

SAFETY DATA SHEET



RENLEASE® QZ 5111

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

1.1 Product identifier

Product name : RENLEASE® QZ 5111
Registration number : Not available.
Product code : 00049314
Product description :

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

Product use : Mould release for tooling systems

1.3 Details of the supplier of the safety data sheet

Supplier : Huntsman Advanced Materials (Europe)BVBA
Everslaan 45
3078 Everberg / Belgium
Tel.: +41 61 299 20 41
Fax: +41 61 299 20 40

e-mail address of person responsible for this SDS : Global_Product_EHS_AdMat@huntsman.com

E-mail address to request full REACH registration number upon EU member State Authority request :
REACH_Registration_Nr_AM@huntsman.com

1.4 Emergency telephone number

Supplier

Telephone number : 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

Product definition : Mixture

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

Flam. Liq. 2, H225
Skin Irrit. 2, H315
Repr. 2, H361f (Fertility)
STOT SE 3, H336 (Narcotic effects)
Aquatic Chronic 2, H411

Ingredients of unknown toxicity :

Ingredients of unknown ecotoxicity :

Classification according to Directive 1999/45/EC [DPD]

The product is classified as dangerous according to Directive 1999/45/EC and its amendments.

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SECTION 2: Hazards identification

Classification : F; R11
 Xi; R38
 R67
 N; R51/53

Physical/chemical hazards : Highly flammable.

Human health hazards : Irritating to skin. Vapours may cause drowsiness and dizziness.

Environmental hazards : Toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

See Section 16 for the full text of the R phrases or H statements declared above.

See Section 11 for more detailed information on health effects and symptoms.

2.2 Label elements

Hazard pictograms :



Signal word : Danger

Hazard statements : Highly flammable liquid and vapour.
 Causes skin irritation.
 Suspected of damaging fertility.
 May be fatal if swallowed and enters airways.
 May cause drowsiness or dizziness.
 Toxic to aquatic life with long lasting effects.

Precautionary statements

General : Not applicable.

Prevention : Obtain special instructions before use. Wear protective gloves: > 8 hours (breakthrough time): Ethyl Vinyl Alcohol Laminate (EVAL), butyl rubber. Wear eye or face protection. Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. Use explosion-proof electrical, ventilating, lighting and all material-handling equipment. Avoid release to the environment.

Response : IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing. IF SWALLOWED: Immediately call a POISON CENTER or physician. Do NOT induce vomiting. IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water or shower.

Storage : Keep cool.

Disposal : Dispose of contents and container in accordance with all local, regional, national and international regulations.

Hazardous ingredients : naphtha (petroleum), hydrogen treated, light, contains <0.1% benzene n-hexane

Supplemental label elements :

Special packaging requirements

Containers to be fitted with child-resistant fastenings : Not applicable.

Tactile warning of danger : Not applicable.

2.3 Other hazards

Other hazards which do not result in classification : None known.

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SECTION 3: Composition/information on ingredients

3.2 Mixtures : Mixture

Product/ingredient name	Identifiers	%	Classification		Type
			67/548/EEC	Regulation (EC) No. 1272/2008 [CLP]	
Naphtha (petroleum), hydrotreated light	CAS: 64742-49-0 EC: 265-151-9	60-100	F; R11 Xn; R65 Xi; R38	Flam. Liq. 2, H225 Skin Irrit. 2, H315 STOT SE 3, H336 (Narcotic effects)	[1]
Methylcyclohexane	CAS: 108-87-2 EC: 203-624-3 RRN: 01-2119556887-18	7-13	R67 N; R51/53 F; R11	Asp. Tox. 1, H304 Aquatic Chronic 2, H411 Flam. Liq. 2, H225	[1] [2]
octane	CAS: 111-65-9 EC: 203-892-1	7-13	F; R11 Xn; R65 Xi; R38	Skin Irrit. 2, H315 STOT SE 3, H336 (Narcotic effects) Asp. Tox. 1, H304 Aquatic Acute 1, H400 Aquatic Chronic 2, H411 Flam. Liq. 2, H225	[1] [2]
n-hexane	CAS: 110-54-3 EC: 203-777-6	3-7	F; R11 R67 N; R50/53	Asp. Tox. 1, H304 Aquatic Acute 1, H400 Aquatic Chronic 1, H410 Flam. Liq. 2, H225	[1] [2]
cyclohexane	CAS: 110-82-7 EC: 203-806-2	3-7	Repr. Cat. 3; R62 Xn; R48/20, R65 Xi; R38 R67 N; R51/53 F; R11 Xn; R65 Xi; R38 R67 N; R50/53	Skin Irrit. 2, H315 Repr. 2, H361f (Fertility) STOT SE 3, H336 (Narcotic effects) STOT RE 2, H373 (central nervous system (CNS), muscle tissue, peripheral nervous system and testes) (inhalation) Asp. Tox. 1, H304 Aquatic Chronic 2, H411 Flam. Liq. 2, H225 Skin Irrit. 2, H315 STOT SE 3, H336 (Narcotic effects) Asp. Tox. 1, H304 Aquatic Acute 1, H400 Aquatic Chronic 1, H410	[1] [2]
			See Section 16 for the full text of the R-phrases declared above.	See Section 16 for the full text of the H statements declared above.	

There are no additional ingredients present which, within the current knowledge of the supplier and in the concentrations applicable, are classified as hazardous to health or the environment and hence require reporting in this section.

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SECTION 3: Composition/information on ingredients

- [1] Substance classified with a health or environmental hazard
- [2] Substance with a workplace exposure limit
- [3] Substance meets the criteria for PBT according to Regulation (EC) No. 1907/2006, Annex XIII
- [4] Substance meets the criteria for vPvB according to Regulation (EC) No. 1907/2006, Annex XIII
- [5] Substance of equivalent concern

Occupational exposure limits, if available, are listed in Section 8.

SECTION 4: First aid measures

4.1 Description of first aid measures

- Eye contact** : Immediately flush eyes with plenty of water, occasionally lifting the upper and lower eyelids. Check for and remove any contact lenses. Continue to rinse for at least 10 minutes. Get medical attention.
- Inhalation** : Remove victim to fresh air and keep at rest in a position comfortable for breathing. If it is suspected that fumes are still present, the rescuer should wear an appropriate mask or self-contained breathing apparatus. If not breathing, if breathing is irregular or if respiratory arrest occurs, provide artificial respiration or oxygen by trained personnel. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation. Get medical attention. If necessary, call a poison center or physician. If unconscious, place in recovery position and get medical attention immediately. Maintain an open airway. Loosen tight clothing such as a collar, tie, belt or waistband.
- Skin contact** : Flush contaminated skin with plenty of water. Remove contaminated clothing and shoes. Continue to rinse for at least 10 minutes. Get medical attention. Wash clothing before reuse. Clean shoes thoroughly before reuse.
- Ingestion** : Get medical attention immediately. Call a poison center or physician. Wash out mouth with water. Remove dentures if any. Remove victim to fresh air and keep at rest in a position comfortable for breathing. If material has been swallowed and the exposed person is conscious, give small quantities of water to drink. Stop if the exposed person feels sick as vomiting may be dangerous. Aspiration hazard if swallowed. Can enter lungs and cause damage. Do not induce vomiting. If vomiting occurs, the head should be kept low so that vomit does not enter the lungs. Never give anything by mouth to an unconscious person. If unconscious, place in recovery position and get medical attention immediately. Maintain an open airway. Loosen tight clothing such as a collar, tie, belt or waistband.
- Protection of first-aiders** : No action shall be taken involving any personal risk or without suitable training. If it is suspected that fumes are still present, the rescuer should wear an appropriate mask or self-contained breathing apparatus. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation.

4.2 Most important symptoms and effects, both acute and delayed

Potential acute health effects

- Eye contact** : Causes serious eye irritation.
- Inhalation** : Can cause central nervous system (CNS) depression. May cause drowsiness or dizziness.
- Skin contact** : Causes skin irritation.
- Ingestion** : Can cause central nervous system (CNS) depression. May be fatal if swallowed and enters airways. Irritating to mouth, throat and stomach.

Over-exposure signs/symptoms

- Eye contact** : Adverse symptoms may include the following:
 pain or irritation
 watering
 redness

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SECTION 4: First aid measures

- Inhalation** : Adverse symptoms may include the following:
 nausea or vomiting
 headache
 drowsiness/fatigue
 dizziness/vertigo
 unconsciousness
 reduced foetal weight
 increase in foetal deaths
 skeletal malformations
- Skin contact** : Adverse symptoms may include the following:
 irritation
 redness
 reduced foetal weight
 increase in foetal deaths
 skeletal malformations
- Ingestion** : Adverse symptoms may include the following:
 reduced foetal weight
 increase in foetal deaths
 skeletal malformations

4.3 Indication of any immediate medical attention and special treatment needed

- Notes to physician** : Treat symptomatically. Contact poison treatment specialist immediately if large quantities have been ingested or inhaled.
- Specific treatments** : Symptomatic treatment and supportive therapy as indicated. Following severe exposure the patient should be kept under medical review for at least 48 hours.

SECTION 5: Firefighting measures

5.1 Extinguishing media

- Suitable extinguishing media** : Use dry chemical, CO₂, water spray (fog) or foam.
- Unsuitable extinguishing media** : Do not use water jet.

5.2 Special hazards arising from the substance or mixture

- Hazards from the substance or mixture** : Highly flammable liquid and vapour. In a fire or if heated, a pressure increase will occur and the container may burst, with the risk of a subsequent explosion. Runoff to sewer may create fire or explosion hazard. This material is toxic to aquatic life with long lasting effects. Fire water contaminated with this material must be contained and prevented from being discharged to any waterway, sewer or drain.
- Hazardous thermal decomposition products** : Decomposition products may include the following materials:
 carbon dioxide
 carbon monoxide

5.3 Advice for firefighters

- Special precautions for fire-fighters** : Promptly isolate the scene by removing all persons from the vicinity of the incident if there is a fire. No action shall be taken involving any personal risk or without suitable training. Move containers from fire area if this can be done without risk. Use water spray to keep fire-exposed containers cool.
- Special protective equipment for fire-fighters** : Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode. Clothing for fire-fighters (including helmets, protective boots and gloves) conforming to European standard EN 469 will provide a basic level of protection for chemical incidents.

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SECTION 6: Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures

- For non-emergency personnel** : No action shall be taken involving any personal risk or without suitable training. Evacuate surrounding areas. Keep unnecessary and unprotected personnel from entering. Do not touch or walk through spilt material. Shut off all ignition sources. No flares, smoking or flames in hazard area. Avoid breathing vapour or mist. Provide adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Put on appropriate personal protective equipment.
- For emergency responders** : If specialised clothing is required to deal with the spillage, take note of any information in Section 8 on suitable and unsuitable materials. See also the information in "For non-emergency personnel".

- 6.2 Environmental precautions** : Avoid dispersal of spilt material and runoff and contact with soil, waterways, drains and sewers. Inform the relevant authorities if the product has caused environmental pollution (sewers, waterways, soil or air). Water polluting material. May be harmful to the environment if released in large quantities. Collect spillage.

6.3 Methods and material for containment and cleaning up

- Small spill** : Stop leak if without risk. Move containers from spill area. Use spark-proof tools and explosion-proof equipment. Dilute with water and mop up if water-soluble. Alternatively, or if water-insoluble, absorb with an inert dry material and place in an appropriate waste disposal container. Dispose of via a licensed waste disposal contractor.
- Large spill** : Stop leak if without risk. Move containers from spill area. Use spark-proof tools and explosion-proof equipment. Approach the release from upwind. Prevent entry into sewers, water courses, basements or confined areas. Wash spillages into an effluent treatment plant or proceed as follows. Contain and collect spillage with non-combustible, absorbent material e.g. sand, earth, vermiculite or diatomaceous earth and place in container for disposal according to local regulations. Dispose of via a licensed waste disposal contractor. Contaminated absorbent material may pose the same hazard as the spilt product.

- 6.4 Reference to other sections** : See Section 1 for emergency contact information.
See Section 8 for information on appropriate personal protective equipment.
See Section 13 for additional waste treatment information.

SECTION 7: Handling and storage

The information in this section contains generic advice and guidance. The list of Identified Uses in Section 1 should be consulted for any available use-specific information provided in the Exposure Scenario(s).

7.1 Precautions for safe handling

- Protective measures** : Put on appropriate personal protective equipment (see Section 8). Avoid exposure - obtain special instructions before use. Avoid exposure during pregnancy. Do not handle until all safety precautions have been read and understood. Do not get in eyes or on skin or clothing. Do not swallow. Avoid breathing vapour or mist. Avoid release to the environment. Use only with adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Do not enter storage areas and confined spaces unless adequately ventilated. Keep in the original container or an approved alternative made from a compatible material, kept tightly closed when not in use. Store and use away from heat, sparks, open flame or any other ignition source. Use explosion-proof electrical (ventilating, lighting and material handling) equipment. Use only non-sparking tools. Take precautionary measures against electrostatic discharges. Empty containers retain product residue and can be hazardous. Do not reuse container.
- Advice on general occupational hygiene** : Eating, drinking and smoking should be prohibited in areas where this material is handled, stored and processed. Workers should wash hands and face before eating, drinking and smoking. Remove contaminated clothing and protective equipment before entering eating areas. See also Section 8 for additional information on hygiene measures.

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SECTION 7: Handling and storage

7.2 Conditions for safe storage, including any incompatibilities : Store between the following temperatures: 2 to 40°C (35.6 to 104°F). Store in accordance with local regulations. Store in a segregated and approved area. Store in original container protected from direct sunlight in a dry, cool and well-ventilated area, away from incompatible materials (see Section 10) and food and drink. Store locked up. Eliminate all ignition sources. Separate from oxidizing materials. Keep container tightly closed and sealed until ready for use. Containers that have been opened must be carefully resealed and kept upright to prevent leakage. Do not store in unlabelled containers. Use appropriate containment to avoid environmental contamination.

Storage hazard class : Storage class 3, Flammable liquids
Huntsman Advanced Materials

7.3 Specific end use(s)

Recommendations : Not available.

Industrial sector specific solutions : Not available.

SECTION 8: Exposure controls/personal protection

The information in this section contains generic advice and guidance. The list of Identified Uses in Section 1 should be consulted for any available use-specific information provided in the Exposure Scenario(s).

8.1 Control parameters

Occupational exposure limits

Product/ingredient name	Exposure limit values
n-hexane	EH40/2005 WELs (United Kingdom (UK), 12/2011). TWA: 72 mg/m ³ 8 hours. TWA: 20 ppm 8 hours.
cyclohexane	EH40/2005 WELs (United Kingdom (UK), 12/2011). STEL: 1050 mg/m ³ 15 minutes. STEL: 300 ppm 15 minutes. TWA: 100 ppm 8 hours. TWA: 350 mg/m ³ 8 hours.

Recommended monitoring procedures : If this product contains ingredients with exposure limits, personal, workplace atmosphere or biological monitoring may be required to determine the effectiveness of the ventilation or other control measures and/or the necessity to use respiratory protective equipment. Reference should be made to monitoring standards, such as the following: European Standard EN 689 (Workplace atmospheres - Guidance for the assessment of exposure by inhalation to chemical agents for comparison with limit values and measurement strategy) European Standard EN 14042 (Workplace atmospheres - Guide for the application and use of procedures for the assessment of exposure to chemical and biological agents) European Standard EN 482 (Workplace atmospheres - General requirements for the performance of procedures for the measurement of chemical agents) Reference to national guidance documents for methods for the determination of hazardous substances will also be required.

Derived effect levels

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SECTION 8: Exposure controls/personal protection

Product/ingredient name	Type	Exposure	Value	Population	Effects
Methylcyclohexane	DNEL	Long term Inhalation	64.3 mg/m ³	Workers	Systemic
	DNEL	Short term Inhalation	1354.6 mg/m ³	Workers	Systemic
	DNEL	Long term Dermal	1.7 mg/kg bw/day	Workers	Systemic
	DNEL	Long term Inhalation	16 mg/m ³	Consumers	Systemic
	DNEL	Short term Inhalation	1016 mg/m ³	Consumers	Systemic
	DNEL	Long term Dermal	0.8 mg/kg bw/day	Consumers	Systemic
	DNEL	Long term Oral	0.4 mg/kg bw/day	Consumers	Systemic

Predicted effect concentrations

Product/ingredient name	Type	Compartment Detail	Value	Method Detail
Methylcyclohexane	PNEC	Fresh water	3.26 µg/l	Assessment Factors
	PNEC	Marine	0.326 µg/l	Assessment Factors
	PNEC	PNECintermittent	32.6 µg/l	Assessment Factors
	PNEC	Fresh water sediment	0.088 mg/kg	Equilibrium Partitioning
	PNEC	Marine water sediment	0.0088 mg/kg	Equilibrium Partitioning
	PNEC	Sewage Treatment Plant	338 µg/l	Assessment Factors
	PNEC	Soil	0.0237 mg/kg	Equilibrium Partitioning

8.2 Exposure controls

Appropriate engineering controls : Use only with adequate ventilation. Use process enclosures, local exhaust ventilation or other engineering controls to keep worker exposure to airborne contaminants below any recommended or statutory limits. The engineering controls also need to keep gas, vapour or dust concentrations below any lower explosive limits. Use explosion-proof ventilation equipment.

Individual protection measures

Hygiene measures : Wash hands, forearms and face thoroughly after handling chemical products, before eating, smoking and using the lavatory and at the end of the working period. Appropriate techniques should be used to remove potentially contaminated clothing. Wash contaminated clothing before reusing. Ensure that eyewash stations and safety showers are close to the workstation location.

Eye/face protection : Safety eyewear complying with an approved standard should be used when a risk assessment indicates this is necessary to avoid exposure to liquid splashes, mists, gases or dusts. If contact is possible, the following protection should be worn, unless the assessment indicates a higher degree of protection: chemical splash goggles.

Skin protection

Hand protection : 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.

Material of gloves for long term application (BTT>480min): : Ethyl Vinyl Alcohol Laminate (EVAL), butyl rubber

Material of gloves for short term/splash application (10min <BTT<480min): : nitrile rubber

(BTT = Break Through Time)

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SECTION 8: Exposure controls/personal protection

Use gloves approved to relevant standards e.g. EN 374 (Europe), F739 (US). Suitability and durability of a glove is dependent on usage, e.g. frequency and duration of contact, chemical resistance of glove material and dexterity. Always seek advice from glove suppliers. Additional information can be found for instance at www.gisbau.de.

- Body protection** : Personal protective equipment for the body should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product. When there is a risk of ignition from static electricity, wear anti-static protective clothing. For the greatest protection from static discharges, clothing should include anti-static overalls, boots and gloves. Refer to European Standard EN 1149 for further information on material and design requirements and test methods.
- Other skin protection** : Appropriate footwear and any additional skin protection measures should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.
- Respiratory protection** : In case of inadequate ventilation wear respiratory protection. Respirator selection must be based on known or anticipated exposure levels, the hazards of the product and the safe working limits of the selected respirator.
- Environmental exposure controls** : Emissions from ventilation or work process equipment should be checked to ensure they comply with the requirements of environmental protection legislation. In some cases, fume scrubbers, filters or engineering modifications to the process equipment will be necessary to reduce emissions to acceptable levels.

SECTION 9: Physical and chemical properties

9.1 Information on basic physical and chemical properties

Appearance

- Physical state** : Liquid. [Emulsion.]
- Colour** : Not available.
- Odour** : of solvent
- Odour threshold** : Not available.
- pH** : Not available.
- Melting point/freezing point** : Not available.
- Initial boiling point and boiling range** : 84°C
- Flash point** : Closed cup: -9°C [PMCC]
- Evaporation rate** : Not available.
- Flammability (solid, gas)** : Not available.
- Burning time** : Not applicable.
- Burning rate** : Not applicable.
- Upper/lower flammability or explosive limits** : Lower: 0.8%
Upper: 6.5%
- Vapour pressure** : 7.5 kPa [room temperature]
- Vapour density** : Not available.
- Relative density** : Not available.
- Solubility(ies)**
- Water solubility** : practically insoluble

20 deg C

Partition coefficient: n-octanol/ water (LogK_{ow}) : Not available.

Auto-ignition temperature : 250°C

Decomposition temperature : Not available.

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SECTION 9: Physical and chemical properties

Viscosity : Dynamic: 5 mPa·s
 Kinematic: Not available.
 Kinematic (40°C): 10 mm²/s

Explosive properties : Not available.

Oxidising properties : Not available.

9.2 Other information

Density : 0.71 g/cm³ [20°C (68°F)]

SECTION 10: Stability and reactivity

10.1 Reactivity : No specific test data related to reactivity available for this product or its ingredients.

10.2 Chemical stability : The product is stable.

10.3 Possibility of hazardous reactions : Under normal conditions of storage and use, hazardous reactions will not occur.

10.4 Conditions to avoid : Avoid all possible sources of ignition (spark or flame). Do not pressurise, cut, weld, braze, solder, drill, grind or expose containers to heat or sources of ignition.

10.5 Incompatible materials : oxidizing materials and acids.
 strong bases

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

Decomposition products may include the following materials: Carbon oxides, Burning produces obnoxious and toxic fumes.

SECTION 11: Toxicological information

11.1 Information on toxicological effects

Acute toxicity

Product/ingredient name	Endpoint	Species	Result	Exposure
Methylcyclohexane	LC50 Inhalation Vapour	Dog	>16.3 mg/l	1 hours
	LC50 Inhalation Vapour	Rat	>26.3 mg/l	1 hours
	LD50 Dermal	Rabbit	>2300 mg/kg	-
	LD50 Oral	Rat - Male, Female	2250 to 4500 mg/kg	-
n-hexane	LC50 Inhalation Vapour	Rat	135 to 169 mg/l	4 hours
	LD50 Oral	Rat	25000 to 32400 mg/kg	-
cyclohexane	LD50 Dermal	Rabbit	>2000 mg/kg	-
	LD50 Oral	Rat	12705 mg/kg	-
	LD50 Oral	Rat	5500 to 6000 mg/kg	-

Conclusion/Summary : No additional information.

Acute toxicity estimates

Not available.

Irritation/Corrosion

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SECTION 11: Toxicological information

Product/ingredient name	Test	Species	Route of exposure	Result
Methylcyclohexane	No official guidelines OECD 405 Acute Eye Irritation/ Corrosion	Rabbit Rabbit	Skin Eyes	Irritant Non-irritant.

Conclusion/Summary

Skin : Methylcyclohexane Irritating to skin.
Eyes : Methylcyclohexane Non-irritating to the eyes.
Respiratory : No additional information.

Sensitiser

Product/ingredient name	Test	Route of exposure	Species	Result
Methylcyclohexane	OECD 406 Skin Sensitization	skin	Guinea pig	Not sensitizing

Conclusion/Summary

Skin : No additional information.
Respiratory : No additional information.

Mutagenicity

Product/ingredient name	Test	Result
Methylcyclohexane	OECD 471 Bacterial Reverse Mutation Test	Negative
	OECD 476 In vitro Mammalian Cell Gene Mutation Test	Negative
	OECD 473 In vitro Mammalian Chromosomal Aberration Test	Negative
n-hexane	-	Negative

Conclusion/Summary : Methylcyclohexane Not mutagenic in a standard battery of genetic toxicological tests.

Carcinogenicity

Conclusion/Summary : No additional information.

Reproductive toxicity

Product/ingredient name	Test	Species	Result/Result type	Target organs
Methylcyclohexane	OECD 422 Combined Repeated Dose Toxicity Study with the Reproduction/Developmental Toxicity Screening Test	Rat	Oral: 250 mg/kg NOAEL	-
	OECD 416 Two-Generation Reproduction Toxicity Study	Rat	Inhalation: 2010 mg/m ³ NOAEL	-
n-hexane	-	Rat	Inhalation	-

Conclusion/Summary : No additional information.

Teratogenicity

Product/ingredient name	Test	Species	Result/Result type
Methylcyclohexane	OECD 414 Prenatal Developmental Toxicity Study	Rabbit	28100 mg/m ³ NOAEL
	OECD 414 Prenatal Developmental Toxicity Study	Rat	24080 mg/m ³ NOAEL

Conclusion/Summary : No additional information.

Specific target organ toxicity (single exposure)

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Product/ingredient name	Category	Route of exposure	Target organs
Naphtha (petroleum), hydrotreated light	Category 3	Not applicable.	Narcotic effects
Methylcyclohexane	Category 3	Not applicable.	Narcotic effects
octane	Category 3	Not applicable.	Narcotic effects
n-hexane	Category 3	Not applicable.	Narcotic effects
cyclohexane	Category 3	Not applicable.	Narcotic effects

Specific target organ toxicity (repeated exposure)

Product/ingredient name	Category	Route of exposure	Target organs
n-hexane	Category 2	Inhalation	central nervous system (CNS), muscle tissue, peripheral nervous system and testes

Aspiration hazard

Product/ingredient name	Result
naphtha (petroleum), hydrogen treated, light, contains <0.1% benzene	ASPIRATION HAZARD - Category 1
Methylcyclohexane	ASPIRATION HAZARD - Category 1
octane	ASPIRATION HAZARD - Category 1
n-hexane	ASPIRATION HAZARD - Category 1
cyclohexane	ASPIRATION HAZARD - Category 1

Information on the likely routes of exposure : Not available.

Potential acute health effects

- Inhalation** : Can cause central nervous system (CNS) depression. May cause drowsiness or dizziness.
- Ingestion** : Can cause central nervous system (CNS) depression. May be fatal if swallowed and enters airways. Irritating to mouth, throat and stomach.
- Skin contact** : Causes skin irritation.
- Eye contact** : Causes serious eye irritation.

Symptoms related to the physical, chemical and toxicological characteristics

- Inhalation** : Adverse symptoms may include the following:
 nausea or vomiting
 headache
 drowsiness/fatigue
 dizziness/vertigo
 unconsciousness
 reduced foetal weight
 increase in foetal deaths
 skeletal malformations
- Ingestion** : Adverse symptoms may include the following:
 reduced foetal weight
 increase in foetal deaths
 skeletal malformations
- Skin contact** : Adverse symptoms may include the following:
 irritation
 redness
 reduced foetal weight
 increase in foetal deaths
 skeletal malformations

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SECTION 11: Toxicological information

Eye contact : Adverse symptoms may include the following:
 pain or irritation
 watering
 redness

Delayed and immediate effects and also chronic effects from short and long term exposure

Short term exposure

Potential immediate effects : Not available.

Potential delayed effects : Not available.

Long term exposure

Potential immediate effects : Not available.

Potential delayed effects : Not available.

Potential chronic health effects

Product/ingredient name	Test	Result type	Result	Target organs
Methylcyclohexane	OECD 422 Combined Repeated Dose Toxicity Study with the Reproduction/ Developmental Toxicity Screening Test	NOAEL -	250 mg/kg/d	-
	No official guidelines	NOEC Vapour	1600 mg/m ³	-

Conclusion/Summary : No additional information.
General : No known significant effects or critical hazards.
Carcinogenicity : No known significant effects or critical hazards.
Mutagenicity : No known significant effects or critical hazards.
Teratogenicity : No known significant effects or critical hazards.
Developmental effects : No known significant effects or critical hazards.
Fertility effects : Suspected of damaging fertility.
Other information : Not available.

SECTION 12: Ecological information

12.1 Toxicity

Product/ingredient name	Test	Endpoint	Exposure	Species	Result
Methylcyclohexane	No official guidelines	Acute EC50	15 hours Static	Bacteria	33.8 mg/l
	No official guidelines	Acute EC50	48 hours Semi-static	Daphnia	0.326 mg/l
	No official guidelines	Acute ErC50 (growth rate)	72 hours Static	Algae	0.134 mg/l
	No official guidelines	Acute LC50	96 hours Static	Daphnia	3.3 mg/l
	No official guidelines	Acute LC50	96 hours Semi-static	Fish	2.07 mg/l
	OECD 203 Fish, Acute Toxicity Test	Acute LC50	96 hours	Fish	5.8 mg/l

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n-hexane cyclohexane	No official guidelines	Chronic NOECr	Static 72 hours	Algae	0.0221	mg/l
	-	Acute EC50	48 hours	Daphnia	3.88	mg/l
	Unknown guidelines Not known	Acute EC50	24 hours	Daphnia	>400	mg/l
	-	Acute EC50	48 hours	Daphnia	3.78	mg/l
	-	Acute IC50	72 hours	Algae	>500	mg/l
	-	Acute IC50	15 hours	Bacteria	24	mg/l
	Unknown guidelines Not known	Acute LC0	96 hours	Fish	32	mg/l
	-	Acute LC50	96 hours	Fish	93 to 117	mg/l

Conclusion/Summary : No additional information.

12.2 Persistence and degradability

Product/ingredient name	Test	Period	Result
Methylcyclohexane cyclohexane	No official guidelines -	28 days 28 days	- % <60 %

Conclusion/Summary : Methylcyclohexane Readily biodegradable
 cyclohexane Readily biodegradable

Product/ingredient name	Aquatic half-life	Photolysis	Biodegradability
Methylcyclohexane cyclohexane	- -	50%; 1.58 day(s) -	Inherent Not readily

12.3 Bioaccumulative potential

Product/ingredient name	LogP _{ow}	BCF	Potential
Methylcyclohexane	3.88	95 to 321	low
n-hexane	3.9 to 4.11	-	high
cyclohexane	3.44	89	low

12.4 Mobility in soil

Soil/water partition coefficient (K_{oc}) : Not available.

Mobility : Not available.

12.5 Results of PBT and vPvB assessment

Not applicable.

12.6 Other adverse effects : No known significant effects or critical hazards.

12.7 Other ecological information

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SECTION 13: Disposal considerations

The information in this section contains generic advice and guidance. The list of Identified Uses in Section 1 should be consulted for any available use-specific information provided in the Exposure Scenario(s).

13.1 Waste treatment methods

Product

Methods of disposal : The generation of waste should be avoided or minimised wherever possible. Disposal of this product, solutions and any by-products should at all times comply with the requirements of environmental protection and waste disposal legislation and any regional local authority requirements. Dispose of surplus and non-recyclable products via a licensed waste disposal contractor. Waste should not be disposed of untreated to the sewer unless fully compliant with the requirements of all authorities with jurisdiction.

Hazardous waste : Yes.

European waste catalogue (EWC)

Waste code	Waste designation
07 02 04*	other organic solvents, washing liquids and mother liquors

Packaging

Methods of disposal : The generation of waste should be avoided or minimised wherever possible. Waste packaging should be recycled. Incineration or landfill should only be considered when recycling is not feasible.

Special precautions : This material and its container must be disposed of in a safe way. Care should be taken when handling emptied containers that have not been cleaned or rinsed out. Empty containers or liners may retain some product residues. Vapor from product residues may create a highly flammable or explosive atmosphere inside the container. Do not cut, weld or grind used containers unless they have been cleaned thoroughly internally. Avoid dispersal of spilt material and runoff and contact with soil, waterways, drains and sewers.

SECTION 14: Transport information

	14.1 UN number	14.2 UN proper shipping name
ADR/RID	UN1993	Flammable liquid, n.o.s. (Naphta, hydrotreated light and hexane, mixture of isomers (max. 5% n-hexane))
IMDG	UN1993	Flammable liquid, n.o.s. (Naphta, hydrotreated light and hexane, mixture of isomers (max. 5% n-hexane)). Marine pollutant
IATA	UN1993	Flammable liquid, n.o.s. (Naphta, hydrotreated light and hexane, mixture of isomers (max. 5% n-hexane))

	14.3 Transport hazard class(es)	14.4 Packing group	14.5 Environmental hazards	14.6 Special precautions for user	Additional information

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SECTION 14: Transport information

<p>ADR/RID</p>	<p>3</p>	 	<p>II</p>	<p>Yes.</p>	<p>Transport within user's premises: always transport in closed containers that are upright and secure. Ensure that persons transporting the product know what to do in the event of an accident or spillage.</p>	<p>The environmentally hazardous substance mark is not required when transported in sizes of ≤5 L or ≤5 kg.</p> <p><u>Hazard identification number</u> 33</p> <p><u>Special provisions</u> 601 274 640D</p> <p><u>Tunnel code</u> D/E</p>
<p>IMDG</p>	<p>3</p>	 	<p>II</p>	<p>Yes.</p>	<p>Transport within user's premises: always transport in closed containers that are upright and secure. Ensure that persons transporting the product know what to do in the event of an accident or spillage.</p>	<p>The marine pollutant mark is not required when transported in sizes of ≤5 L or ≤5 kg.</p> <p><u>Emergency schedules (EmS)</u> F-E _S-E_</p>
<p>IATA</p>	<p>3</p>		<p>II</p>	<p>No.</p>	<p>Transport within user's premises: always transport in closed containers that are upright and secure. Ensure that persons transporting the product know what to do in the event of an accident or spillage.</p>	<p>The environmentally hazardous substance mark may appear if required by other transportation regulations.</p> <p><u>Passenger and Cargo Aircraft</u> Quantity limitation: 5 L Packaging instructions: 353</p> <p><u>Cargo Aircraft Only</u> Quantity limitation: 60 L Packaging instructions: 364</p>

14.7 Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code : Not applicable.

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SECTION 15: Regulatory information

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

EU Regulation (EC) No. 1907/2006 (REACH)

This product is compliant with the REACH Regulation EC 1907/2006. Huntsman has pre-registered and is registering all of the substances that it manufactures in or imports into the European Economic Area (EEA) that are subject to Title II of the REACH Regulation.

Annex XIV - List of substances subject to authorisation

Annex XIV

None of the components are listed.

Substances of very high concern

None of the components are listed.

Annex XVII - Restrictions on the manufacture, placing on the market and use of certain dangerous substances, mixtures and articles : Not applicable.

Other EU regulations

Europe inventory : All components are listed or exempted.
Black List Chemicals : Not listed
Priority List Chemicals : Not listed
Integrated pollution prevention and control list (IPPC) - Air : Not listed
Integrated pollution prevention and control list (IPPC) - Water : Not listed

Product/ingredient name	Carcinogenic effects	Mutagenic effects	Developmental effects	Fertility effects
n-hexane	-	-	-	Repr. 2, H361f (Fertility)

National regulations

References : The provision of Safety Data Sheets comes under Regulation 6 of CHIP (CHIP is the recognised abbreviation for the Chemicals Hazard Information and Packaging Regulations). This is an addition to the Health and Safety at Work Act 1974.

Australia inventory (AICS) : All components are listed or exempted.
Canada inventory : All components are listed or exempted.
China inventory (IECSC) : All components are listed or exempted.
Japan inventory : All components are listed or exempted.
Korea inventory (KECI) : All components are listed or exempted.
New Zealand Inventory of Chemicals (NZIoC) : All components are listed or exempted.
Philippines inventory (PICCS) : All components are listed or exempted.
United States inventory (TSCA 8b) : All components are listed or exempted.
Chemical Weapons Convention List Schedule I Chemicals : Not listed

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SECTION 15: Regulatory information

Chemical Weapons : Not listed
 Convention List Schedule II
 Chemicals

Chemical Weapons : Not listed
 Convention List Schedule III
 Chemicals

15.2 Chemical Safety Assessment : This product contains substances for which Chemical Safety Assessments are still required.

SECTION 16: Other information

✔ Indicates information that has changed from previously issued version.

Abbreviations and acronyms : ATE = Acute Toxicity Estimate
 CLP = Classification, Labelling and Packaging Regulation [Regulation (EC) No. 1272/2008]
 DNEL = Derived No Effect Level
 EUH statement = CLP-specific Hazard statement
 PNEC = Predicted No Effect Concentration
 RRN = REACH Registration Number

Procedure used to derive the classification according to Regulation (EC) No. 1272/2008 [CLP/GHS]

Classification	Justification
Flam. Liq. 2, H225	On basis of test data
Skin Irrit. 2, H315	Calculation method
Repr. 2, H361f (Fertility)	Calculation method
STOT SE 3, H336 (Narcotic effects)	Calculation method
Aquatic Chronic 2, H411	Calculation method

Full text of abbreviated 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. (Narcotic effects)
 (Narcotic effects)
 H361f Suspected of damaging fertility.
 (Fertility)
 H373 May cause damage to organs through prolonged or repeated exposure if inhaled. (central nervous system (CNS), muscle tissue, peripheral nervous system and testes)
 (central nervous system (CNS), muscle tissue, peripheral nervous system and testes)
 (inhalation)
 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 classifications [CLP/GHS] : Aquatic Acute 1, H400 ACUTE AQUATIC HAZARD - Category 1
 Aquatic Chronic 1, H410 LONG-TERM AQUATIC HAZARD - Category 1
 Aquatic Chronic 2, H411 LONG-TERM AQUATIC HAZARD - Category 2
 Asp. Tox. 1, H304 ASPIRATION HAZARD - Category 1
 Flam. Liq. 2, H225 FLAMMABLE LIQUIDS - Category 2
 Repr. 2, H361f (Fertility) TOXIC TO REPRODUCTION (Fertility) - Category 2
 Skin Irrit. 2, H315 SKIN CORROSION/IRRITATION - Category 2

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SECTION 16: Other information

STOT RE 2, H373 (central nervous system (CNS), muscle tissue, peripheral nervous system and testes) (inhalation)
 SPECIFIC TARGET ORGAN TOXICITY (REPEATED EXPOSURE) (central nervous system (CNS), muscle tissue, peripheral nervous system and testes) (inhalation) - Category 2

STOT SE 3, H336 (Narcotic effects)
 SPECIFIC TARGET ORGAN TOXICITY (SINGLE EXPOSURE) (Narcotic effects) - Category 3

Full text of abbreviated R phrases : R11- Highly flammable.
 R62- Possible risk of impaired fertility.
 R48/20- Harmful: danger of serious damage to health by prolonged exposure through inhalation.
 R65- Harmful: may cause lung damage if swallowed.
 R38- Irritating to skin.
 R67- Vapours may cause drowsiness and dizziness.
 R50/53- Very toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.
 R51/53- Toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

Full text of classifications [DSD/DPD] : F - Highly flammable
 Repr. Cat. 3 - Toxic to reproduction category 3
 Xn - Harmful
 Xi - Irritant
 N - Dangerous for the environment

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