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

1.1 Product identifier

Trade name : RENLEASE® QZ 5111

Unique Formula Identifier (UFI) : A02A-E0TQ-M00R-P2GS

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

Use of the Substance/Mixture : Use in binder and release agents

1.3 Details of the supplier of the safety data sheet

Company : Huntsman Advanced Materials (Europe) BV
Address : Everslaan 45
3078 Everberg
Belgium
Telephone : +41 61 299 20 41
Telefax : +41 61 299 20 40

E-mail address of person responsible for the SDS : Global_Product_EHS_AdMat@huntsman.com

1.4 Emergency telephone number

Emergency telephone number : Centres Antipoison et de Toxicovigilance:
ANGERS: 02 41 48 21 21
BORDEAUX: 05 56 96 40 80
LILLE: 0 825 812 822
LYON: 04 72 11 69 11
MARSEILLE 04 91 75 25 25
NANCY: 03 83 32 36 36
PARIS: 01 40 05 48 48
RENNES: 02 99 59 22 22
STRASBOURG: 03 88 37 37 37
TOULOUSE: 05 61 77 74 47
EUROPE: +32 35 75 1234
France ORFILA: +33(0)145425959
ASIA: +65 6336-6011
China: +86 20 39377888
+86 532 83889090
India: + 91 22 42 87 5333
Australia: 1800 786 152
New Zealand: 0800 767 437
USA: +1 800-424-9300

SECTION 2: Hazards identification

2.1 Classification of the substance or mixture

Classification (REGULATION (EC) No 1272/2008)

Flammable liquids, Category 2	H225: Highly flammable liquid and vapour.
Skin irritation, Category 2	H315: Causes skin irritation.
Specific target organ toxicity - single exposure, Category 3, Central nervous system	H336: May cause drowsiness or dizziness.
Aspiration hazard, Category 1	H304: May be fatal if swallowed and enters airways.
Long-term (chronic) aquatic hazard, Category 2	H411: Toxic to aquatic life with long lasting effects.

2.2 Label elements

Labelling (REGULATION (EC) No 1272/2008)

Hazard pictograms :

Signal word : Danger

Hazard statements :
H225 Highly flammable liquid and vapour.
H304 May be fatal if swallowed and enters airways.
H315 Causes skin irritation.
H336 May cause drowsiness or dizziness.
H411 Toxic to aquatic life with long lasting effects.

Precautionary statements :

Prevention:

P210 Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.
P273 Avoid release to the environment.

Response:

P301 + P310 IF SWALLOWED: Immediately call a POISON CENTER/ doctor.
P331 Do NOT induce vomiting.
P370 + P378 In case of fire: Use dry sand, dry chemical or alcohol-resistant foam to extinguish.
P391 Collect spillage.

Hazardous components which must be listed on the label:

Naphtha (petroleum), hydrotreated light; Low boiling point hydrogen treated naphtha
methylcyclohexane
n-octane
hexane (containing < 5 % n-hexane (203-777-6))

2.3 Other hazards

This substance/mixture contains no components considered to be either persistent, bioaccumulative and toxic (PBT), or very persistent and very bioaccumulative (vPvB) at levels of 0.1% or higher.

Ecological information: The substance/mixture does not contain components considered to have endocrine disrupting properties according to REACH Article 57(f) or Commission Delegated regulation (EU) 2017/2100 or Commission Regulation (EU) 2018/605 at levels of 0.1% or higher

Toxicological information: The substance/mixture does not contain components considered to have endocrine disrupting properties according to REACH Article 57(f) or Commission Delegated regulation (EU) 2017/2100 or Commission Regulation (EU) 2018/605 at levels of 0.1% or higher

SECTION 3: Composition/information on ingredients

3.2 Mixtures

Hazardous components

Chemical name	CAS-No. EC-No. Index-No. Registration number	Classification	Concentration (% w/w)
Naphtha (petroleum), hydrotreated light; Low boiling point hydrogen treated naphtha	64742-49-0 265-151-9 649-328-00-1 01-2119475133-43	Flam. Liq. 2; H225 Skin Irrit. 2; H315 STOT SE 3; H336 (Central nervous system) Asp. Tox. 1; H304 Aquatic Chronic 2; H411	>= 70 - < 90
methylcyclohexane	108-87-2 203-624-3 601-018-00-7 01-2119556887-18	Flam. Liq. 2; H225 Skin Irrit. 2; H315 STOT SE 3; H336 (Central nervous system) Asp. Tox. 1; H304 Aquatic Acute 1; H400 Aquatic Chronic 2; H411 M-Factor (Acute aquatic toxicity): 1	>= 2,5 - < 10
n-octane	111-65-9 203-892-1 601-009-00-8 01-2119463939-19	Flam. Liq. 2; H225 Skin Irrit. 2; H315 STOT SE 3; H336 (Central nervous system) Asp. Tox. 1; H304 Aquatic Acute 1; H400 Aquatic Chronic 1; H410 M-Factor (Acute aquatic toxicity): 1	>= 2,5 - < 10

		M-Factor (Chronic aquatic toxicity): 1	
cyclohexane	110-82-7 203-806-2 601-017-00-1 01-2119463273-41	Flam. Liq. 2; H225 Skin Irrit. 2; H315 STOT SE 3; H336 (Central nervous system) Asp. Tox. 1; H304 Aquatic Acute 1; H400 Aquatic Chronic 1; H410 M-Factor (Acute aquatic toxicity): 1 M-Factor (Chronic aquatic toxicity): 1	>= 2,5 - < 10
hexane (containing < 5 % n-hexane (203-777-6))	107-83-5 203-523-4 601-007-00-7 01-2120768140-61	Flam. Liq. 2; H225 Skin Irrit. 2; H315 STOT SE 3; H336 (Central nervous system) Asp. Tox. 1; H304 Aquatic Chronic 2; H411	>= 2,5 - < 10

For explanation of abbreviations see section 16.

SECTION 4: First aid measures

4.1 Description of first aid measures

General advice : Move out of dangerous area.
Consult a physician.
Show this safety data sheet to the doctor in attendance.
Symptoms of poisoning may appear several hours later.
Treat symptomatically.
Get medical attention if symptoms occur.

Protection of first-aiders : First Aid responders should pay attention to self-protection and use the recommended protective clothing
If potential for exposure exists refer to Section 8 for specific personal protective equipment.
No action shall be taken involving any personal risk or without suitable training.

If inhaled : Consult a physician after significant exposure.
If inhaled, remove to fresh air.
Get medical attention if symptoms occur.

In case of skin contact : If skin irritation persists, call a physician.
If on skin, rinse well with water.
If on clothes, remove clothes.

In case of eye contact	:	Flush eyes with water as a precaution. Remove contact lenses. Keep eye wide open while rinsing. If eye irritation persists, consult a specialist.
If swallowed	:	Keep respiratory tract clear. Do NOT induce vomiting. Never give anything by mouth to an unconscious person. If symptoms persist, call a physician. Take victim immediately to hospital.

4.2 Most important symptoms and effects, both acute and delayed

None known.

4.3 Indication of any immediate medical attention and special treatment needed

Treatment	:	Treat symptomatically.

SECTION 5: Firefighting measures

5.1 Extinguishing media

Suitable extinguishing media	:	Water spray Alcohol-resistant foam Carbon dioxide (CO2) Dry chemical
Unsuitable extinguishing media	:	Exercise caution when using a high volume water jet as it may scatter and spread fire

5.2 Special hazards arising from the substance or mixture

Specific hazards during firefighting	:	Do not allow run-off from fire fighting to enter drains or water courses.
Hazardous combustion products	:	No hazardous combustion products are known

5.3 Advice for firefighters

Special protective equipment for firefighters	:	Wear self-contained breathing apparatus for firefighting if necessary.
Specific extinguishing methods	:	Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.
Further information	:	Collect contaminated fire extinguishing water separately. This must not be discharged into drains. Fire residues and contaminated fire extinguishing water must be disposed of in accordance with local regulations. For safety reasons in case of fire, cans should be stored separately in closed containments. Use a water spray to cool fully closed containers.

SECTION 6: Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures

Personal precautions : Use personal protective equipment.
Ensure adequate ventilation.
Remove all sources of ignition.
Evacuate personnel to safe areas.
Refer to protective measures listed in sections 7 and 8.
Beware of vapours accumulating to form explosive concentrations. Vapours can accumulate in low areas.

6.2 Environmental precautions

Environmental precautions : Prevent product from entering drains.
Prevent further leakage or spillage if safe to do so.
If the product contaminates rivers and lakes or drains inform respective authorities.

6.3 Methods and material for containment and cleaning up

Methods for cleaning up : Contain spillage, and then collect with non-combustible absorbent material, (e.g. sand, earth, diatomaceous earth, vermiculite) and place in container for disposal according to local / national regulations (see section 13).

6.4 Reference to other sections

For disposal considerations see section 13., See Section 1 for emergency contact information., For personal protection see section 8.

SECTION 7: Handling and storage

7.1 Precautions for safe handling

Advice on safe handling : Do not breathe vapours/dust.
Avoid exposure - obtain special instructions before use.
Avoid contact with skin and eyes.
For personal protection see section 8.
Smoking, eating and drinking should be prohibited in the application area.
Take precautionary measures against static discharges.
Open drum carefully as content may be under pressure.
Dispose of rinse water in accordance with local and national regulations.

Advice on protection against fire and explosion : Do not spray on a naked flame or any incandescent material.
Take necessary action to avoid static electricity discharge (which might cause ignition of organic vapours). Use only explosion-proof equipment. Keep away from open flames, hot surfaces and sources of ignition.

Hygiene measures : When using do not eat or drink. When using do not smoke.

Wash hands before breaks and at the end of workday.

7.2 Conditions for safe storage, including any incompatibilities

Requirements for storage areas and containers	:	No smoking. Keep container tightly closed in a dry and well-ventilated place. Containers which are opened must be carefully resealed and kept upright to prevent leakage. Observe label precautions. Keep in properly labelled containers.
Advice on common storage	:	For incompatible materials please refer to Section 10 of this SDS.
Recommended storage temperature	:	2 - 40 °C
Further information on storage stability	:	Stable under normal conditions.

7.3 Specific end use(s)

Specific use(s) : No data available

SECTION 8: Exposure controls/personal protection

8.1 Control parameters

Occupational Exposure Limits

Components	CAS-No.	Value type (Form of exposure)	Control parameters	Basis
methylcyclohexane	108-87-2	VME	400 ppm 1 600 mg/m3	FR VLE
Further information	Indicative exposure limits			
n-octane	111-65-9	VME	300 ppm 1 450 mg/m3	FR VLE
Further information	Indicative exposure limits			
cyclohexane	110-82-7	TWA	200 ppm 700 mg/m3	2006/15/EC
Further information	Indicative			
		VME	200 ppm 700 mg/m3	FR VLE
Further information	Regulatory binding exposure limits			
		VLCT (VLE)	375 ppm 1 300 mg/m3	FR VLE
Further information	Indicative exposure limits			
hexane (containing < 5 % n-hexane (203-777-6))	107-83-5	VME (Vapour)	1 000 mg/m3	FR VLE
Further information	Indicative exposure limits			
		VLCT (VLE) (Vapour)	1 500 mg/m3	FR VLE
Further information	Indicative exposure limits			

		VME	500 ppm 1 800 mg/m3	FR VLE
Further information	Indicative exposure limits			

Derived No Effect Level (DNEL) according to Regulation (EC) No. 1907/2006:

Substance name	End Use	Exposure routes	Potential health effects	Value
methylcyclohexane	Workers	Inhalation	Long-term systemic effects	64,3 mg/m3
	Workers	Inhalation	Acute systemic effects	1354,6 mg/m3
	Workers	Dermal	Long-term systemic effects	1,7 mg/kg bw/day
	Consumers	Inhalation	Long-term systemic effects	16 mg/m3
	Consumers	Inhalation	Acute systemic effects	1016 mg/m3
	Consumers	Dermal	Long-term systemic effects	0,8 mg/kg bw/day
	Consumers	Oral	Long-term systemic effects	0,4 mg/kg bw/day

Predicted No Effect Concentration (PNEC) according to Regulation (EC) No. 1907/2006:

Substance name	Environmental Compartment	Value
methylcyclohexane	Fresh water	1,34 µg/l
	Marine water	0,134 µg/l
	Freshwater - intermittent	13,4 µg/l
	Fresh water sediment	0,036 mg/kg dry weight (d.w.)
	Marine sediment	0,003 mg/kg dry weight (d.w.)
	Sewage treatment plant	273 µg/l
	Soil	0,01 mg/kg dry weight (d.w.)

8.2 Exposure controls

Personal protective equipment

Eye/face protection : Eye wash bottle with pure water
Tightly fitting safety goggles

Hand protection
Material : butyl-rubber

Material : Nitrile rubber
Break through time : 10 - 480 min

Material : Ethyl Vinyl Alcohol Laminate (EVAL)
Break through time : > 8 h

Remarks : Chemical-resistant, impervious gloves complying with an approved standard should be worn at all times when handling chemical products if a risk assessment indicates this is necessary. The suitability for a specific workplace should be

discussed with the producers of the protective gloves.

Skin and body protection	:	Impervious clothing Choose body protection according to the amount and concentration of the dangerous substance at the work place.
Respiratory protection	:	Use respiratory protection unless adequate local exhaust ventilation is provided or exposure assessment demonstrates that exposures are within recommended exposure guidelines Equipment should conform to EN 14387
Filter type	:	Organic vapour type (A)

SECTION 9: Physical and chemical properties

9.1 Information on basic physical and chemical properties

Physical state	:	Emulsion
Colour	:	colourless
Odour	:	solvent-like
Odour Threshold	:	No data is available on the product itself.
pH	:	substance/mixture is non-soluble (in water)
Melting point/freezing point	:	No data available
Boiling point	:	84 °C
Flash point	:	-8,99 °C Method: Pensky-Martens closed cup
Flammability (solid, gas)	:	No data is available on the product itself.
Upper explosion limit / Upper flammability limit	:	7,7 %(V)
Lower explosion limit / Lower flammability limit	:	0,6 %(V)
Vapour pressure	:	ca. 290 hPa (50 °C)
Relative vapour density	:	No data is available on the product itself.
Relative density	:	ca. 0,71 (20 °C)
Density	:	ca. 0,71 g/cm3 (20 °C) Method: DIN 53217
Solubility(ies)		
Water solubility	:	practically insoluble (20 °C)

Solubility in other solvents	:	No data is available on the product itself.
Partition coefficient: n-octanol/water	:	No data is available on the product itself.
Auto-ignition temperature	:	250 °C
Decomposition temperature	:	No data is available on the product itself.
Viscosity		
Viscosity, dynamic	:	ca. 30 mPa.s Method: ISO 3219
Viscosity, kinematic	:	7 - 20 mm2/s (40 °C)
Flow time	:	26 s Cross section: 4 mm Method: DIN 53211

9.2 Other information

Explosive properties	:	No data is available on the product itself.
Oxidizing properties	:	No data is available on the product itself.
Burning rate	:	No data is available on the product itself.
Evaporation rate	:	No data is available on the product itself.
Molecular weight	:	No data available

SECTION 10: Stability and reactivity

10.1 Reactivity

No dangerous reaction known under conditions of normal use.

10.2 Chemical stability

Stable under normal conditions.

10.3 Possibility of hazardous reactions

Hazardous reactions	:	Vapours may form explosive mixture with air.

10.4 Conditions to avoid

Conditions to avoid	:	Heat, flames and sparks.

10.5 Incompatible materials

Materials to avoid	:	Strong acids Strong oxidizing agents

10.6 Hazardous decomposition products

Hazardous decomposition products	:	carbon monoxide carbon dioxide hydrocarbons

SECTION 11: Toxicological information

11.1 Information on hazard classes as defined in Regulation (EC) No 1272/2008

Acute toxicity

Components:

Naphtha (petroleum), hydrotreated light; Low boiling point hydrogen treated naphtha:

Acute oral toxicity	:	LD50 (Rat, male and female): > 5 000 mg/kg Method: OECD Test Guideline 401
Acute inhalation toxicity	:	LC50 (Rat, male and female): > 7 630 mg/l Exposure time: 4 h Test atmosphere: vapour
Acute dermal toxicity	:	LD50 (Rabbit, male and female): > 2 000 mg/kg Method: OECD Test Guideline 402 Assessment: The substance or mixture has no acute dermal toxicity

methylcyclohexane:

Acute oral toxicity	:	LD50 (Rabbit): 4 000 - 4 500 mg/kg
Acute inhalation toxicity	:	LC50 (Rat): > 26,3 mg/l Exposure time: 1 h Test atmosphere: vapour Assessment: The substance or mixture has no acute inhalation toxicity
Acute dermal toxicity	:	LD50 (Rabbit): > 2 000 mg/kg Method: OECD Test Guideline 402 Assessment: The substance or mixture has no acute dermal toxicity

n-octane:

Acute oral toxicity	:	LD50 (Rat, male and female): > 5 000 mg/kg Method: OECD Test Guideline 401
Acute inhalation toxicity	:	LC50 (Rat, male and female): > 24,88 mg/l Exposure time: 4 h Test atmosphere: vapour Method: OECD Test Guideline 403 Assessment: The substance or mixture has no acute inhalation toxicity
Acute dermal toxicity	:	LD50 Dermal (Rabbit, male and female): > 2 000 mg/kg Method: OECD Test Guideline 402 Assessment: The substance or mixture has no acute dermal

toxicity

cyclohexane:

Acute oral toxicity : LD50 (Rat): 5 500 - 6 000 mg/kg

LD50 (Rat): 12 705 mg/kg
Method: No information available.

Acute inhalation toxicity : LC50 (Rat, male and female): > 19 070 mg/l
Exposure time: 4 h
Test atmosphere: vapour
Method: OECD Test Guideline 403
GLP: yes
Assessment: The substance or mixture has no acute inhalation toxicity

Skin corrosion/irritation

Components:

Naphtha (petroleum), hydrotreated light; Low boiling point hydrogen treated naphtha:

Species : Rabbit
Method : OECD Test Guideline 404
Result : Skin irritation

methylcyclohexane:

Species : Rabbit
Result : Skin irritation

n-octane:

Species : Rabbit
Method : OECD Test Guideline 404
Result : Skin irritation

cyclohexane:

Result : Skin irritation

hexane (containing < 5 % n-hexane (203-777-6)):

Species : Human
Assessment : Irritating to skin.
Result : Skin irritation

Serious eye damage/eye irritation

Components:

Naphtha (petroleum), hydrotreated light; Low boiling point hydrogen treated naphtha:

Species : Rabbit
Method : OECD Test Guideline 405
Result : No eye irritation

methylcyclohexane:

Species	:	Rabbit
Method	:	OECD Test Guideline 405
Result	:	No eye irritation

n-octane:

Species	:	Rabbit
Method	:	OECD Test Guideline 405
Result	:	No eye irritation

Respiratory or skin sensitisation

Components:

Naphtha (petroleum), hydrotreated light; Low boiling point hydrogen treated naphtha:

Exposure routes	:	Skin contact
Species	:	Guinea pig
Method	:	OECD Test Guideline 406
Result	:	Does not cause skin sensitisation.

methylcyclohexane:

Exposure routes	:	Skin
Species	:	Guinea pig
Method	:	OECD Test Guideline 406
Result	:	Does not cause skin sensitisation.

n-octane:

Test Type	:	Maximisation Test
Exposure routes	:	Dermal
Species	:	Guinea pig
Method	:	OECD Test Guideline 406
Result	:	Does not cause skin sensitisation.

hexane (containing < 5 % n-hexane (203-777-6)):

Test Type	:	Maximisation Test
Species	:	Guinea pig
Assessment	:	Did not cause sensitisation on laboratory animals.
Method	:	OECD Test Guideline 406
Result	:	Did not cause sensitisation on laboratory animals.
Remarks	:	Information given is based on data obtained from similar substances.

Germ cell mutagenicity

Components:

Naphtha (petroleum), hydrotreated light; Low boiling point hydrogen treated naphtha:

Genotoxicity in vitro	:	Test Type: Ames test Result: negative Test Type: In vitro mammalian cell gene mutation test Result: negative

Genotoxicity in vivo : Test Type: Micronucleus test
Application Route: Inhalation
Result: negative

Test Type: In vivo micronucleus test
Species: Rat
Application Route: Intraperitoneal injection
Result: negative

methylcyclohexane:

Genotoxicity in vitro : Concentration: 8 - 100 µg/L
Metabolic activation: with and without metabolic activation
Method: OECD Test Guideline 476
Result: negative

Concentration: 61.3 - 980 µg/L
Metabolic activation: with and without metabolic activation
Method: OECD Test Guideline 473
Result: negative

Metabolic activation: with and without metabolic activation
Method: OECD Test Guideline 471
Result: negative

n-octane:

Genotoxicity in vitro : Test Type: In vitro mammalian cell gene mutation test
Test system: human lymphoblastoid cells
Concentration: 5% v/v
Metabolic activation: with and without metabolic activation
Method: OECD Test Guideline 476
Result: negative

Test Type: Chromosome aberration test in vitro
Test system: rat hepatocytes
Concentration: 2.5, 5, 10µg/ml
Method: OECD Test Guideline 473
Result: negative

Test Type: Ames test
Test system: Salmonella tryphimurium and E. coli
Concentration: 250µg/ml
Metabolic activation: with and without metabolic activation
Method: No information available.
Result: negative

hexane (containing < 5 % n-hexane (203-777-6)):

Genotoxicity in vitro : Test Type: reverse mutation assay
Test system: Salmonella typhimurium
Metabolic activation: with and without metabolic activation
Method: OECD Test Guideline 471
Result: negative

Carcinogenicity

Components:

Naphtha (petroleum), hydrotreated light; Low boiling point hydrogen treated naphtha:

Species	:	Mouse, male
Application Route	:	Dermal
Result	:	negative

Reproductive toxicity

Components:

Naphtha (petroleum), hydrotreated light; Low boiling point hydrogen treated naphtha:

Effects on fertility	:	Test Type: Two-generation study Species: Rat, male and female Application Route: inhalation (vapour) General Toxicity - Parent: NOAEL: >= 20 000 mg/m³ General Toxicity F1: NOAEL: >= 20 000 mg/m³ Method: OECD Test Guideline 416 Result: No effects on fertility and early embryonic development were detected.
Effects on foetal development	:	Species: Rat Application Route: inhalation (vapour) General Toxicity Maternal: NOAEL: 23 900 mg/m³ Teratogenicity: NOAEL: 23 900 mg/m³ Result: No adverse effects

methylcyclohexane:

Effects on fertility	:	Species: Rat, male and female Application Route: Oral Dose: 250 milligram per kilogram Method: OECD Test Guideline 422 Result: negative Species: Rat, male and female Application Route: Inhalation Dose: 2020 mg/m³ Method: OECD Test Guideline 416 Result: negative
Effects on foetal development	:	Species: Rabbit Application Route: Inhalation General Toxicity Maternal: NOAEL: 28 100 mg/m³ Method: OECD Test Guideline 414 Result: No teratogenic effects Species: Rat Application Route: Inhalation General Toxicity Maternal: NOAEL: 1 720 mg/m³ Method: OECD Test Guideline 414 Result: No teratogenic effects

n-octane:

Effects on fertility : Test Type: Two-generation study
Species: Rat, male and female
Application Route: inhalation (vapour)
Dose: 0,900,3000,9000 parts per million
Duration of Single Treatment: 6 h
Frequency of Treatment: 5 days/week
General Toxicity - Parent: NOAEL: 31 680 mg/m³
General Toxicity F1: NOAEL: 10 560 mg/m³
Method: OECD Test Guideline 416
Result: negative

Effects on foetal development : Test Type: Embryo-foetal development
Species: Rabbit
Application Route: inhalation (vapour)
Dose: 0, 500, 2000, 7000 ppm
Duration of Single Treatment: 12 d
General Toxicity Maternal: NOAEC: > 7 000 ppm
Developmental Toxicity: NOAEC: > 7 000 ppm
Method: OECD Test Guideline 414
Result: No teratogenic effects

Test Type: Embryo-foetal development
Species: Rat
Application Route: inhalation (vapour)
Dose: 0, 900, 3000, 9000 ppm
Duration of Single Treatment: 9 d
General Toxicity Maternal: NOAEL: 10 560 mg/m³
Developmental Toxicity: NOAEL: 31 680 mg/m³
Method: OECD Test Guideline 414
Result: No teratogenic effects

STOT - single exposure

Components:

Naphtha (petroleum), hydrotreated light; Low boiling point hydrogen treated naphtha:

Exposure routes : inhalation (vapour)
Target Organs : Narcotic effects
Assessment : May cause drowsiness or dizziness.

methylcyclohexane:

Exposure routes : Inhalation
Target Organs : Respiratory Tract
Assessment : May cause drowsiness or dizziness.

n-octane:

Exposure routes : inhalation (vapour)
Target Organs : Central nervous system
Assessment : The substance or mixture is classified as specific target organ toxicant, single exposure, category 3 with narcotic effects.

cyclohexane:

Exposure routes : Inhalation

Target Organs	:	Central nervous system
Assessment	:	May cause drowsiness or dizziness.

hexane (containing < 5 % n-hexane (203-777-6)):

Exposure routes	:	Ingestion
Target Organs	:	Brain
Assessment	:	May cause drowsiness or dizziness.

Exposure routes	:	Inhalation
Target Organs	:	Brain
Assessment	:	May cause drowsiness or dizziness.

STOT - repeated exposure

No data available

Repeated dose toxicity

Components:

Naphtha (petroleum), hydrotreated light; Low boiling point hydrogen treated naphtha:

Species	:	Rat
NOEL	:	< 500 mg/kg bw/d
Application Route	:	Oral
Method	:	No information available.

Species	:	Rat
NOEL	:	> 2000 mg/kg bw/d
Application Route	:	Dermal
Method	:	No information available.

methylcyclohexane:

Species	:	Rat, male and female
NOAEL	:	100 mg/kg
Application Route	:	Ingestion
Exposure time	:	28 d
Dose	:	100, 300, 1000 mg/kg bw/day
Method	:	OECD Test Guideline 407

Species	:	Rat, male and female
NOAEL	:	250 mg/kg
Application Route	:	Ingestion
Exposure time	:	28 d
Dose	:	62.5, 250, 1000 mg/kg bw/da
Method	:	OECD Test Guideline 422

Species	:	Rat, male and female
NOEC	:	250 mg/m3
Application Route	:	Ingestion
Test atmosphere	:	vapour
Exposure time	:	8 640 h
Number of exposures	:	7 d
Method	:	Subacute toxicity

n-octane:

Species	:	Rat, male and female
NOAEL	:	24,3 mg/l
Application Route	:	inhalation (vapour)
Test atmosphere	:	vapour
Exposure time	:	13 weeks
Number of exposures	:	6h/d, 5d/wk
Dose	:	668, 2220 and 6646ppm
Control Group	:	yes
Method	:	OECD Test Guideline 413
Remarks	:	Information given is based on data obtained from similar substances.

Species	:	Rat, male
NOAEL	:	8,4 mg/l
Application Route	:	inhalation (vapour)
Test atmosphere	:	vapour
Exposure time	:	13 weeks
Number of exposures	:	6h/d. 5d/wk
Dose	:	1.9, 3.1, 8.4mg/L
Control Group	:	yes
Method	:	OECD Test Guideline 413
Remarks	:	Information given is based on data obtained from similar substances.

Species	:	Rat, male
NOAEL	:	> 14 mg/l
Application Route	:	inhalation (vapour)
Test atmosphere	:	vapour
Exposure time	:	3 days
Number of exposures	:	8hr/d
Dose	:	0, 1.4, 4.2, 14g/m³
Control Group	:	yes
Method	:	No information available.

Aspiration toxicity

Components:

Naphtha (petroleum), hydrotreated light; Low boiling point hydrogen treated naphtha:
May be fatal if swallowed and enters airways.

methylcyclohexane:
May be fatal if swallowed and enters airways.

n-octane:
May be fatal if swallowed and enters airways.

cyclohexane:
May be fatal if swallowed and enters airways.

hexane (containing < 5 % n-hexane (203-777-6)):
May be fatal if swallowed and enters airways.

11.2 Information on other hazards

Endocrine disrupting properties

Product:

Assessment : The substance/mixture does not contain components considered to have endocrine disrupting properties according to REACH Article 57(f) or Commission Delegated regulation (EU) 2017/2100 or Commission Regulation (EU) 2018/605 at levels of 0.1% or higher

Experience with human exposure

No data available

Toxicology, Metabolism, Distribution

No data available

Neurological effects

No data available

Further information

Product:

Remarks : Symptoms of overexposure may be headache, dizziness, tiredness, nausea and vomiting.
Concentrations substantially above the TLV value may cause narcotic effects.
Solvents may degrease the skin.

SECTION 12: Ecological information

12.1 Toxicity

Components:

Naphtha (petroleum), hydrotreated light; Low boiling point hydrogen treated naphtha:

Toxicity to fish : LL50 : 10 mg/l
Exposure time: 96 h
Method: OECD Test Guideline 203

Toxicity to daphnia and other aquatic invertebrates : EL50 (Daphnia magna (Water flea)): 4,5 mg/l
Exposure time: 48 h
Test Type: static test
Method: OECD Test Guideline 202

Toxicity to algae/aquatic plants : EL50 (Pseudokirchneriella subcapitata (algae)): 3,7 mg/l
Exposure time: 96 h
Test Type: static test
Method: OECD Test Guideline 201

NOELR (Pseudokirchneriella subcapitata (algae)): 0,5 mg/l
Exposure time: 96 h
Test Type: static test
Method: OECD Test Guideline 201

Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity)	:	NOELR: 2,6 mg/l Exposure time: 21 d Species: Daphnia magna (Water flea) Test Type: semi-static test Method: OECD Test Guideline 211

methylcyclohexane:

Toxicity to fish	:	LC50 (Oryzias latipes (Orange-red killifish)): 2,07 mg/l Exposure time: 96 h Test Type: semi-static test Test substance: Fresh water Method: OECD Test Guideline 203
Toxicity to daphnia and other aquatic invertebrates	:	EC50 (Daphnia magna (Water flea)): 0,326 mg/l Exposure time: 48 h Test Type: semi-static test Test substance: Fresh water Method: OECD Test Guideline 202
Toxicity to algae/aquatic plants	:	ErC50 (Pseudokirchneriella subcapitata (algae)): 0,134 mg/l Exposure time: 72 h Test Type: static test Test substance: Fresh water Method: OECD Test Guideline 201 NOEC (Pseudokirchneriella subcapitata (green algae)): 0,0221 mg/l Exposure time: 72 h Test Type: static test Test substance: Fresh water
M-Factor (Acute aquatic toxicity)	:	1
Toxicity to microorganisms	:	NOEC (activated sludge): 2,755 mg/l Exposure time: 14 d Test Type: static test Test substance: Fresh water

n-octane:

Toxicity to fish	:	LL50 (Oncorhynchus mykiss (rainbow trout)): 2,587 mg/l Exposure time: 96 h Method: QSAR
Toxicity to daphnia and other aquatic invertebrates	:	EC50 (Daphnia magna (Water flea)): 0,3 mg/l Exposure time: 48 h Test Type: static test Method: Other guidelines
Toxicity to algae/aquatic plants	:	EL50 (Pseudokirchneriella subcapitata (algae)): 2,084 mg/l Exposure time: 72 h Method: QSAR

NOELR (Pseudokirchneriella subcapitata (algae)): 0,466 mg/l
Exposure time: 72 h
Method: QSAR

M-Factor (Acute aquatic toxicity) : 1

Toxicity to microorganisms : EL50 (Tetrahymena pyriformis): 10,86 mg/l
Exposure time: 48 h
Method: QSAR

Toxicity to fish (Chronic toxicity) : 0,579 mg/l
Exposure time: 28 d
Species: Oncorhynchus mykiss (rainbow trout)
Method: QSAR

Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity) : NOELR: 1 mg/l
Exposure time: 21 d
Species: Daphnia magna (Water flea)
Method: OECD Test Guideline 211

NOEC: 0,17 mg/l
Exposure time: 21 d
Species: Daphnia magna (Water flea)
Method: OECD Test Guideline 211

M-Factor (Chronic aquatic toxicity) : 1

cyclohexane:

Toxicity to fish : LC50 (Pimephales promelas (fathead minnow)): 4,53 mg/l
Exposure time: 96 h
Test Type: flow-through test
Method: OECD Test Guideline 203

LC50 : 93 - 117 mg/l
Exposure time: 96 h

LC0 : 32 mg/l
Exposure time: 96 h
Method: No information available.

Toxicity to daphnia and other aquatic invertebrates : EC50 (Daphnia magna (Water flea)): 0,9 mg/l
Exposure time: 48 h
Test Type: static test
Method: OECD Test Guideline 202

EC50 : 3,78 mg/l
Exposure time: 48 h

Toxicity to algae/aquatic plants : IC50 : > 500 mg/l
Exposure time: 72 h

ErC50 (Pseudokirchneriella subcapitata (green algae)): >

4,425 mg/l
Exposure time: 72 h
Method: OECD Test Guideline 201
GLP: yes

NOEC (Pseudokirchneriella subcapitata (green algae)): 0,925 mg/l
Exposure time: 72 h
Method: OECD Test Guideline 201
GLP: yes

M-Factor (Acute aquatic toxicity) : 1

Toxicity to microorganisms : IC50 : 24 mg/l
Exposure time: 15 h

M-Factor (Chronic aquatic toxicity) : 1

hexane (containing < 5 % n-hexane (203-777-6)):

Toxicity to daphnia and other aquatic invertebrates : LC50 (Daphnia magna (Water flea)): 3,649 mg/l
End point: Immobilization
Exposure time: 48 h
Test substance: Fresh water
Method: Calculation method
GLP: no

Toxicity to algae/aquatic plants : EC50 (green algae): 4,321 mg/l
Exposure time: 96 h
Method: Calculation method
GLP: no

12.2 Persistence and degradability

Components:

Naphtha (petroleum), hydrotreated light; Low boiling point hydrogen treated naphtha:

Biodegradability : Result: Inherently biodegradable.

methylcyclohexane:

Biodegradability : Test Type: aerobic
Inoculum: activated sludge
Result: Not readily biodegradable.
Biodegradation: 0 %
Exposure time: 28 d
Method: OECD Test Guideline 301D

Photodegradation : Test Type: Air
Rate constant: < .00001
Degradation (direct photolysis): 50 %

n-octane:

Biodegradability	:	Result: Readily biodegradable. Biodegradation: 70 % Exposure time: 10 d

cyclohexane:

Biodegradability	:	Result: Not readily biodegradable. Biodegradation: < 60 % Exposure time: 28 d

hexane (containing < 5 % n-hexane (203-777-6)):

Biodegradability	:	Test Type: aerobic Inoculum: activated sludge, adapted Concentration: 100 mg/l Result: Readily biodegradable. Biodegradation: 93 % Exposure time: 28 d Method: OECD Test Guideline 301C GLP: yes
Biochemical Oxygen Demand (BOD)	:	105 - 121 mg/g Method: OECD Test Guideline 301C GLP: yes

12.3 Bioaccumulative potential

Components:

methylcyclohexane:

Bioaccumulation	:	Species: Cyprinus carpio (Carp) Exposure time: 56 d Bioconcentration factor (BCF): 95 - 321 Method: flow-through test
Partition coefficient: n-octanol/water	:	log Pow: 3,88

n-octane:

Bioaccumulation	:	Species: Other Exposure time: 105 min Temperature: 15 °C Bioconcentration factor (BCF): 198,7
Partition coefficient: n-octanol/water	:	log Pow: 5,15

cyclohexane:

Bioaccumulation	:	Bioconcentration factor (BCF): 89
Partition coefficient: n-octanol/water	:	log Pow: 3,44

hexane (containing < 5 % n-hexane (203-777-6)):

Partition coefficient: n-octanol/water	:	log Pow: 3,214 (25 °C) pH: 7 Method: Calculation method GLP: no

12.4 Mobility in soil

Components:

Naphtha (petroleum), hydrotreated light; Low boiling point hydrogen treated naphtha:

Distribution among environmental compartments	:	Koc: > 60,7 - < 229,2, log Koc: > 1,783 - < 2,36 Method: Calculation method

methylcyclohexane:

Distribution among environmental compartments	:	Koc: 233,9

n-octane:

Distribution among environmental compartments	:	Koc: 436,8, log Koc: 2,64 Method: Calculation method

cyclohexane:

Distribution among environmental compartments	:	Koc: 160

12.5 Results of PBT and vPvB assessment

Product:

Assessment	:	This substance/mixture contains no components considered to be either persistent, bioaccumulative and toxic (PBT), or very persistent and very bioaccumulative (vPvB) at levels of 0.1% or higher.

12.6 Endocrine disrupting properties

Product:

Assessment	:	The substance/mixture does not contain components considered to have endocrine disrupting properties according to REACH Article 57(f) or Commission Delegated regulation (EU) 2017/2100 or Commission Regulation (EU) 2018/605 at levels of 0.1% or higher

12.7 Other adverse effects

Product:

Additional ecological information	:	An environmental hazard cannot be excluded in the event of unprofessional handling or disposal. Toxic to aquatic life with long lasting effects.

SECTION 13: Disposal considerations

13.1 Waste treatment methods

Product	:	Dispose of contents and container in accordance with all local, regional, national and international regulations. Do not dispose of waste into sewer. Do not contaminate ponds, waterways or ditches with chemical or used container.
Contaminated packaging	:	Empty remaining contents. Dispose of as unused product. Do not re-use empty containers. Do not burn, or use a cutting torch on, the empty drum.

SECTION 14: Transport information

14.1 UN number or ID number

ADN	:	UN 1993
ADR	:	UN 1993
RID	:	UN 1993
IMDG	:	UN 1993
IATA	:	UN 1993

14.2 UN proper shipping name

ADN	:	FLAMMABLE LIQUID, N.O.S. (NAPHTA, HYDROTREATED LIGHT AND HEXANE, MIXTURE OF ISOMERS (MAX. 5% N-HEXANE))
ADR	:	FLAMMABLE LIQUID, N.O.S. (NAPHTA, HYDROTREATED LIGHT AND HEXANE, MIXTURE OF ISOMERS (MAX. 5% N-HEXANE))
RID	:	FLAMMABLE LIQUID, N.O.S. (NAPHTA, HYDROTREATED LIGHT AND HEXANE, MIXTURE OF ISOMERS (MAX. 5% N-HEXANE))
IMDG	:	FLAMMABLE LIQUID, N.O.S. (NAPHTA, HYDROTREATED LIGHT AND HEXANE, MIXTURE OF ISOMERS (MAX. 5% N-HEXANE))
IATA	:	Flammable liquid, n.o.s. (NAPHTA, HYDROTREATED LIGHT AND HEXANE, MIXTURE OF ISOMERS (MAX. 5% N-HEXANE))

14.3 Transport hazard class(es)

		Class	Subsidiary risks
ADN	:	3	
ADR	:	3	
RID	:	3	

IMDG : 3

IATA : 3

14.4 Packing group

ADN

Packing group	:	II
Classification Code	:	F1
Hazard Identification Number	:	33
Labels	:	3

ADR

Packing group	:	II
Classification Code	:	F1
Hazard Identification Number	:	33
Labels	:	3
Tunnel restriction code	:	(D/E)

RID

Packing group	:	II
Classification Code	:	F1
Hazard Identification Number	:	33
Labels	:	3

IMDG

Packing group	:	II
Labels	:	3
EmS Code	:	F-E, S-E

IATA (Cargo)

Packing instruction (cargo aircraft)	:	364
Packing instruction (LQ)	:	Y341
Packing group	:	II
Labels	:	Flammable Liquids

IATA (Passenger)

Packing instruction (passenger aircraft)	:	353
Packing instruction (LQ)	:	Y341
Packing group	:	II
Labels	:	Flammable Liquids

14.5 Environmental hazards

ADN

Environmentally hazardous : yes

ADR

Environmentally hazardous : yes

RID

Environmentally hazardous : yes

IMDG

Marine pollutant : yes

14.6 Special precautions for user

The transport classification(s) provided herein are for informational purposes only, and solely based upon the properties of the unpackaged material as it is described within this Safety Data

Sheet. Transportation classifications may vary by mode of transportation, package sizes, and variations in regional or country regulations.

14.7 Maritime transport in bulk according to IMO instruments

Not applicable for product as supplied.

SECTION 15: Regulatory information

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

REACH - List of substances subject to authorisation (Annex XIV)	:	Not applicable	
REACH - Candidate List of Substances of Very High Concern for Authorisation (Article 59).	:	This product does not contain substances of very high concern (Regulation (EC) No 1907/2006 (REACH), Article 57).	
REACH - Restrictions on the manufacture, placing on the market and use of certain dangerous substances, mixtures and articles (Annex XVII)	:	Conditions of restriction for the following entries should be considered: Number on list 75, 3 If you intend to use this product as tattoo ink, please contact your vendor. cyclohexane (Number on list 57)	
		E1	
Seveso III: Directive 2012/18/EU of the European Parliament and of the Council on the control of major-accident hazards involving dangerous substances.		P5c	FLAMMABLE LIQUIDS
		E2	ENVIRONMENTAL HAZARDS
		34	Petroleum products: (a) gasolines and naphthas, (b) kerosenes (including jet fuels), (c) gas oils (including diesel fuels, home heating oils and gas oil blending streams),(d) heavy fuel oils (e) alternative fuels serving the same purposes and with similar properties as regards flammability and environmental hazards as the products referred to in points (a) to (d)

Occupational Illnesses (R-461-3, France)	:	84, 36
Installations classified for the protection of the environment (Environment Code R511-9)	:	4331, 4511, 4510, 4734

Other regulations:

Take note of Directive 94/33/EC on the protection of young people at work or stricter national regulations, where applicable.

The components of this product are reported in the following inventories:

DSL	:	All components of this product are on the Canadian DSL
AIIC	:	On the inventory, or in compliance with the inventory
ENCS	:	On the inventory, or in compliance with the inventory
KECI	:	On the inventory, or in compliance with the inventory
PICCS	:	On the inventory, or in compliance with the inventory
IECSC	:	On the inventory, or in compliance with the inventory
TCSI	:	On the inventory, or in compliance with the inventory
TSCA	:	All substances listed as active on the TSCA inventory

Inventories

AICS (Australia), AIIC (Australia), DSL (Canada), IECSC (China), ENCS (Japan), KECI (Korea), NZIOC (New Zealand), PICCS (Philippines), TCSI (Taiwan), TSCA (United States of America (USA))

15.2 Chemical safety assessment

Chemical Safety Assessments for all substances in this product are either Complete or Not applicable.

SECTION 16: Other information

Full text of H-Statements

H225	:	Highly flammable liquid and vapour.

H304	:	May be fatal if swallowed and enters airways.
H315	:	Causes skin irritation.
H336	:	May cause drowsiness or dizziness.
H400	:	Very toxic to aquatic life.
H410	:	Very toxic to aquatic life with long lasting effects.
H411	:	Toxic to aquatic life with long lasting effects.

Full text of other abbreviations

Aquatic Acute	:	Short-term (acute) aquatic hazard
Aquatic Chronic	:	Long-term (chronic) aquatic hazard
Asp. Tox.	:	Aspiration hazard
Flam. Liq.	:	Flammable liquids
Skin Irrit.	:	Skin irritation
STOT SE	:	Specific target organ toxicity - single exposure
2006/15/EC	:	Europe. Indicative occupational exposure limit values
FR VLE	:	France. Occupational Exposure Limits
2006/15/EC / TWA	:	Limit Value - eight hours
FR VLE / VME	:	Time Weighted Average
FR VLE / VLCT (VLE)	:	Short Term Exposure Limit

Further information

Classification of the mixture:		**Classification procedure:**
Flam. Liq. 2	H225	Based on product data or assessment
Skin Irrit. 2	H315	Calculation method
STOT SE 3	H336	Calculation method
Asp. Tox. 1	H304	Calculation method
Aquatic Chronic 2	H411	Calculation method

The information and recommendations in this publication are to the best of our knowledge, information and belief accurate at the date of publication, NOTHING HEREIN IS TO BE CONSTRUED AS A WARRANTY, EXPRESS OR OTHERWISE.

IN ALL CASES, IT IS THE RESPONSIBILITY OF THE USER TO DETERMINE THE APPLICABILITY OF SUCH INFORMATION AND RECOMMENDATIONS AND THE SUITABILITY OF ANY PRODUCT FOR ITS OWN PARTICULAR PURPOSE.

THE PRODUCT MAY PRESENT HAZARDS AND SHOULD BE USED WITH CAUTION. WHILE CERTAIN HAZARDS ARE DESCRIBED IN THIS PUBLICATION, NO GUARANTEE IS MADE THAT THESE ARE THE ONLY HAZARDS THAT EXIST.

Hazards, toxicity and behaviour of the products may differ when used with other materials and are dependent upon the manufacturing circumstances or other processes. Such hazards, toxicity and behaviour should be determined by the user and made known to handlers, processors and end users.

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