH:	Not applicable, Product is non-soluble (in water).
Melting point / freezing point:	Not applicable, Product is a liquid
Specific gravity:	1.05
Boiling point:	> 149 °C (> 300.2 °F)
Flash point:	125 °C (257 °F)
(Tagliabue closed cup)	The product does not support combustion in any way.
Evaporation rate:	No data available.
Flammability (solid, gas):	No data available.
Lower explosive limit:	No data available.
Upper explosive limit:	No data available.
Vapor pressure:	< 30 mm hg
(; 20 °C (68 °F))	
Vapor density:	> 1 Heavier than air
Density:	1.05 g/cm3
Solubility:	Not soluble (20 °C)
Partition coefficient: n-octanol/water:	No data available.
Auto ignition:	No data available.
Decomposition temperature:	No data available.
Viscosity:	80,000 - 230,000 mPa.s (Brookfield; Instrument: HBT; 25 °C (77 °F); speed of rotation: 2.5 min-1; Spindle No: TB; Method: ;; LCT STM 10; Viscosity Brookfield)
VOC content:	< 3 %
(2010/75/EC)	

Section 10. Stability and reactivity

Reactivity/Incompatible materials:	Reaction with strong acids. Reacts with strong oxidants. Reaction with strong bases
Chemical stability:	Stable under recommended storage conditions.

Conditions to avoid: Stable
Hazardous decomposition products: Oxides of carbon.

Section 11. Toxicological information

Oral toxicity: Acute toxicity estimate (ATE) : > 2,000 mg/kg
Method: Calculation method

Inhalative toxicity:
Dermal toxicity: Acute toxicity estimate (ATE) : > 2,000 mg/kg
Method: Calculation method

Skin irritation: Classification: Category 2
Result: Skin irritation.

Symptoms of Overexposure**:** SKIN: Rash, Urticaria.
SKIN: Redness, inflammation.
RESPIRATORY: Irritation, coughing, shortness of breath, chest tightness.
After eye contact: Corrosive, may cause permanent damage to eyes (impairment of vision).

Acute oral toxicity:

2-Propenoic acid, 2-methyl-, phenylmethyl ester 2495-37-6	Value type	LD50
	Value	3,980 mg/kg
	Species	rat
	Method	OECD Guideline 401 (Acute Oral Toxicity)
methacrylic acid 79-41-4	Value type	LD50
	Value	1,320 mg/kg
	Species	rat
	Method	equivalent or similar to OECD Guideline 401 (Acute Oral Toxicity)
1,1'-(1,3-phenylene)bis-1H-pyrrole-2,5-dione 3006-93-7	Value type	Acute toxicity estimate (ATE)
	Value	500 mg/kg
	Species	
	Method	Expert judgement
1,1'-(1,3-phenylene)bis-1H-pyrrole-2,5-dione 3006-93-7	Value type	LD50
	Value	> 300 - 2,000 mg/kg
	Species	rat
	Method	OECD Guideline 423 (Acute Oral toxicity)
Tert-butyl perbenzoate 614-45-9	Value type	LD50
	Value	> 5,000 mg/kg
	Species	rat
	Method	OECD Guideline 423 (Acute Oral toxicity)
1-Methyltrimethylene dimethacrylate 1189-08-8	Value type	LD50
	Value	> 5,000 mg/kg
	Species	rat
	Method	not specified
Silica, amorphous, fumed, cryst.-free 112945-52-5	Value type	LD50
	Value	> 5,000 mg/kg
	Species	rat
	Method	OECD Guideline 401 (Acute Oral Toxicity)
2,6-Di-tert-butyl-p-cresol 128-37-0	Value type	LD50
	Value	> 6,000 mg/kg
	Species	rat
	Method	OECD Guideline 401 (Acute Oral Toxicity)
2-ethylhexanoic acid, iron salt 19583-54-1	Value type	Acute toxicity estimate (ATE)
	Value	1,234 mg/kg
	Species	
	Method	Expert judgement
p-benzoquinone 106-51-4	Value type	LD50
	Value	130 mg/kg
	Species	rat
	Method	not specified

Acute inhalative toxicity:

methacrylic acid 79-41-4	Value type	LC50
	Value	3.19 - 6.5 mg/l
	Exposure time	4 h
	Species	rat
	Method	equivalent or similar to OECD Guideline 403 (Acute Inhalation Toxicity)
methacrylic acid 79-41-4	Value type	Acute toxicity estimate (ATE)
	Value	3.19 mg/l
	Exposure time	
	Species	
	Method	Expert judgement
1,1'-(1,3-phenylene)bis-1H-pyrrole-2,5-dione 3006-93-7	Value type	LC50
	Value	0.055 mg/l
	Exposure time	4 h
	Species	rat
	Method	OECD Guideline 403 (Acute Inhalation Toxicity)
Tert-butyl perbenzoate 614-45-9	Value type	LC50
	Value	> 1.01 - < 4.9 mg/l
	Exposure time	4 h
	Species	rat
	Method	OECD Guideline 436 (Acute Inhalation Toxicity: Acute Toxic Class (ATC) Method)
Tert-butyl perbenzoate 614-45-9	Value type	LC50
	Value	5 mg/l
	Exposure time	4 h
	Species	rat
	Method	OECD Guideline 436 (Acute Inhalation Toxicity: Acute Toxic Class (ATC) Method)
Silica, amorphous, fumed, cryst.-free 112945-52-5	Value type	LC50
	Value	> 5.01 mg/l
	Exposure time	4 h
	Species	rat
	Method	OECD Guideline 436 (Acute Inhalation Toxicity: Acute Toxic Class (ATC) Method)

Acute dermal toxicity:

2-Propenoic acid, 2-methyl-, phenylmethyl ester 2495-37-6	Value type	LD50
	Value	> 2,000 mg/kg
	Species	rat
	Method	OECD Guideline 402 (Acute Dermal Toxicity)
methacrylic acid 79-41-4	Value type	LD50
	Value	500 - 1,000 mg/kg
	Species	rabbit
	Method	Dermal Toxicity Screening
methacrylic acid 79-41-4	Value type	Acute toxicity estimate (ATE)
	Value	500 mg/kg
	Species	
	Method	Expert judgement
Tert-butyl perbenzoate 614-45-9	Value type	LD0
	Value	2,000 mg/kg
	Species	rat
	Method	OECD Guideline 402 (Acute Dermal Toxicity)
Tert-butyl perbenzoate 614-45-9	Value type	LD50
	Value	> 2,000 mg/kg
	Species	rat
	Method	OECD Guideline 402 (Acute Dermal Toxicity)
1-Methyltrimethylene dimethacrylate 1189-08-8	Value type	LD50
	Value	> 3,000 mg/kg
	Species	rabbit
	Method	not specified
Silica, amorphous, fumed, cryst.-free 112945-52-5	Value type	LD50
	Value	> 2,000 mg/kg
	Species	rabbit
	Method	OECD Guideline 402 (Acute Dermal Toxicity)

2,6-Di-tert-butyl-p-cresol 128-37-0	Value type	LD50
	Value	> 2,000 mg/kg
	Species	rat
	Method	OECD Guideline 402 (Acute Dermal Toxicity)
2-ethylhexanoic acid, iron salt 19583-54-1	Value type	LD50
	Value	> 2,000 mg/kg
	Species	rat
	Method	OECD Guideline 402 (Acute Dermal Toxicity)
p-benzoquinone 106-51-4	Value type	LD50
	Value	> 2,000 mg/kg
	Species	rat
	Method	not specified

Skin corrosion/irritation:

methacrylic acid 79-41-4	Result	corrosive
	Exposure time	3 min
	Species	rabbit
	Method	OECD Guideline 404 (Acute Dermal Irritation / Corrosion)
1,1'-(1,3-phenylene)bis-1H-pyrrole-2,5-dione 3006-93-7	Result	not corrosive
	Exposure time	60 min
	Species	Human, EpiDermTM SIT (EPI-200), Reconstructed Human Epidermis (RHE)
	Method	OECD Guideline 431 (In Vitro Skin Corrosion: Reconstructed Human Epidermis (RHE) Test Method)
1,1'-(1,3-phenylene)bis-1H-pyrrole-2,5-dione 3006-93-7	Result	not irritating
	Exposure time	60 min
	Species	Human, EpiDermTM SIT (EPI-200), Reconstructed Human Epidermis (RHE)
	Method	OECD Guideline 439 (In Vitro Skin Irritation: Reconstructed Human Epidermis (RHE) Test Method)
Tert-butyl perbenzoate 614-45-9	Result	irritating
	Exposure time	4 h
	Species	rabbit
	Method	OECD Guideline 404 (Acute Dermal Irritation / Corrosion)
Silica, amorphous, fumed, cryst.-free 112945-52-5	Result	not irritating
	Exposure time	4 h
	Species	rabbit
	Method	OECD Guideline 404 (Acute Dermal Irritation / Corrosion)
2,6-Di-tert-butyl-p-cresol 128-37-0	Result	not irritating
	Exposure time	4 h
	Species	rabbit
	Method	OECD Guideline 404 (Acute Dermal Irritation / Corrosion)
2-ethylhexanoic acid, iron salt 19583-54-1	Result	not irritating
	Exposure time	4 h
	Species	rabbit
	Method	OECD Guideline 404 (Acute Dermal Irritation / Corrosion)

Serious eye damage/irritation:

methacrylic acid 79-41-4	Result	corrosive
	Exposure time	
	Species	rabbit
	Method	Draize Test
1,1'-(1,3-phenylene)bis-1H-pyrrole-2,5-dione 3006-93-7	Result	not irritating
	Exposure time	
	Species	Bovine, cornea, in vitro test
	Method	OECD Guideline 437 (BCOP)
Tert-butyl perbenzoate 614-45-9	Result	not irritating
	Exposure time	
	Species	rabbit
	Method	OECD Guideline 405 (Acute Eye Irritation / Corrosion)
Silica, amorphous, fumed, cryst.-free 112945-52-5	Result	not irritating
	Exposure time	
	Species	rabbit
	Method	OECD Guideline 405 (Acute Eye Irritation / Corrosion)
2,6-Di-tert-butyl-p-cresol 128-37-0	Result	not irritating
	Exposure time	
	Species	rabbit
	Method	Draize Test

Respiratory or skin sensitization:

2-Propenoic acid, 2-methyl-, phenylmethyl ester 2495-37-6	Result	sensitising
	Test type	Mouse local lymphnode assay (LLNA)
	Species	mouse
	Method	OECD Guideline 429 (Skin Sensitisation: Local Lymph Node Assay)
methacrylic acid 79-41-4	Result	not sensitising
	Test type	Buehler test
	Species	guinea pig
	Method	equivalent or similar to OECD Guideline 406 (Skin Sensitisation)
1,1'-(1,3-phenylene)bis-1H-pyrrole-2,5-dione 3006-93-7	Result	not sensitising
	Test type	Mouse local lymphnode assay (LLNA)
	Species	mouse
	Method	OECD Guideline 429 (Skin Sensitisation: Local Lymph Node Assay)
Tert-butyl perbenzoate 614-45-9	Result	sensitising
	Test type	Mouse local lymphnode assay (LLNA)
	Species	mouse
	Method	OECD Guideline 429 (Skin Sensitisation: Local Lymph Node Assay)
1-Methyltrimethylene dimethacrylate 1189-08-8	Result	sensitising
	Test type	Mouse local lymphnode assay (LLNA)
	Species	mouse
	Method	OECD Guideline 429 (Skin Sensitisation: Local Lymph Node Assay)
Silica, amorphous, fumed, cryst.-free 112945-52-5	Result	not sensitising
	Test type	
	Species	human
	Method	not specified
2,6-Di-tert-butyl-p-cresol 128-37-0	Result	not sensitising
	Test type	Draize Test
	Species	guinea pig
	Method	Draize Test
p-benzoquinone 106-51-4	Result	sensitising
	Test type	Guinea pig maximisation test
	Species	guinea pig
	Method	equivalent or similar to OECD Guideline 406 (Skin Sensitisation)

Germ cell mutagenicity:

methacrylic acid 79-41-4	Result	negative
	Type of study / Route of administration	bacterial reverse mutation assay (e.g Ames test)
	Metabolic activation / Exposure time	with and without
	Method	equivalent or similar to OECD Guideline 471 (Bacterial Reverse Mutation Assay)
methacrylic acid 79-41-4	Result	negative
	Type of study / Route of administration	inhalation
	Metabolic activation / Exposure time	
	Species	mouse
	Method	equivalent or similar to OECD Guideline 478 (Genetic Toxicology: Rodent Dominant Lethal Test)
methacrylic acid 79-41-4	Result	negative
	Type of study / Route of administration	oral: gavage
	Metabolic activation / Exposure time	
	Species	mouse
	Method	equivalent or similar to OECD Guideline 474 (Mammalian Erythrocyte Micronucleus Test)
1,1'-(1,3-phenylene)bis-1H-pyrrole-2,5-dione 3006-93-7	Result	negative
	Type of study / Route of administration	bacterial reverse mutation assay (e.g Ames test)
	Metabolic activation / Exposure time	with and without
	Method	OECD Guideline 471 (Bacterial Reverse Mutation Assay)
1,1'-(1,3-phenylene)bis-1H-pyrrole-2,5-dione 3006-93-7	Result	negative
	Type of study / Route of administration	in vitro mammalian chromosome aberration test
	Metabolic activation / Exposure time	with and without
	Method	OECD Guideline 473 (In vitro Mammalian Chromosome Aberration Test)
1,1'-(1,3-phenylene)bis-1H-pyrrole-2,5-dione 3006-93-7	Result	negative
	Type of study / Route of administration	mammalian cell gene mutation assay
	Metabolic activation / Exposure time	with and without
	Method	OECD Guideline 476 (In vitro Mammalian Cell Gene Mutation Test)
Silica, amorphous, fumed, cryst.-free 112945-52-5	Result	negative
	Type of study / Route of administration	bacterial reverse mutation assay (e.g Ames test)
	Metabolic activation / Exposure time	
	Method	not specified
Silica, amorphous, fumed, cryst.-free 112945-52-5	Result	negative
	Type of study / Route of administration	in vitro mammalian chromosome aberration test
	Metabolic activation / Exposure time	
	Method	not specified
Silica, amorphous, fumed, cryst.-free 112945-52-5	Result	negative
	Type of study / Route of administration	DNA damage and repair assay, unscheduled DNA synthesis in mammalian cells in vitro
	Metabolic activation / Exposure time	
	Method	not specified
2,6-Di-tert-butyl-p-cresol 128-37-0	Result	negative
	Type of study / Route of administration	bacterial reverse mutation assay (e.g Ames test)
	Metabolic activation / Exposure time	with and without
	Method	not specified
2,6-Di-tert-butyl-p-cresol 128-37-0	Result	negative
	Type of study / Route of administration	in vitro mammalian chromosome aberration test
	Metabolic activation / Exposure time	with and without
	Method	not specified
2,6-Di-tert-butyl-p-cresol 128-37-0	Result	negative
	Type of study / Route of administration	mammalian cell gene mutation assay
	Metabolic activation / Exposure time	with
	Method	not specified
2,6-Di-tert-butyl-p-cresol 128-37-0	Result	negative
	Type of study / Route of administration	oral: feed
	Metabolic activation / Exposure time	
	Species	rat
	Method	not specified
2,6-Di-tert-butyl-p-cresol 128-37-0	Result	negative
	Type of study / Route of administration	intraperitoneal
	Metabolic activation / Exposure time	
	Species	mouse
	Method	not specified
p-benzoquinone	Result	positive

106-51-4	Type of study / Route of administration	oral: unspecified
	Metabolic activation / Exposure time	
	Species	mouse
	Method	equivalent or similar to OECD Guideline 474 (Mammalian Erythrocyte Micronucleus Test)

Repeated dose toxicity:

methacrylic acid 79-41-4	Result	
	Route of application	inhalation
	Exposure time / Frequency of treatment	90 d6 h/d, 5 d/w
	Species	rat
	Method	OECD Guideline 413 (Subchronic Inhalation Toxicity: 90-Day)
1,1'-(1,3-phenylene)bis-1H-pyrrole-2,5-dione 3006-93-7	Result	NOAEL=15 mg/kg
	Route of application	oral: gavage
	Exposure time / Frequency of treatment	42-52 ddaily
	Species	rat
	Method	OECD Guideline 422 (Combined Repeated Dose Toxicity Study with the Reproduction / Developmental Toxicity Screening Test)
2,6-Di-tert-butyl-p-cresol 128-37-0	Result	NOAEL=25 mg/kg
	Route of application	oral: feed
	Exposure time / Frequency of treatment	22 monthsdaily
	Species	rat
	Method	not specified

Section 12. Ecological information

General ecological information: Do not empty into drains / surface water / ground water.

Ecotoxicity: H412 Harmful to aquatic life with long lasting effects.

Toxicity:

2-Propenoic acid, 2-methyl-, phenylmethyl ester 2495-37-6	Value type	LC50
	Value	4.67 mg/l
	Acute Toxicity Study	Fish
	Exposure time	96 h
	Species	Pimephales promelas
	Method	OECD Guideline 203 (Fish, Acute Toxicity Test)
2-Propenoic acid, 2-methyl-, phenylmethyl ester 2495-37-6	Value type	EC50
	Value	2.28 mg/l
	Acute Toxicity Study	Algae
	Exposure time	72 h
	Species	Desmodesmus subspicatus (reported as Scenedesmus subspicatus)
	Method	OECD Guideline 201 (Alga, Growth Inhibition Test)
	Value type	EC10
	Value	1.08 mg/l
	Acute Toxicity Study	Algae
	Exposure time	72 h
	Species	Desmodesmus subspicatus (reported as Scenedesmus subspicatus)
	Method	OECD Guideline 201 (Alga, Growth Inhibition Test)
methacrylic acid 79-41-4	Value type	LC50
	Value	85 mg/l
	Acute Toxicity Study	Fish
	Exposure time	96 h
	Species	Salmo gairdneri (new name: Oncorhynchus mykiss)
	Method	EPA OTS 797.1400 (Fish Acute Toxicity Test)
	Value type	NOEC
	Value	10 mg/l

	Acute Toxicity Study	Fish
	Exposure time	35 d
	Species	Danio rerio
	Method	OECD Guideline 210 (fish early life stage toxicity test)
methacrylic acid 79-41-4	Value type	EC50
	Value	> 130 mg/l
	Acute Toxicity Study	Daphnia
	Exposure time	48 h
	Species	Daphnia magna
	Method	EPA OTS 797.1300 (Aquatic Invertebrate Acute Toxicity Test, Freshwater Daphnids)
methacrylic acid 79-41-4	Value type	NOEC
	Value	8.2 mg/l
	Acute Toxicity Study	Algae
	Exposure time	72 h
	Species	Selenastrum capricornutum (new name: Pseudokirchneriella subcapitata)
	Method	OECD Guideline 201 (Alga, Growth Inhibition Test)
	Value type	EC50
	Value	45 mg/l
	Acute Toxicity Study	Algae
	Exposure time	72 h
	Species	Selenastrum capricornutum (new name: Pseudokirchneriella subcapitata)
	Method	OECD Guideline 201 (Alga, Growth Inhibition Test)
methacrylic acid 79-41-4	Value type	EC10
	Value	100 mg/l
	Acute Toxicity Study	Bacteria
	Exposure time	17 h
	Species	Pseudomonas putida
	Method	DIN 38412, part 8 (Pseudomonas Zellvermehrungshemm-Test)
1,1'-(1,3-phenylene)bis-1H-pyrrole-2,5-dione 3006-93-7	Value type	EC50
	Value	31.6 mg/l
	Acute Toxicity Study	Daphnia
	Exposure time	48 h
	Species	Daphnia magna
	Method	OECD Guideline 202 (Daphnia sp. Acute Immobilisation Test)
1,1'-(1,3-phenylene)bis-1H-pyrrole-2,5-dione 3006-93-7	Value type	ErC50
	Value	67.898 mg/l
	Acute Toxicity Study	Algae
	Exposure time	72 h
	Species	Desmodesmus subspicatus
	Method	OECD Guideline 201 (Alga, Growth Inhibition Test)
	Value type	EC10
	Value	0.308 mg/l
	Acute Toxicity Study	Algae
	Exposure time	72 h
	Species	Desmodesmus subspicatus
	Method	OECD Guideline 201 (Alga, Growth Inhibition Test)
Tert-butyl perbenzoate 614-45-9	Value type	LC50
	Value	1.6 mg/l
	Acute Toxicity Study	Fish
	Exposure time	96 h
	Species	Brachydanio rerio (new name: Danio rerio)
	Method	OECD Guideline 203 (Fish, Acute Toxicity Test)
Tert-butyl perbenzoate 614-45-9	Value type	EC50
	Value	11 mg/l
	Acute Toxicity Study	Daphnia
	Exposure time	48 h
	Species	Daphnia magna
	Method	OECD Guideline 202 (Daphnia sp. Acute Immobilisation Test)
Tert-butyl perbenzoate 614-45-9	Value type	NOEC
	Value	0.72 mg/l
	Acute Toxicity Study	Algae
	Exposure time	72 h
	Species	Pseudokirchneriella subcapitata
	Method	OECD Guideline 201 (Alga, Growth Inhibition Test)
	Value type	EC50
	Value	0.8 mg/l
	Acute Toxicity Study	Algae
	Exposure time	72 h
	Species	Pseudokirchneriella subcapitata

	Method	OECD Guideline 201 (Alga, Growth Inhibition Test)
Tert-butyl perbenzoate 614-45-9	Value type	EC10
	Value	6 mg/l
	Acute Toxicity Study	Bacteria
	Exposure time	30 min
	Species	activated sludge of a predominantly domestic sewage
	Method	OECD Guideline 209 (Activated Sludge, Respiration Inhibition Test)
1-Methyltrimethylene dimethacrylate 1189-08-8	Value type	LC50
	Value	32.5 mg/l
	Acute Toxicity Study	Fish
	Exposure time	48 h
	Species	
	Method	DIN 38412-15
1-Methyltrimethylene dimethacrylate 1189-08-8	Value type	EC50
	Value	9.79 mg/l
	Acute Toxicity Study	Algae
	Exposure time	72 h
	Species	Desmodesmus subspicatus
	Method	OECD Guideline 201 (Alga, Growth Inhibition Test)
	Value type	NOEC
	Value	2.11 mg/l
	Acute Toxicity Study	Algae
	Exposure time	72 h
	Species	Desmodesmus subspicatus
	Method	OECD Guideline 201 (Alga, Growth Inhibition Test)
1-Methyltrimethylene dimethacrylate 1189-08-8	Value type	NOEC
	Value	20 mg/l
	Acute Toxicity Study	Bacteria
	Exposure time	28 d
	Species	activated sludge, domestic
	Method	not specified
Silica, amorphous, fumed, cryst.-free 112945-52-5	Value type	LC50
	Value	> 10,000 mg/l
	Acute Toxicity Study	Fish
	Exposure time	96 h
	Species	Brachydanio rerio (new name: Danio rerio)
	Method	OECD Guideline 203 (Fish, Acute Toxicity Test)
Silica, amorphous, fumed, cryst.-free 112945-52-5	Value type	EL50
	Value	> 10,000 mg/l
	Acute Toxicity Study	Daphnia
	Exposure time	24 h
	Species	Daphnia magna
	Method	OECD Guideline 202 (Daphnia sp. Acute Immobilisation Test)
Silica, amorphous, fumed, cryst.-free 112945-52-5	Value type	EC50
	Value	> 173 mg/l
	Acute Toxicity Study	Algae
	Exposure time	72 h
	Species	Desmodesmus subspicatus
	Method	OECD Guideline 201 (Alga, Growth Inhibition Test)
Silica, amorphous, fumed, cryst.-free 112945-52-5	Value type	EC50
	Value	> 2,500 mg/l
	Acute Toxicity Study	Bacteria
	Exposure time	3 h
	Species	activated sludge of a predominantly domestic sewage
	Method	OECD Guideline 209 (Activated Sludge, Respiration Inhibition Test)
2,6-Di-tert-butyl-p-cresol 128-37-0	Value type	NOEC
	Value	0.053 mg/l
	Acute Toxicity Study	Fish
	Exposure time	30 d
	Species	Oryzias latipes
	Method	OECD Guideline 210 (fish early life stage toxicity test)
2,6-Di-tert-butyl-p-cresol 128-37-0	Value type	EC50
	Value	0.48 mg/l
	Acute Toxicity Study	Daphnia
	Exposure time	48 h
	Species	Daphnia magna
	Method	OECD Guideline 202 (Daphnia sp. Acute Immobilisation Test)
2,6-Di-tert-butyl-p-cresol 128-37-0	Value type	EC10
	Value	0.4 mg/l
	Acute Toxicity Study	Algae

	Exposure time	72 h
	Species	Desmodesmus subspicatus (reported as Scenedesmus subspicatus)
	Method	EU Method C.3 (Algal Inhibition test)
2-ethylhexanoic acid, iron salt 19583-54-1	Value type	LC50
	Value	> 100 mg/l
	Acute Toxicity Study	Fish
	Exposure time	96 h
	Species	Oryzias latipes
	Method	OECD Guideline 203 (Fish, Acute Toxicity Test)
2-ethylhexanoic acid, iron salt 19583-54-1	Value type	EC50
	Value	910 mg/l
	Acute Toxicity Study	Daphnia
	Exposure time	48 h
	Species	Daphnia magna
	Method	OECD Guideline 202 (Daphnia sp. Acute Immobilisation Test)
2-ethylhexanoic acid, iron salt 19583-54-1	Value type	EC50
	Value	500 mg/l
	Acute Toxicity Study	Algae
	Exposure time	72 h
	Species	Pseudokirchneriella subcapitata
	Method	OECD Guideline 201 (Alga, Growth Inhibition Test)
	Value type	EC10
	Value	231.2 mg/l
	Acute Toxicity Study	Algae
	Exposure time	72 h
	Species	Pseudokirchneriella subcapitata
	Method	OECD Guideline 201 (Alga, Growth Inhibition Test)
2-ethylhexanoic acid, iron salt 19583-54-1	Value type	EC10
	Value	72 mg/l
	Acute Toxicity Study	Bacteria
	Exposure time	17 h
	Species	not specified
	Method	DIN 38412, part 8 (Pseudomonas Zellvermehrungshemm-Test)
p-benzoquinone 106-51-4	Value type	LC50
	Value	0.04 - 0.125 mg/l
	Acute Toxicity Study	Fish
	Exposure time	96 h
	Species	Oncorhynchus mykiss
	Method	not specified
p-benzoquinone 106-51-4	Value type	EC50
	Value	0.13 mg/l
	Acute Toxicity Study	Daphnia
	Exposure time	48 h
	Species	Daphnia magna
	Method	OECD Guideline 202 (Daphnia sp. Acute Immobilisation Test)
p-benzoquinone 106-51-4	Value type	EC50
	Value	1.5 mg/l
	Acute Toxicity Study	Algae
	Exposure time	72 h
	Species	Scenedesmus subspicatus (new name: Desmodesmus subspicatus)
	Method	OECD Guideline 201 (Alga, Growth Inhibition Test)
p-benzoquinone 106-51-4	Value type	EC0
	Value	< 1 mg/l
	Acute Toxicity Study	Bacteria
	Exposure time	30 min
	Species	
	Method	not specified

Persistence and degradability:

2-Propenoic acid, 2-methyl-, phenylmethyl ester 2495-37-6	Result	readily biodegradable
	Route of application	
	Degradability	74 %
	Method	OECD Guideline 301 B (Ready Biodegradability: CO2 Evolution Test)
methacrylic acid 79-41-4	Result	readily biodegradable
	Route of application	aerobic
	Degradability	86 %
	Method	OECD Guideline 301 D (Ready Biodegradability: Closed Bottle Test)

	Result	inherently biodegradable
	Route of application	aerobic
	Degradability	100 %
	Method	OECD Guideline 302 B (Inherent biodegradability: Zahn-Wellens/EMPA Test)
1,1'-(1,3-phenylene)bis-1H-pyrrole-2,5-dione 3006-93-7	Result	not readily biodegradable.
	Route of application	aerobic
	Degradability	0 %
	Method	OECD Guideline 301 D (Ready Biodegradability: Closed Bottle Test)
Tert-butyl perbenzoate 614-45-9	Result	readily biodegradable
	Route of application	aerobic
	Degradability	70 %
	Method	OECD Guideline 301 D (Ready Biodegradability: Closed Bottle Test)
1-Methyltrimethylene dimethacrylate 1189-08-8	Result	readily biodegradable
	Route of application	aerobic
	Degradability	84 %
	Method	OECD Guideline 310 (Ready BiodegradabilityCO2 in Sealed Vessels (Headspace Test)
2,6-Di-tert-butyl-p-cresol 128-37-0	Result	not readily biodegradable.
	Route of application	aerobic
	Degradability	4.5 %
	Method	OECD Guideline 301 C (Ready Biodegradability: Modified MITI Test (I))
	Result	not inherently biodegradable
	Route of application	aerobic
	Degradability	5.2 - 5.6 %
	Method	OECD Guideline 302 C (Inherent Biodegradability: Modified MITI Test (II))
2-ethylhexanoic acid, iron salt 19583-54-1	Result	readily biodegradable
	Route of application	aerobic
	Degradability	99 %
	Method	OECD Guideline 301 E (Ready biodegradability: Modified OECD Screening Test)
p-benzoquinone 106-51-4	Result	not readily biodegradable.
	Route of application	aerobic
	Degradability	23 - 61 %
	Method	EU Method C.4-B (Determination of the "Ready" BiodegradabilityModified OECD Screening Test)

Bioaccumulative potential / Mobility in soil:

2-Propenoic acid, 2-methyl-, phenylmethyl ester 2495-37-6	LogPow	3.1
	Temperature	
	Method	OECD Guideline 117 (Partition Coefficient (n-octanol / water), HPLC Method)
methacrylic acid 79-41-4	LogPow	0.93
	Temperature	22 °C
	Method	OECD Guideline 107 (Partition Coefficient (n-octanol / water), Shake Flask Method)
1,1'-(1,3-phenylene)bis-1H-pyrrole-2,5-dione 3006-93-7	LogPow	0.67
	Temperature	24 °C
	Method	OECD Guideline 117 (Partition Coefficient (n-octanol / water), HPLC Method)
Tert-butyl perbenzoate 614-45-9	LogPow	3.00
	Temperature	25 °C
	Method	OECD Guideline 117 (Partition Coefficient (n-octanol / water), HPLC Method)
2,6-Di-tert-butyl-p-cresol 128-37-0	Bioconcentration factor (BCF)	330 - 1,800
	Exposure time	56 d
	Species	Cyprinus carpio
	Temperature	
	Method	OECD Guideline 305 C (Bioaccumulation: Test for the Degree of Bioconcentration in Fish)
2,6-Di-tert-butyl-p-cresol 128-37-0	LogPow	5.1
	Temperature	
	Method	OECD Guideline 107 (Partition Coefficient (n-octanol / water), Shake Flask Method)
p-benzoquinone 106-51-4	LogPow	0.1 - 0.3
	Temperature	23 °C
	Method	OECD Guideline 107 (Partition Coefficient (n-octanol / water), Shake Flask Method)

Section 13. Disposal considerations

Product

Method of disposal: Dispose of in accordance with local and national regulations.

Packaging

Disposal of uncleaned packages: Packaging that cannot be cleaned are to be disposed of in the same manner as the product.

Section 14. Transport information

Road transport ADR:
Not dangerous goods

Railroad transport RID:
Not dangerous goods

Inland water transport ADN:
Not dangerous goods

Marine transport IMDG:
Not dangerous goods

Air transport IATA:
Not dangerous goods

Section 15. Regulatory information

Regulatory Information: This Safety Data Sheet has been generated based on

LAW ON CHEMICALS No. 69/2025/QH15, issued on June 14, 2025;

Decree No. 24/2026/NĐ-CP, issued on January 17, 2026, ON THE LISTS OF CHEMICALS GOVERNED BY THE LAW ON CHEMICALS;

Decree No. 25/2026/NĐ-CP, issued on January 17, 2026, DETAILED REGULATIONS AND MEASURES FOR ORGANIZING AND GUIDING THE IMPLEMENTATION OF CERTAIN ARTICLES OF THE LAW ON CHEMICALS CONCERNING THE DEVELOPMENT OF THE CHEMICAL INDUSTRY AND CHEMICAL SAFETY AND SECURITY;

Decree No. 26/2026/NĐ-CP, issued on January 17, 2026, DETAILED REGULATIONS AND GUIDELINES FOR IMPLEMENTING CERTAIN ARTICLES OF THE LAW ON CHEMICALS REGARDING THE MANAGEMENT OF CHEMICAL ACTIVITIES AND HAZARDOUS CHEMICALS IN PRODUCTS AND GOODS;

Circular No. 01/2026/TT-BCT, issued on January 17, 2026, DETAILED REGULATIONS AND GUIDELINES FOR IMPLEMENTING CERTAIN ARTICLES OF THE LAW ON CHEMICALS AND GOVERNMENT DECREE NO. 26/2026/ND-CP DETAILING AND GUIDING THE IMPLEMENTATION OF CERTAIN ARTICLES OF THE LAW ON CHEMICALS REGARDING THE MANAGEMENT OF CHEMICAL ACTIVITIES AND HAZARDOUS CHEMICALS IN PRODUCTS AND GOODS;

Circular No. 02/2026/TT-BCT, issued on January 17, 2026, REGULATIONS ON SOME

IMPLEMENTATION MEASURES OF THE LAW ON CHEMICALS AND GOVERNMENT DECREE NO. 25/2026/ND-CP DETAILING AND PROVIDING MEASURES FOR ORGANIZING AND GUIDING THE IMPLEMENTATION OF SOME ARTICLES OF THE LAW ON CHEMICALS CONCERNING THE DEVELOPMENT OF THE CHEMICAL INDUSTRY AND CHEMICAL SAFETY AND SECURITY;

Decree No. 161/2024/ND-CP, issued on December 18, 2024, ON LIST OF DANGEROUS GOODS, TRANSPORT OF DANGEROUS GOODS AND PROCEDURES FOR ISSUANCE OF LICENSES OR CERTIFICATES OF COMPLETION OF TRAINING PROGRAMS FOR DRIVERS OR ESCORTS TRANSPORTING DANGEROUS GOODS BY ROAD;

Decree No. 34/2024/NĐ-CP, issued on March 31, 2024, ON LIST OF DANGEROUS GOODS, TRANSPORT OF DANGEROUS GOODS BY INLAND WATERCRAFT;

Decree No. 33/2024/NĐ-CP, issued on March 27, 2024, IMPLEMENTING THE CONVENTION ON THE PROHIBITION OF THE DEVELOPMENT, PRODUCTION, STOCKPILING AND USE OF CHEMICAL WEAPONS AND ON THEIR;

Decree No. 37/2026/NĐ-CP, issued on January 23, 2026, ELABORATING CERTAIN ARTICLES AND MEASURES FOR ORGANIZING AND GUIDING THE IMPLEMENTATION OF THE LAW ON PRODUCT AND GOODS QUALITY.

If other regulatory information applies that is not already provided or updated elsewhere in this Safety Data Sheet, then it is described in this subsection.

Global inventory status:

Regulatory list	Notification
TCSI	yes
TSCA	yes
DSL	yes
ENCS (JP)	yes
ISHL (JP)	yes
KECI (KR)	yes
PICCS (PH)	yes
IECSC	yes

Section 16. Other information

Disclaimer:

This Safety Data Sheet has been generated based on Law On Chemicals No. 69/2025/QH15; Decree No. 24/2026/NĐ-CP; Decree No. 25/2026/NĐ-CP; Decree No. 26/2026/NĐ-CP; Circular No. 01/2026/TT-BCT; Circular No. 02/2026/TT-BCT; Decree No. 161/2024/ND-CP; Decree No. 34/2024/NĐ-CP; Decree No. 33/2024/NĐ-CP, and Decree No. 37/2026/NĐ-CP.
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