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

Product name: LOCTITE PC 9660 AE12FO

Other means of identification: LOCTITE PC 9660 AE12FO
Product code: IDH209750
Recommended use of the chemical and restrictions on use

Intended use: Coating
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
Flammable aerosols	Category 2	
Skin corrosion/irritation	Category 2	
Toxic to reproduction	Category 2	
Specific target organ toxicity - repeated exposure	Category 1	Nervous system
Chronic hazards to the aquatic environment	Category 2	

GHS label elements:

Hazard pictogram:



Signal word: Danger

Hazard statement:
H223 Flammable aerosol.
H229 Pressurized container: May burst if heated.
H315 Causes skin irritation.
H361 Suspected of damaging fertility or the unborn child.
H372 Causes damage to organs through prolonged or repeated exposure.

H411 Toxic to aquatic life with long lasting effects.

Precaution:

Prevention:
P201 Obtain special instructions before use.
P210 Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.
P211 Do not spray on an open flame or other ignition source.
P251 Do not pierce or burn, even after use.
P261 Avoid breathing dust/fume/gas/mist/vapours/spray.
P264 Wash hands thoroughly after handling.
P270 Do not eat, drink or smoke when using this product.
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.
P308+P313 IF exposed or concerned: Get medical advice/attention.
P332+P313 If skin irritation occurs: Get medical advice/attention.
P362+P364 Take off contaminated clothing and wash it before reuse.
P391 Collect spillage.

Storage:
P410+P412 Protect from sunlight. Do not expose to temperatures exceeding 50°C/122°F.

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
Distillates (petroleum), hydrotreated light 64742-47-8	30- 60 %	Flammable liquids 4 H227 Aspiration hazard 1 H304 Acute hazards to the aquatic environment 2 H401 Chronic hazards to the aquatic environment 2 H411
propane 74-98-6	10- 30 %	Flammable gases 1 H220 Gases under pressure
n-Hexane 110-54-3	10- 30 %	Flammable liquids 2 H225 Skin corrosion/irritation 2 H315 Reproductive toxicant. 2 H361 Target Organ Systemic Toxicant - Single exposure 3 H336 Specific target organ toxicity - repeated exposure 1 H372 Aspiration hazard 1 H304 Acute hazards to the aquatic environment 2 H401 Chronic hazards to the aquatic environment 2 H411
Naphtha (petroleum), hydrotreated light; Low boiling point hydrogen treated naphtha <0,1% benzene 64742-49-0	1- 10 %	Aspiration hazard 1 H304 Acute hazards to the aquatic environment 2 H401 Chronic hazards to the aquatic environment 2 H411
n-Heptane 142-82-5	1- 10 %	Flammable liquids 2 H225 Skin corrosion/irritation 2 H315 Target Organ Systemic Toxicant - Single exposure 3 H336 Aspiration hazard 1 H304 Acute hazards to the aquatic environment 1 H400 Chronic hazards to the aquatic environment 1 H410
Methylcyclopentane 96-37-7	1- 10 %	Flammable liquids 2 H225 Skin corrosion/irritation 2 H315 Target Organ Systemic Toxicant - Single exposure 3 H336 Aspiration hazard 1 H304 Acute hazards to the aquatic environment 2 H401 Chronic hazards to the aquatic environment 2 H411
2-butoxyethanol 111-76-2	1- 10 %	Flammable liquids 4 H227 Acute toxicity 4; Oral H302 Acute toxicity 3; Inhalation H331 Skin corrosion/irritation 2 H315 Serious eye damage/eye irritation 2A H319

Methylcyclohexane 108-87-2	0.1- 1 %	Flammable liquids 2 H225 Skin corrosion/irritation 2 H315 Target Organ Systemic Toxicant - Single exposure 3 H336 Aspiration hazard 1 H304 Acute hazards to the aquatic environment 1 H400 Chronic hazards to the aquatic environment 1 H410

Section 4. First aid measures

Inhalation:
Move to fresh air.
If breathing is difficult, give oxygen.
If not breathing, give artificial respiration.
If symptoms develop and persist, get medical attention.

Skin contact:
Immediately flush skin with plenty of water (using soap, if available).
If symptoms develop and persist, get medical attention.

Eye contact:
Immediately flush eyes with plenty of water for at least 15 minutes.
Get medical attention.

Ingestion:
Do not induce vomiting.
If vomiting occurs, prevent aspiration by keeping the patient's head below the knees.
Never give anything by mouth to an unconscious person.
Get medical attention.

Section 5. Fire fighting measures

Suitable extinguishing media:
Water spray (fog), foam, dry chemical or carbon dioxide.

Specific hazards arising from the chemical:
Closed containers may rupture (due to build up of pressure) when exposed to extreme heat.
Vapor accumulation can flash or explode if ignited.

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.
Toxic and irritating 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:
Remove all sources of ignition.
Evacuate and ventilate spill area; dike spill to prevent entry into water system; wear full protective equipment during clean-up.
Soak up with inert absorbent material (e.g. sand, silica gel, acid binder, universal binder,

sawdust).
Store in a closed container until ready for disposal.
Dispose of contaminated material as waste according to Section 13.

Section 7. Handling and storage

Handling:

Use only with adequate ventilation.
Prevent contact with eyes, skin and clothing. Do not breathe vapor and mist. Wash thoroughly after handling.
Keep container closed.

Storage:

Store in a cool, well-ventilated place.
Do not puncture, incinerate, or expose to temperatures above 48.9 °C (120 °F).
Keep away from sources of ignition.

Section 8. Exposure controls / personal protection

Components with specific control parameters for workplace:

Mineral oil, excluding metal working fluids, pure, highly and severely refined, inhalable fraction 64742-47-8	**Value type**	Time Weighted Average (TWA):
	mg/m³	5
	Remarks	ACGIH
HYDROCARBONS (1-10 C) 74-98-6	**Value type**	Short-term exposure limit (STEL):
	mg/m³	300
	Remarks	VN OEL
PROPANE 74-98-6	**Remarks**	ACGIH D: Simple asphyxiant, EX: Explosion hazard
N-HEXANE 110-54-3	**Value type**	Time Weighted Average (TWA):
	ppm	50
	Remarks	ACGIH
N-HEXANE 110-54-3	**Value type**	Time Weighted Average (TWA):
	mg/m³	90
	Remarks	VN OEL
N-HEXANE 110-54-3	**Value type**	Skin designation:
	Remarks	ACGIH Danger of cutaneous absorption
Rubber solvent; Petroleum distillates (naphtha) 64742-49-0	**Value type**	Time Weighted Average (TWA):
	mg/m³	1,570
	Remarks	VN OEL
Hexane (Commercial, <54% n-Hexane) 64742-49-0	**Value type**	Skin designation:
	Remarks	ACGIH Danger of cutaneous absorption
Hexane (Commercial, <54% n-Hexane) 64742-49-0	**Value type**	Time Weighted Average (TWA):
	ppm	100
	Remarks	ACGIH
HEPTANE (ALL ISOMERS) 142-82-5	**Value type**	Time Weighted Average (TWA):
	mg/m³	800
	Remarks	VN OEL
Heptane, straight and branched isomers 142-82-5	**Value type**	Time Weighted Average (TWA):
	ppm	200
	Remarks	ACGIH
Heptane, straight and branched isomers 142-82-5	**Value type**	Short Term Exposure Limit (STEL):
	ppm	400
	Remarks	ACGIH
HEPTANE (ALL ISOMERS) 142-82-5	**Value type**	Short-term exposure limit (STEL):
	mg/m³	1,250
	Remarks	VN OEL
HYDROCARBONS (1-10 C) 142-82-5	**Value type**	Short-term exposure limit (STEL):
	mg/m³	300
	Remarks	VN OEL
2-BUTOXYETHANOL (EGBE) 111-76-2	**Value type**	Time Weighted Average (TWA):
	ppm	20
	Remarks	ACGIH
HYDROCARBONS (1-10 C) 108-87-2	**Value type**	Short-term exposure limit (STEL):
	mg/m³	300
	Remarks	VN OEL
Methylcyclohexane	**Value type**	Time Weighted Average (TWA):

108-87-2		
	ppm	100
	Remarks	ACGIH

Respiratory protection: Use NIOSH approved respirator if there is potential to exceed exposure limit(s).

Eye protection: Safety goggles or safety glasses with side shields.
Full face protection should be used if the potential for splashing or spraying of product exists.
Protective eye equipment should conform to EN166.

Body protection: Chemical resistant, impermeable gloves.
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: Brown
Aerosol
Odor: Hydrocarbons
Odor threshold (CA): No data available.
pH: Not available.
Melting point / freezing point: No data available.
Specific gravity: 0.850
Boiling point: 7 °C (44.6 °F)
Flash point: Not applicable to aerosols.
Evaporation rate: 1
Flammability (solid, gas): Flammable aerosol.
Lower explosive limit: 1.0 %(V)
Upper explosive limit: 9.5 %(V)
Vapor pressure: 4136 - 4826 mbar
(; 20 °C (68 °F))
Vapor density: > 1
Heavier than air
Density: 0.850 g/cm3
Solubility: Insoluble
Partition coefficient: n-octanol/water: No data available.
Auto ignition: No data available.
Decomposition temperature: No data available.
Viscosity: No data available.

VOC content: No data available.

Section 10. Stability and reactivity

Reactivity/Incompatible materials: Strong oxidizing agents.
Chemical stability: Stable under recommended storage conditions.
Possibility of hazardous reactions: Will not occur.

Conditions to avoid: Heat, flames, sparks and other sources of ignition.
Do not puncture, incinerate, or expose to temperatures above 48.9 °C (120 °F).
Store away from incompatible materials.

Hazardous decomposition products: Oxides of carbon.
Irritating organic vapours.

Section 11. Toxicological information

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

Inhalative toxicity: Acute toxicity estimate (ATE) : > 20 mg/l
Exposure time: 4 h
Test atmosphere: vapour
Method: Calculation method

Symptoms of Overexposure**:** None known.

Acute oral toxicity:

Distillates (petroleum), hydrotreated light 64742-47-8	Value type	LD50
	Value	> 5,000 mg/kg
	Species	rat
	Method	OECD Guideline 420 (Acute Oral Toxicity)
n-Hexane 110-54-3	Value type	LD50
	Value	16,000 mg/kg
	Species	rat
	Method	OECD Guideline 401 (Acute Oral Toxicity)
Naphtha (petroleum), hydrotreated light; Low boiling point hydrogen treated naphtha <0,1% benzene 64742-49-0	Value type	LD50
	Value	> 5,000 mg/kg
	Species	rat
	Method	OECD Guideline 401 (Acute Oral Toxicity)
n-Heptane 142-82-5	Value type	LD50
	Value	> 5,000 mg/kg
	Species	rat
	Method	equivalent or similar to OECD Guideline 401 (Acute Oral Toxicity)
Methylcyclopentane 96-37-7	Value type	LD50
	Value	16,000 mg/kg
	Species	rat
	Method	equivalent or similar to OECD Guideline 401 (Acute Oral Toxicity)
2-butoxyethanol 111-76-2	Value type	Acute toxicity estimate (ATE)
	Value	1,200 mg/kg
	Species	
	Method	Expert judgement
Methylcyclohexane 108-87-2	Value type	LD50
	Value	> 3,200 mg/kg
	Species	rat
	Method	not specified

Acute inhalative toxicity:

Distillates (petroleum), hydrotreated light 64742-47-8	Value type	LC50
	Value	> 5.3 mg/l
	Exposure time	4 h
	Species	rat
	Method	not specified
propane 74-98-6	Value type	LC50
	Value	> 800000 ppm
	Exposure time	15 min
	Species	rat
	Method	not specified
n-Hexane 110-54-3	Value type	LC50
	Value	> 31.86 mg/l
	Exposure time	4 h
	Species	rat
	Method	not specified
n-Heptane 142-82-5	Value type	LC50
	Value	> 29.29 mg/l
	Exposure time	4 h
	Species	rat
	Method	equivalent or similar to OECD Guideline 403 (Acute Inhalation Toxicity)
2-butoxyethanol 111-76-2	Value type	Acute toxicity estimate (ATE)
	Value	3 mg/l
	Exposure time	4 h
	Species	
	Method	Expert judgement
Methylcyclohexane 108-87-2	Value type	LC50
	Value	> 26.3 mg/l
	Exposure time	1 h
	Species	rat
	Method	not specified

Acute dermal toxicity:

Distillates (petroleum), hydrotreated light 64742-47-8	Value type	LD50
	Value	> 2,000 mg/kg
	Species	rabbit
	Method	OECD Guideline 402 (Acute Dermal Toxicity)
n-Hexane 110-54-3	Value type	LD50
	Value	> 2,000 mg/kg
	Species	rabbit
	Method	not specified
Naphtha (petroleum), hydrotreated light; Low boiling point hydrogen treated naphtha <0,1% benzene 64742-49-0	Value type	LD50
	Value	> 2,000 mg/kg
	Species	rabbit
	Method	OECD Guideline 402 (Acute Dermal Toxicity)
n-Heptane 142-82-5	Value type	LD50
	Value	> 2,000 mg/kg
	Species	rabbit
	Method	equivalent or similar to OECD Guideline 402 (Acute Dermal Toxicity)
2-butoxyethanol 111-76-2	Value type	Acute toxicity estimate (ATE)
	Value	> 5,000 mg/kg
	Species	
	Method	Expert judgement
2-butoxyethanol 111-76-2	Value type	LD50
	Value	> 2,000 mg/kg
	Species	guinea pig
	Method	OECD Guideline 402 (Acute Dermal Toxicity)
2-butoxyethanol 111-76-2	Value type	LD50
	Value	> 2,000 mg/kg
	Species	rat
	Method	OECD Guideline 402 (Acute Dermal Toxicity)
Methylcyclohexane 108-87-2	Value type	LD50
	Value	> 2,000 mg/kg

	Species	rabbit
	Method	OECD Guideline 402 (Acute Dermal Toxicity)

Skin corrosion/irritation:

Distillates (petroleum), hydrotreated light 64742-47-8	Result	slightly irritating
	Exposure time	
	Species	rabbit
	Method	Expert judgement
n-Hexane 110-54-3	Result	not irritating
	Exposure time	
	Species	rabbit
	Method	OECD Guideline 404 (Acute Dermal Irritation / Corrosion)
n-Heptane 142-82-5	Result	irritating
	Exposure time	
	Species	rabbit
	Method	OECD Guideline 404 (Acute Dermal Irritation / Corrosion)
2-butoxyethanol 111-76-2	Result	irritating
	Exposure time	4 h
	Species	rabbit
	Method	EU Method B.4 (Acute Toxicity: Dermal Irritation / Corrosion)
Methylcyclohexane 108-87-2	Result	not irritating
	Exposure time	24 h
	Species	rabbit
	Method	Draize Test

Serious eye damage/irritation:

Distillates (petroleum), hydrotreated light 64742-47-8	Result	not irritating
	Exposure time	
	Species	rabbit
	Method	EPA OTS 798.4500 (Acute Eye Irritation)
n-Hexane 110-54-3	Result	not irritating
	Exposure time	
	Species	rabbit
	Method	not specified
n-Heptane 142-82-5	Result	not irritating
	Exposure time	
	Species	rabbit
	Method	OECD Guideline 405 (Acute Eye Irritation / Corrosion)
2-butoxyethanol 111-76-2	Result	irritating
	Exposure time	24 h
	Species	rabbit
	Method	OECD Guideline 405 (Acute Eye Irritation / Corrosion)
Methylcyclohexane 108-87-2	Result	not irritating
	Exposure time	
	Species	rabbit
	Method	OECD Guideline 405 (Acute Eye Irritation / Corrosion)

Respiratory or skin sensitization:

Distillates (petroleum), hydrotreated light 64742-47-8	Result	not sensitising
	Test type	Buehler test
	Species	guinea pig
	Method	OECD Guideline 406 (Skin Sensitisation)
n-Hexane 110-54-3	Result	not sensitising
	Test type	Mouse local lymphnode assay (LLNA)
	Species	mouse
	Method	OECD Guideline 429 (Skin Sensitisation: Local Lymph Node Assay)
n-Heptane 142-82-5	Result	not sensitising
	Test type	Guinea pig maximisation test
	Species	guinea pig
	Method	OECD Guideline 406 (Skin Sensitisation)
2-butoxyethanol 111-76-2	Result	not sensitising
	Test type	Guinea pig maximisation test
	Species	guinea pig
	Method	OECD Guideline 406 (Skin Sensitisation)
Methylcyclohexane 108-87-2	Result	not sensitising
	Test type	Buehler test
	Species	guinea pig
	Method	OECD Guideline 406 (Skin Sensitisation)

Germ cell mutagenicity:

Distillates (petroleum), hydrotreated light 64742-47-8	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)
Distillates (petroleum), hydrotreated light 64742-47-8	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)
Distillates (petroleum), hydrotreated light 64742-47-8	Result	negative
	Type of study / Route of administration	mammalian cell gene mutation assay
	Metabolic activation / Exposure time	with and without
	Method	OECD Guideline 479 (Genetic Toxicology: In Vitro Sister Chromatid Exchange Assay in Mammalian Cells)
Distillates (petroleum), hydrotreated light 64742-47-8	Result	negative
	Type of study / Route of administration	intraperitoneal
	Metabolic activation / Exposure time	
	Species	rat
	Method	OECD Guideline 475 (Mammalian Bone Marrow Chromosome Aberration Test)
propane 74-98-6	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)
propane 74-98-6	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)
propane 74-98-6	Result	negative
	Type of study / Route of administration	
	Metabolic activation / Exposure time	
	Species	Drosophila melanogaster
	Method	not specified
propane 74-98-6	Result	negative
	Type of study / Route of administration	inhalation: gas
	Metabolic activation / Exposure time	
	Species	rat
	Method	OECD Guideline 474 (Mammalian Erythrocyte Micronucleus Test)
n-Hexane 110-54-3	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)
n-Hexane 110-54-3	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)
n-Hexane 110-54-3	Result	negative
	Type of study / Route of administration	inhalation: vapour
	Metabolic activation / Exposure time	
	Species	mouse
	Method	not specified
n-Hexane 110-54-3	Result	negative
	Type of study / Route of administration	inhalation: vapour
	Metabolic activation / Exposure time	
	Species	rat
	Method	not specified
n-Heptane 142-82-5	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)
n-Heptane 142-82-5	Result	negative
	Type of study / Route of administration	in vitro mammalian chromosome aberration test
	Metabolic activation / Exposure time	not applicable
	Method	OECD Guideline 473 (In vitro Mammalian Chromosome

		Aberration Test)
2-butoxyethanol 111-76-2	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)
2-butoxyethanol 111-76-2	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)
2-butoxyethanol 111-76-2	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)
2-butoxyethanol 111-76-2	Result	negative
	Type of study / Route of administration	intraperitoneal
	Metabolic activation / Exposure time	
	Species	mouse
	Method	OECD Guideline 474 (Mammalian Erythrocyte Micronucleus Test)
Methylcyclohexane 108-87-2	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)
Methylcyclohexane 108-87-2	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)
Methylcyclohexane 108-87-2	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)

Repeated dose toxicity:

propane 74-98-6	Result	
	Route of application	inhalation: gas
	Exposure time / Frequency of treatment	28 d6 h/d, 7 d/w
	Species	rat
	Method	OECD Guideline 422 (Combined Repeated Dose Toxicity Study with the Reproduction / Developmental Toxicity Screening Test)
n-Hexane 110-54-3	Result	NOAEL=40 mg/kg
	Route of application	oral: gavage
	Exposure time / Frequency of treatment	13 weeksdaily
	Species	rat
	Method	OECD Guideline 408 (Repeated Dose 90-Day Oral Toxicity in Rodents)
n-Hexane 110-54-3	Result	NOAEL=13.2 mg/kg
	Route of application	oral: gavage
	Exposure time / Frequency of treatment	90-120 d5 d / week
	Species	rat
	Method	not specified
n-Hexane 110-54-3	Result	LOAEL=1.76 mg/l
	Route of application	inhalation: vapour
	Exposure time / Frequency of treatment	13 weeks6 h/d; 5 d/w
	Species	mouse
	Method	equivalent or similar to OECD Guideline 413 (Subchronic Inhalation Toxicity: 90-Day)
n-Hexane 110-54-3	Result	LOAEL=> 0.352 - < 0.67 mg/l
	Route of application	inhalation: vapour
	Exposure time / Frequency of treatment	
	Species	human
	Method	not specified
n-Heptane 142-82-5	Result	
	Route of application	inhalation: vapour
	Exposure time / Frequency of treatment	16 weeks12 hours/day, 7 days/week
	Species	rat
	Method	
2-butoxyethanol 111-76-2	Result	NOAEL=0.121 mg/l
	Route of application	inhalation
	Exposure time / Frequency of treatment	42 or 90 days6 hours/day, 5 days/week
	Species	rat
	Method	not specified
2-butoxyethanol 111-76-2	Result	NOAEL=< 69 mg/kg
	Route of application	oral: drinking water
	Exposure time / Frequency of treatment	90 dcontinous
	Species	rat
	Method	equivalent or similar to OECD Guideline 408 (Repeated Dose 90-Day Oral Toxicity in Rodents)
Methylcyclohexane 108-87-2	Result	NOAEL=250 mg/kg
	Route of application	oral: gavage
	Exposure time / Frequency of treatment	28 ddaily
	Species	rat
	Method	OECD Guideline 422 (Combined Repeated Dose Toxicity Study with the Reproduction / Developmental Toxicity Screening Test)

Section 12. Ecological information

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

Ecotoxicity: H411 Toxic to aquatic life with long lasting effects.

Toxicity:

Distillates (petroleum), hydrotreated light 64742-47-8	Value type	LL50
	Value	> 2 - 5 mg/l
	Acute Toxicity Study	Fish
	Exposure time	96 h
	Species	Oncorhynchus mykiss
	Method	OECD Guideline 203 (Fish, Acute Toxicity Test)
Distillates (petroleum), hydrotreated light 64742-47-8	Value type	EL50
	Value	1.4 mg/l
	Acute Toxicity Study	Daphnia
	Exposure time	48 h
	Species	Daphnia magna
	Method	OECD Guideline 202 (Daphnia sp. Acute Immobilisation Test)
Distillates (petroleum), hydrotreated light 64742-47-8	Value type	EL50
	Value	8.3 mg/l
	Acute Toxicity Study	Algae
	Exposure time	72 h
	Species	Pseudokirchneriella subcapitata
	Method	OECD Guideline 201 (Alga, Growth Inhibition Test)
	Value type	NOELR
	Value	4 mg/l
	Acute Toxicity Study	Algae
	Exposure time	72 h
	Species	Pseudokirchneriella subcapitata
	Method	OECD Guideline 201 (Alga, Growth Inhibition Test)
n-Hexane 110-54-3	Value type	LC50
	Value	> 1 - 10 mg/l
	Acute Toxicity Study	Fish
	Exposure time	96 h
	Species	not specified
	Method	OECD Guideline 203 (Fish, Acute Toxicity Test)
n-Hexane 110-54-3	Value type	EC50
	Value	2.1 mg/l
	Acute Toxicity Study	Daphnia
	Exposure time	48 h
	Species	Daphnia magna
	Method	OECD Guideline 202 (Daphnia sp. Acute Immobilisation Test)
n-Hexane 110-54-3	Value type	EC50
	Value	> 1 - 10 mg/l
	Acute Toxicity Study	Algae
	Exposure time	72 h
	Species	not specified
	Method	OECD Guideline 201 (Alga, Growth Inhibition Test)
n-Hexane 110-54-3	Value type	EC50
	Value	> 1 - 10 mg/l
	Acute Toxicity Study	Bacteria
	Exposure time	3 h
	Species	not specified
	Method	OECD Guideline 209 (Activated Sludge, Respiration Inhibition Test)
Naphtha (petroleum), hydrotreated light; Low boiling point hydrogen treated naphtha <0,1% benzene 64742-49-0	Value type	LC50
	Value	> 1 - 10 mg/l
	Acute Toxicity Study	Fish
	Exposure time	
	Species	
	Method	OECD Guideline 203 (Fish, Acute Toxicity Test)
Naphtha (petroleum), hydrotreated light; Low boiling point hydrogen treated naphtha <0,1% benzene 64742-49-0	Value type	EC50
	Value	3 mg/l
	Acute Toxicity Study	Daphnia
	Exposure time	48 h
	Species	Daphnia magna
	Method	OECD Guideline 202 (Daphnia sp. Acute Immobilisation Test)
Naphtha (petroleum), hydrotreated light; Low boiling point hydrogen treated naphtha <0,1% benzene 64742-49-0	Value type	EC50
	Value	> 1 - 10 mg/l
	Acute Toxicity Study	Algae
	Exposure time	
	Species	

	Method	OECD Guideline 201 (Alga, Growth Inhibition Test)
n-Heptane 142-82-5	Value type	LC50
	Value	> 220 - 270 mg/l
	Acute Toxicity Study	Fish
	Exposure time	96 h
	Species	Leuciscus idus
	Method	OECD Guideline 203 (Fish, Acute Toxicity Test)
n-Heptane 142-82-5	Value type	EC50
	Value	1.5 mg/l
	Acute Toxicity Study	Daphnia
	Exposure time	48 h
	Species	Daphnia magna
	Method	other guideline:
Methylcyclopentane 96-37-7	Value type	EC50
	Value	4.45 mg/l
	Acute Toxicity Study	Daphnia
	Exposure time	48 h
	Species	other:
	Method	QSAR (Quantitative Structure Activity Relationship)
Methylcyclopentane 96-37-7	Value type	EC50
	Value	5.048 mg/l
	Acute Toxicity Study	Algae
	Exposure time	96 h
	Species	other:
	Method	QSAR (Quantitative Structure Activity Relationship)
2-butoxyethanol 111-76-2	Value type	LC50
	Value	1,474 mg/l
	Acute Toxicity Study	Fish
	Exposure time	96 h
	Species	Oncorhynchus mykiss
	Method	OECD Guideline 203 (Fish, Acute Toxicity Test)
	Value type	NOEC
	Value	> 100 mg/l
	Acute Toxicity Study	Fish
	Exposure time	21 d
	Species	Brachydanio rerio (new name: Danio rerio)
	Method	OECD Guideline 204 (Fish, Prolonged Toxicity Test: 14-day Study)
2-butoxyethanol 111-76-2	Value type	EC50
	Value	1,550 mg/l
	Acute Toxicity Study	Daphnia
	Exposure time	48 h
	Species	Daphnia magna
	Method	OECD Guideline 202 (Daphnia sp. Acute Immobilisation Test)
2-butoxyethanol 111-76-2	Value type	EC50
	Value	1,840 mg/l
	Acute Toxicity Study	Algae
	Exposure time	72 h
	Species	Pseudokirchneriella subcapitata
	Method	OECD Guideline 201 (Alga, Growth Inhibition Test)
	Value type	NOEC
	Value	286 mg/l
	Acute Toxicity Study	Algae
	Exposure time	72 h
	Species	Pseudokirchneriella subcapitata
	Method	OECD Guideline 201 (Alga, Growth Inhibition Test)
2-butoxyethanol 111-76-2	Value type	EC0
	Value	1,000 mg/l
	Acute Toxicity Study	Bacteria
	Exposure time	30 min
	Species	
	Method	not specified
Methylcyclohexane 108-87-2	Value type	LC50
	Value	2.07 mg/l
	Acute Toxicity Study	Fish
	Exposure time	96 h
	Species	Oryzias latipes
	Method	other guideline:
Methylcyclohexane 108-87-2	Value type	EC50
	Value	0.326 mg/l
	Acute Toxicity Study	Daphnia

	Exposure time	48 h
	Species	Daphnia magna
	Method	other guideline:
Methylcyclohexane 108-87-2	Value type	EC50
	Value	0.134 mg/l
	Acute Toxicity Study	Algae
	Exposure time	72 h
	Species	Pseudokirchneriella subcapitata (reported as Raphidocelis subcapitata)
	Method	other guideline:
	Value type	NOEC
	Value	0.022 mg/l
	Acute Toxicity Study	Algae
	Exposure time	72 h
	Species	Pseudokirchneriella subcapitata (reported as Raphidocelis subcapitata)
	Method	other guideline:

Persistence and degradability:

Distillates (petroleum), hydrotreated light 64742-47-8	Result	readily biodegradable
	Route of application	aerobic
	Degradability	61 %
	Method	OECD Guideline 301 F (Ready Biodegradability: Manometric Respirometry Test)
propane 74-98-6	Result	readily biodegradable
	Route of application	aerobic
	Degradability	> 60 %
	Method	OECD 301 A - F
n-Hexane 110-54-3	Result	readily biodegradable
	Route of application	aerobic
	Degradability	81 %
	Method	OECD Guideline 301 F (Ready Biodegradability: Manometric Respirometry Test)
Naphtha (petroleum), hydrotreated light; Low boiling point hydrogen treated naphtha <0,1% benzene 64742-49-0	Result	readily biodegradable
	Route of application	aerobic
	Degradability	89 %
	Method	OECD Guideline 301 F (Ready Biodegradability: Manometric Respirometry Test)
n-Heptane 142-82-5	Result	readily biodegradable
	Route of application	aerobic
	Degradability	70 %
	Method	other guideline:
Methylcyclopentane 96-37-7	Result	not readily biodegradable.
	Route of application	aerobic
	Degradability	0 %
	Method	OECD Guideline 301 D (Ready Biodegradability: Closed Bottle Test)
2-butoxyethanol 111-76-2	Result	readily biodegradable
	Route of application	aerobic
	Degradability	73 %
	Method	EU Method C.4-E (Determination of the "Ready" BiodegradabilityClosed Bottle Test)
Methylcyclohexane 108-87-2	Result	not readily biodegradable.
	Route of application	aerobic
	Degradability	0 %
	Method	OECD Guideline 301 D (Ready Biodegradability: Closed Bottle Test)

Bioaccumulative potential / Mobility in soil:

Distillates (petroleum), hydrotreated light 64742-47-8	LogPow	> 4
	Temperature	
	Method	QSAR (Quantitative Structure Activity Relationship)
n-Hexane 110-54-3	LogPow	4
	Temperature	20 °C
	Method	other guideline:
Naphtha (petroleum), hydrotreated light; Low boiling point hydrogen treated naphtha <0,1% benzene 64742-49-0	LogPow	4 - 5.7
	Temperature	
	Method	OECD Guideline 107 (Partition Coefficient (n-octanol / water), Shake Flask Method)

n-Heptane 142-82-5	Bioconcentration factor (BCF)	552
	Exposure time	
	Species	calculation
	Temperature	
	Method	QSAR (Quantitative Structure Activity Relationship)
n-Heptane 142-82-5	LogPow	4.66
	Temperature	
	Method	OECD Guideline 107 (Partition Coefficient (n-octanol / water), Shake Flask Method)
Methylcyclopentane 96-37-7	LogPow	3.37
	Temperature	20 °C
	Method	other guideline:
2-butoxyethanol 111-76-2	LogPow	0.81
	Temperature	25 °C
	Method	OECD Guideline 107 (Partition Coefficient (n-octanol / water), Shake Flask Method)
Methylcyclohexane 108-87-2	Bioconcentration factor (BCF)	> 95 - < 321
	Exposure time	56 day
	Species	Cyprinus carpio
	Temperature	25 °C
	Method	other guideline:
Methylcyclohexane 108-87-2	LogPow	3.88
	Temperature	
	Method	other guideline:

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:

Class: 2
Packing group:
Classification code: 5F
Hazard ident. number:
UN no.: 1950
Label: 2.1
Technical name: AEROSOLS

Railroad transport RID:

Class: 2
Packing group:
Classification code: 5F
Hazard ident. number: 23
UN no.: 1950
Label: 2.1
Technical name: AEROSOLS

Inland water transport ADN:

Class:	2
Packing group:	
Classification code:	5F
Hazard ident. number:	
UN no.:	1950
Label:	2.1
Technical name:	AEROSOLS

Marine transport IMDG:

Class:	2.1
Packing group:	
UN no.:	1950
Label:	2.1
EmS:	F-D ,S-U
Seawater pollutant:	Marine pollutant
Proper shipping name:	AEROSOLS (Heptanes)

Air transport IATA:

Class:	2.1
Packing group:	
Packaging instructions (passenger):	203
Packaging instructions (cargo):	203
UN no.:	1950
Label:	2.1
Proper shipping name:	Aerosols, flammable

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
TSCA	yes
DSL	yes
KECI (KR)	yes
IECSC	yes
NZIOC	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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