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Revision Number 1

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

1.1. Product identifier

Product Name N.4

Synonyms None

Pure substance/mixture Mixture

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

Recommended use Viscometer and/or density measurement equipment calibration and performance verification reference standard

Uses advised against None known

1.3. Details of the supplier of the safety data sheet

Supplier

Cannon Instrument Company
2139 High Tech Rd.
State College, PA 16803-1733
T: (814) 353-8000 or (800) 676-6232

For further information, please contact

E-mail address sales@cannoninstrument.com

1.4. Emergency telephone number

Emergency telephone +1 (800) 255-3924 Domestic CHEM-TEL Inc.
+1 (813) 248-0585 Overseas CHEM-TEL Inc. (Please Call Collect)

Emergency telephone - \$45 - (EC)1272/2008

Europe |112

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

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

Flammable liquids	Category 2 - (H225)
Skin irritation	Category 2 - (H315)
Reproductive toxicity	Category 2 - (H361f)
Specific target organ toxicity (single exposure)	Category 3 - (H336)
Category 3 Narcotic effects	
Specific target organ toxicity (repeated exposure)	Category 2 - (H373)
Aspiration hazard	Category 1 - (H304)
Chronic aquatic toxicity	Category 2 - (H411)

2.2. Label elements

Contains Hexane; Cyclohexane



Signal word
Danger

Hazard statements

H304 - May be fatal if swallowed and enters airways.
 H315 - Causes skin irritation.
 H336 - May cause drowsiness or dizziness.
 H361f - Suspected of damaging fertility.
 H373 - May cause damage to organs through prolonged or repeated exposure.
 H411 - Toxic to aquatic life with long lasting effects.
 H225 - Highly flammable liquid and vapour.

Precautionary Statements - EU (§28, 1272/2008)

P210 - Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.
 P260 - Do not breathe vapor or mist.
 P273 - Avoid release to the environment.
 P280 - Wear protective gloves/protective clothing/eye protection/face protection.
 P301 + P310 - IF SWALLOWED: Immediately call a POISON CENTER or doctor.
 P331 - Do NOT induce vomiting.
 P370 + P378 - In case of fire: Use CO₂, dry chemical, or foam to extinguish.
 P391 - Collect spillage.

Unknown acute toxicity

51.88 % of the mixture consists of ingredient(s) of unknown acute dermal toxicity.

Additional information

This product requires child resistant fastenings if supplied to the general public. This product requires tactile warnings if supplied to the general public.

2.3. Other hazards

Other hazards May be harmful in contact with skin. Harmful to aquatic life.
PBT & vPvB None known
Endocrine Disruptor Information This product does not contain any known or suspected endocrine disruptors.

SECTION 3: Composition/information on ingredients

3.1 Substances

Not applicable

3.2 Mixtures

Chemical name	Weight-%	REACH registration number	EC No (EU Index No)	Classification according to Regulation (EC) No. 1272/2008 [CLP]	Specific concentration limit (SCL)	M-Factor	M-Factor (long-term)	Notes
Hexane 110-54-3	30 - 60	No data available	203-777-6 (601-037-00-0)	Flam. Liq. 2 (H225) Asp. Tox. 1 (H304)	STOT RE 2 :: C>=5%	-	-	-

				Skin Irrit. 2 (H315) STOT SE 3 (H336) Repr. 2 (H361f) STOT RE 2 (H373) Aquatic Chronic 2 (H411)				
Methylcyclopentane 96-37-7	10 - 30	No data available	202-503-2	[C]	-	-	-	-
Naphtha, petroleum, hydrotreated light 64742-49-0	10 - 30	No data available	265-151-9 (649-328-00-1)	Asp. Tox. 1 (H304) Muta. 1B (H340) (*P) Carc. 1B (H350) (*P)	-	-	-	P
Cyclohexane 110-82-7	1 - 5	No data available	203-806-2 (601-017-00-1)	Flam. Liq. 2 (H225) Asp. Tox. 1 (H304) Skin Irrit. 2 (H315) STOT SE 3 (H336) Aquatic Acute 1 (H400) Aquatic Chronic 1 (H410)	-	-	-	-

Additional information

Note P (*P): The classification as a carcinogen or mutagen need not apply if it can be shown that the substance contains less than 0.1 % w/w benzene (EINECS No 200-753-7). This note applies only to certain complex coal- and oil-derived substances in Part 3

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

[C] - Components with occupational exposure limits and/or biological occupational exposure limits requiring monitoring

Note P - The harmonized classification as a carcinogen or mutagen applies unless it can be shown that the substance contains less than 0.1 % w/w benzene (Einecs No 200-753-7), in which case a classification in accordance with Title II of this Regulation shall be performed also for those hazard classes. Where the substance is not classified as a carcinogen or mutagen, at least the precautionary statements (P102)-P260-P262-P301 + P310-P331 shall apply.

Full text of H- and EUH-phrases: see section 16Acute Toxicity Estimate

If LD50/LC50 data is not available or does not correspond to the classification category, then the appropriate conversion value from CLP Annex I, Table 3.1.2, is used to calculate the acute toxicity estimate (ATEmix) for classifying a mixture based on its components

Chemical name	Oral LD50 mg/kg	Dermal LD50 mg/kg	Inhalation LC50 - 4 hour - dust/mist - mg/L	Inhalation LC50 - 4 hour - vapour - mg/L	Inhalation LC50 - 4 hour - gas - ppm
Hexane 110-54-3	25000	3000	No data available	169.1681	No data available
Naphtha, petroleum, hydrotreated light 64742-49-0	5000	3160	No data available	No data available	No data available
Cyclohexane 110-82-7	12705	2000	32.88	No data available	No data available

This product does not contain candidate substances of very high concern at a concentration $\geq 0.1\%$ (Regulation (EC) No. 1907/2006 (REACH), Article 59)

SECTION 4: First aid measures**4.1. Description of first aid measures**

General advice	Show this safety data sheet to the doctor in attendance. Immediate medical attention is required.
Inhalation	Remove to fresh air. Aspiration into lungs can produce severe lung damage. If breathing has stopped, give artificial respiration. Get medical attention immediately. Avoid direct contact with skin. Use barrier to give mouth-to-mouth resuscitation. If breathing is difficult, (trained personnel should) give oxygen. Delayed pulmonary edema may occur.
Eye contact	Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. Keep eye wide open while rinsing. Do not rub affected area.
Skin contact	Wash off immediately with soap and plenty of water while removing all contaminated clothes and shoes. Get medical attention if irritation develops and persists.
Ingestion	Do NOT induce vomiting. Rinse mouth. Never give anything by mouth to an unconscious person. ASPIRATION HAZARD IF SWALLOWED - CAN ENTER LUNGS AND CAUSE DAMAGE. If vomiting occurs spontaneously, keep head below hips to prevent aspiration. Get immediate medical attention.
Self-protection of the first aider	Remove all sources of ignition. Ensure that medical personnel are aware of the material(s) involved, take precautions to protect themselves and prevent spread of contamination. Use personal protective equipment as required. See section 8 for more information. Avoid direct contact with skin. Use barrier to give mouth-to-mouth resuscitation. Avoid contact with skin, eyes or clothing.

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

Symptoms	Difficulty in breathing. Coughing and/ or wheezing. Dizziness. Inhalation of high vapour concentrations may cause symptoms like headache, dizziness, tiredness, nausea and vomiting.
Effects of Exposure	May cause adverse reproductive effects - such as birth defect, miscarriages, or infertility. May cause damage to organs through prolonged or repeated exposure. See Section 11 for additional Toxicological Information.

4.3. Indication of any immediate medical attention and special treatment needed

Note to doctors	Because of the danger of aspiration, emesis or gastric lavage should not be used unless the risk is justified by the presence of additional toxic substances.
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SECTION 5: Firefighting measures

5.1. Extinguishing media

Suitable Extinguishing Media	Foam, Dry chemical or CO ₂ .
Unsuitable extinguishing media	None known based on information supplied.

5.2. Special hazards arising from the substance or mixture

Specific hazards arising from the chemical	Risk of ignition. Keep product and empty container away from heat and sources of ignition. In the event of fire, cool tanks with water spray. Fire residues and contaminated fire extinguishing water must be disposed of in accordance with local regulations.
Hazardous combustion products	Carbon monoxide. Carbon dioxide (CO ₂).

5.3. Advice for firefighters

Special protective equipment and precautions for fire-fighters	Firefighters should wear self-contained breathing apparatus and full firefighting turnout gear. Use personal protection equipment.
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SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

Personal precautions	Evacuate personnel to safe areas. Use personal protective equipment as required. See section 8 for more information. Avoid contact with skin, eyes or clothing. Ensure adequate ventilation. Keep people away from and upwind of spill/leak. ELIMINATE all ignition sources (no smoking, flares, sparks or flames in immediate area). Pay attention to flashback. Take precautionary measures against static discharges. All equipment used when handling the product must be grounded. Do not touch or walk through spilled material. Do not breathe vapour or mist.
Other information	Ventilate the area. Refer to protective measures listed in Sections 7 and 8.
For emergency responders	Use personal protection recommended in Section 8.

6.2. Environmental precautions

Environmental precautions	Prevent further leakage or spillage if safe to do so. Prevent product from entering drains. Local authorities should be advised if significant spillages cannot be contained. Do not allow material to contaminate ground water system.
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6.3. Methods and material for containment and cleaning up

Methods for containment	Stop leak if you can do it without risk. Do not touch or walk through spilled material. A vapour suppressing foam may be used to reduce vapours. Dyke far ahead of spill to collect run-off water. Keep out of drains, sewers, ditches and waterways. Absorb with earth, sand or other non-combustible material and transfer to containers for later disposal.
Methods for cleaning up	Take precautionary measures against static discharges. Dam up. Soak up with inert absorbent material. Pick up and transfer to properly labelled containers.
Prevention of secondary hazards	Clean contaminated objects and areas thoroughly observing environmental regulations.

6.4. Reference to other sections

Reference to other sections	See section 8 for more information See section 13 for more information
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SECTION 7: Handling and storage

7.1. Precautions for safe handling

Advice on safe handling	Use personal protection equipment. Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. Use grounding and bonding connection when transferring this material to prevent static discharge, fire or explosion. Use with local exhaust ventilation. Use spark-proof tools and explosion-proof equipment. Keep in an area equipped with sprinklers. Use according to package label instructions. Handle in accordance with good industrial hygiene and safety practice. Avoid contact with skin, eyes or clothing. Do not eat, drink or smoke when using this product. Remove contaminated clothing and shoes. Take off contaminated clothing and wash it before reuse. In case of insufficient ventilation, wear suitable respiratory equipment. Do not breathe vapour or mist.
General hygiene considerations	Do not eat, drink or smoke when using this product. Contaminated work clothing should not be allowed out of the workplace. Regular cleaning of equipment, work area and clothing is recommended. Wash hands before breaks and immediately after handling the product. Wear suitable gloves and eye/face protection.

7.2. Conditions for safe storage, including any incompatibilities

Storage Conditions

Keep containers tightly closed in a dry, cool and well-ventilated place. Keep away from heat, sparks, flame and other sources of ignition (i.e., pilot lights, electric motors and static electricity). Keep in properly labelled containers. Do not store near combustible materials. Keep in an area equipped with sprinklers. Store in accordance with the particular national regulations. Store in accordance with local regulations. Store locked up. Keep out of the reach of children. Store away from other materials.

Storage class (TRGS 510)

LGK 3.

7.3. Specific end use(s)**Specific use(s)**

The identified uses for this product are detailed in Section 1.2.

SECTION 8: Exposure controls/personal protection**8.1. Control parameters****Exposure Limits**

Chemical name	European Union	Austria	Belgium	Bulgaria	Croatia
Hexane 110-54-3	TWA: 20 ppm TWA: 72 mg/m ³	TWA: 20 ppm TWA: 72 mg/m ³ STEL 80 ppm STEL 288 mg/m ³	TWA: 20 ppm TWA: 72 mg/m ³	TWA: 20 ppm TWA: 72.0 mg/m ³	TWA: 20 ppm TWA: 72 mg/m ³ Sk*
Cyclohexane 110-82-7	TWA: 200 ppm TWA: 700 mg/m ³	TWA: 200 ppm TWA: 700 mg/m ³ STEL 800 ppm STEL 2800 mg/m ³	TWA: 100 ppm TWA: 350 mg/m ³	TWA: 200 ppm TWA: 700.0 mg/m ³	TWA: 200 ppm TWA: 700 mg/m ³ Sk*
Chemical name	Cyprus	Czech Republic	Denmark	Estonia	Finland
Hexane 110-54-3	TWA: 20 ppm TWA: 72 mg/m ³	TWA: 70 mg/m ³ Sk* Ceiling: 200 mg/m ³	TWA: 20 ppm TWA: 72 mg/m ³ STEL: 40 ppm STEL: 144 mg/m ³	TWA: 20 ppm TWA: 72 mg/m ³	TWA: 20 ppm TWA: 72 mg/m ³ Sk*
Cyclohexane 110-82-7	TWA: 200 ppm TWA: 700 mg/m ³	TWA: 700 mg/m ³ Ceiling: 2000 mg/m ³	TWA: 50 ppm TWA: 172 mg/m ³ STEL: 100 ppm STEL: 344 mg/m ³	TWA: 200 ppm TWA: 700 mg/m ³	TWA: 100 ppm TWA: 350 mg/m ³ STEL: 250 ppm STEL: 875 mg/m ³
Chemical name	France	Germany TRGS	Germany DFG	Greece	Hungary
Hexane 110-54-3	TWA: 20 ppm TWA: 72 mg/m ³ STEL: 1500 mg/m ³	TWA: 50 ppm TWA: 180 mg/m ³	TWA: 50 ppm TWA: 180 mg/m ³ Peak: 400 ppm Peak: 1440 mg/m ³	TWA: 20 ppm TWA: 72 mg/m ³	TWA: 72 mg/m ³ TWA: 20 ppm Sk*
Methylcyclopentane 96-37-7	TWA: 1000 mg/m ³ STEL: 1500 mg/m ³	TWA: 500 ppm TWA: 1800 mg/m ³	TWA: 500 ppm TWA: 1800 mg/m ³ Peak: 1000 ppm Peak: 3600 mg/m ³	-	-
Cyclohexane 110-82-7	TWA: 200 ppm TWA: 700 mg/m ³ STEL: 375 ppm STEL: 1300 mg/m ³	TWA: 200 ppm TWA: 700 mg/m ³	TWA: 200 ppm TWA: 700 mg/m ³ Peak: 800 ppm Peak: 2800 mg/m ³	TWA: 200 ppm TWA: 700 mg/m ³	TWA: 200 ppm TWA: 700 mg/m ³
Chemical name	Ireland	Italy MDLPS	Italy AIDII	Latvia	Lithuania
Hexane 110-54-3	TWA: 20 ppm TWA: 72 mg/m ³ STEL: 60 ppm STEL: 216 mg/m ³ Sk*	TWA: 20 ppm TWA: 72 mg/m ³	TWA: 50 ppm TWA: 176 mg/m ³ Sk*	TWA: 20 ppm TWA: 72 mg/m ³ STEL: 300 mg/m ³	TWA: 20 ppm TWA: 72 mg/m ³
Cyclohexane 110-82-7	TWA: 200 ppm TWA: 700 mg/m ³ STEL: 600 ppm	TWA: 100 ppm TWA: 350 mg/m ³	TWA: 100 ppm TWA: 344 mg/m ³	TWA: 23 ppm TWA: 80 mg/m ³	TWA: 200 ppm TWA: 700 mg/m ³

	STEL: 2100 mg/m ³				
Chemical name	Luxembourg	Malta	Netherlands	Norway	Poland
Hexane 110-54-3	TWA: 20 ppm TWA: 72 mg/m ³	TWA: 20 ppm TWA: 72 mg/m ³	TWA: 20 ppm TWA: 72 mg/m ³ STEL: 40 ppm STEL: 144 mg/m ³	TWA: 20 ppm TWA: 72 mg/m ³ STEL: 30 ppm STEL: 108 mg/m ³	TWA: 72 mg/m ³ Sk*
Naphtha, petroleum, hydrotreated light 64742-49-0	-	-	-	-	TWA: 500 mg/m ³ STEL: 1500 mg/m ³
Cyclohexane 110-82-7	TWA: 200 ppm TWA: 700 mg/m ³	TWA: 200 ppm TWA: 700 mg/m ³	TWA: 200 ppm TWA: 700 mg/m ³ STEL: 400 ppm STEL: 1400 mg/m ³	TWA: 150 ppm TWA: 525 mg/m ³ STEL: 187.5 ppm STEL: 656.25 mg/m ³	TWA: 300 mg/m ³ STEL: 1000 mg/m ³ Sk*
Chemical name	Portugal	Romania	Slovakia	Slovenia	Spain
Hexane 110-54-3	TWA: 20 ppm TWA: 72 mg/m ³ Sk*	TWA: 20 ppm TWA: 72 mg/m ³ STEL: 1000 mg/m ³	TWA: 20 mg/m ³ TWA: 72 mg/m ³ Ceiling: 140 mg/m ³	TWA: 20 ppm TWA: 72 mg/m ³ STEL: 576 mg/m ³ STEL: 160 ppm	TWA: 20 ppm TWA: 72 mg/m ³
Methylcyclopentane 96-37-7	-	-	-	TWA: 1800 mg/m ³ TWA: 500 ppm STEL: 1000 ppm STEL: 3600 mg/m ³	-
Cyclohexane 110-82-7	TWA: 200 ppm TWA: 700 mg/m ³	TWA: 200 ppm TWA: 700 mg/m ³	TWA: 200 ppm TWA: 700 mg/m ³	TWA: 200 ppm TWA: 700 mg/m ³ STEL: 2800 mg/m ³ STEL: 800 ppm	TWA: 200 ppm TWA: 700 mg/m ³
Chemical name	Sweden		Switzerland	United Kingdom	
Hexane 110-54-3	NGV: 20 ppm NGV: 72 mg/m ³ Bindande KGV: 50 ppm Bindande KGV: 180 mg/m ³		TWA: 50 ppm TWA: 180 mg/m ³ STEL: 400 ppm STEL: 1440 mg/m ³ Sk*	TWA: 20 ppm TWA: 72 mg/m ³ STEL: 60 ppm STEL: 216 mg/m ³	
Cyclohexane 110-82-7	NGV: 200 ppm NGV: 700 mg/m ³		TWA: 200 ppm TWA: 700 mg/m ³ STEL: 800 ppm STEL: 2800 mg/m ³	TWA: 100 ppm TWA: 350 mg/m ³ STEL: 300 ppm STEL: 1050 mg/m ³	

Biological occupational exposure limits

Chemical name	European Union	Austria	Bulgaria	Croatia	Czech Republic
Hexane 110-54-3	-	-	-	150 µg/L - blood (n-Hexane) - during exposure 40 ppm - final exhaled air (n-Hexane) - during exposure 0.20 mg/g Creatinine - urine (2-Hexanol) - at the end of the work shift 5.30 mg/g Creatinine - urine (2,5-Hexanedione) - at the end of the work shift	-
Cyclohexane 110-82-7	-	-	-	150 mg/g Creatinine - urine (1,2-Cyclohexanedi	-

				ol) - at the end of the work shift; at chronic exposure after several successive shifts 450 µg/L - blood (Cyclohexanol) - during exposure 3.20 mg/g Creatinine - urine (Cyclohexanol) - during the second half of the work shift	
Chemical name	Denmark	Finland	France	Germany DFG	Germany TRGS
Hexane 110-54-3	-	-	- urine () - end of shift	5 mg/L (urine - 2,5-Hexandione plus 4,5-Dihydroxy-2-hexanone (after hydrolysis) end of shift) 5 mg/L - BAT (end of exposure or end of shift) urine 5 mg/L - BAT (for long-term exposures: at the end of the shift after several shifts) urine	5 mg/L (urine - 2,5-Hexandione plus 4,5-Dihydroxy-2-hexanone (after hydrolysis) end of shift)
Cyclohexane 110-82-7	-	-	-	150 mg/g Creatinine (urine - total 1,2-Cyclohexanediol (after hydrolysis) end of shift) 150 mg/g Creatinine (urine - total 1,2-Cyclohexanediol (after hydrolysis) for long-term exposures: at the end of the shift after several shifts) 150 mg/g Creatinine - BAT (for long-term exposures: at the end of the shift after several shifts) urine	150 mg/g Creatinine (urine - total 1,2-Cyclohexanediol (after hydrolysis) end of shift) 150 mg/g Creatinine (urine - total 1,2-Cyclohexanediol (after hydrolysis) for long-term exposures: at the end of the shift after several shifts)
Chemical name	Hungary	Ireland	Italy MDLPS	Italy AIDII	
Hexane 110-54-3	2 mg/L (urine - 2,5-Hexanedione (after hydrolysis) end of shift) 18 µmol/L (urine - 2,5-Hexanedione (after hydrolysis) end of shift)	0.4 mg/L (urine - 2,5-Hexanedione end of shift at end of workweek)	-	0.5 mg/L - urine (2,5-Hexanedione (without hydrolysis)) - end of shift at end of workweek	
Chemical name	Latvia	Luxembourg	Romania	Slovakia	
Hexane 110-54-3	-	-	5 mg/g Creatinine - urine (2,5-Hexandion) - end of shift	5 mg/L (urine - 2,5-Hexanedione end of exposure or work shift) 5 mg/L (urine - 4,5-Dihydroxy-2-hexanone end of exposure or work	

Chemical name	Slovenia	Spain	Switzerland	United Kingdom shift)
Hexane 110-54-3	5 mg/L - urine (2,5-Hexanedione and 4,5-Dihydroxy-2-hexanone (after hydrolysis)) - at the end of the work shift	0.2 mg/L (urine - 2,5-Hexanedione end of workweek)	5 mg/L (urine - 2,5-Hexanedione plus 4,5-Dihydroxy-2-hexanone end of shift)	-
Cyclohexane 110-82-7	150 mg/g Creatinine - urine (1,2-Cyclohexanediol (after hydrolysis)) - at the end of the work shift; for long-term exposure: at the end of the work shift after several consecutive workdays	-	150 mg/g creatinine (urine - total 1,2-Cyclohexanediol end of shift, and after several shifts (for long-term exposures)) 146 µmol/mmol creatinine (urine - total 1,2-Cyclohexanediol end of shift, and after several shifts (for long-term exposures))	-

Derived No Effect Level (DNEL) - Workers

Chemical name	Oral	Dermal	Inhalation
Hexane 110-54-3	-	11 mg/kg bw/day [4] [6]	75 mg/m ³ [4] [6]
Naphtha, petroleum, hydrotreated light 64742-49-0	-	-	1286.4 mg/m ³ [4] [7] 837.5 mg/m ³ [5] [6] 1066.67 mg/m ³ [5] [7]
Cyclohexane 110-82-7	-	2016 mg/kg bw/day [4] [6]	700 mg/m ³ [4] [6] 1400 mg/m ³ [4] [7] 700 mg/m ³ [5] [6] 1400 mg/m ³ [5] [7]

Notes

- [4] Systemic health effects.
 [5] Local health effects.
 [6] Long term.
 [7] Short term.

Derived No Effect Level (DNEL) - General Public

Chemical name	Oral	Dermal	Inhalation
Hexane 110-54-3	4 mg/kg bw/day [4] [6]	-	16 mg/m ³ [4] [6]
Naphtha, petroleum, hydrotreated light 64742-49-0	-	-	1152 mg/m ³ [4] [7] 178.57 mg/m ³ [5] [6] 640 mg/m ³ [5] [7]
Cyclohexane 110-82-7	59.4 mg/kg bw/day [4] [6]	-	206 mg/m ³ [4] [6] 412 mg/m ³ [4] [7] 206 mg/m ³ [5] [6] 412 mg/m ³ [5] [7]

Notes

- [4] Systemic health effects.
 [5] Local health effects.
 [6] Long term.
 [7] Short term.

Predicted No Effect Concentration (PNEC)

Chemical name	Freshwater	Freshwater (intermittent release)	Marine water	Marine water (intermittent release)	Air
Cyclohexane 110-82-7	0.207 mg/L	0.207 mg/L	0.207 mg/L	-	-

Chemical name	Freshwater sediment	Marine sediment	Sewage treatment	Soil	Food chain
Cyclohexane 110-82-7	16.68 mg/kg sediment dw	16.68 mg/kg sediment dw	3.24 mg/L	3.38 mg/kg soil dw	-

8.2. Exposure controls**Engineering controls**

Showers
Eyewash stations
Ventilation systems.

Personal protective equipment**Eye/face protection**

Tight sealing safety goggles. Eye protection must conform to standard EN 166.

Hand protection

Wear suitable gloves. Impervious gloves. Gloves must conform to standard EN 374.

Skin and body protection

Wear suitable protective clothing. Long sleeved clothing. Chemical resistant apron. Antistatic boots.

Respiratory protection

No protective equipment is needed under normal use conditions. If exposure limits are exceeded or irritation is experienced, ventilation and evacuation may be required.

Environmental exposure controls

Local authorities should be advised if significant spillages cannot be contained.

SECTION 9: Physical and chemical properties**9.1. Information on basic physical and chemical properties****Appearance****Physical state**

Liquid

Colour

Colourless

Odour

Hydrocarbon-like

Odour threshold

No information available

Property**Values****Remarks • Method****Melting point / freezing point**

No data available

Initial boiling point and boiling range

> 66 °C

Flammability

Highly flammable

Flammability Limit in Air**Upper flammability or explosive limits**

No data available

Lower flammability or explosive limits

No data available

Flash point

-18 °C

CC (closed cup)

Autoignition temperature

No data available

Decomposition temperature

No data available

pH		No data available
pH (as aqueous solution)		No data available
Kinematic viscosity	0.4 cSt	@ 40 °C
Dynamic viscosity		No data available
Water solubility	Insoluble in water	
Solubility(ies)	Soluble in solvents	
Partition coefficient		No data available
Vapour pressure		No data available
Relative density	0.67	@15°C
Bulk density		No data available
Liquid Density		No data available
Relative vapour density		No data available
Particle characteristics		
Particle Size		No data available
Particle Size Distribution		No data available

9.2. Other information

9.2.1. Information with regards to physical hazard classes
Not applicable

9.2.2. Other safety characteristics
No information available

SECTION 10: Stability and reactivity

10.1. Reactivity

Reactivity None under normal use conditions.

10.2. Chemical stability

Stability Stable under normal conditions.

Explosion data

Sensitivity to mechanical impact None.

Sensitivity to static discharge Yes.

10.3. Possibility of hazardous reactions

Possibility of hazardous reactions None under normal processing.

10.4. Conditions to avoid

Conditions to avoid Heat, flames and sparks. Incompatible materials.

10.5. Incompatible materials

Incompatible materials Strong acids. Bases. Oxidizing agents.

10.6. Hazardous decomposition products

Hazardous decomposition products Carbon oxides.

SECTION 11: Toxicological information

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

Information on likely routes of exposure

Product Information

Inhalation	Specific test data for the substance or mixture is not available. Aspiration into lungs can produce severe lung damage. May cause pulmonary edema. Pulmonary edema can be fatal. May cause irritation of respiratory tract. May cause drowsiness or dizziness.
Eye contact	Specific test data for the substance or mixture is not available. Contact with eyes may cause irritation.
Skin contact	Specific test data for the substance or mixture is not available. Causes skin irritation. (based on components). Repeated exposure may cause skin dryness or cracking. Prolonged skin contact may defat the skin and produce dermatitis.
Ingestion	Specific test data for the substance or mixture is not available. Potential for aspiration if swallowed. May cause lung damage if swallowed. Aspiration may cause pulmonary edema and pneumonitis. May be fatal if swallowed and enters airways. Ingestion may cause gastrointestinal irritation, nausea, vomiting and diarrhoea.

Symptoms related to the physical, chemical and toxicological characteristics

Symptoms Difficulty in breathing. Coughing and/ or wheezing. Dizziness. Redness. May cause redness and tearing of the eyes. Inhalation of high vapour concentrations may cause symptoms like headache, dizziness, tiredness, nausea and vomiting.

Acute toxicity Based on available data, the classification criteria are not met.

Numerical measures of toxicity

The following values are calculated based on chapter 3.1 of the GHS document:

ATEmix (dermal) > 2,000 mg/kg

Unknown acute toxicity

51.88 % of the mixture consists of ingredient(s) of unknown acute dermal toxicity.

Component Information

Chemical name	Oral LD50	Dermal LD50	Inhalation LC50
Hexane	= 25 g/kg (Rat)	= 3000 mg/kg (Rabbit)	= 48000 ppm (Rat) 4 h
Naphtha, petroleum, hydrotreated light	> 5000 mg/kg (Rat)	> 3160 mg/kg (Rabbit)	= 73680 ppm (Rat) 4 h
Cyclohexane	= 12705 mg/kg (Rat)	> 2000 mg/kg (Rabbit)	> 32880 mg/m ³ (Rat) 4 h

Delayed and immediate effects as well as chronic effects from short and long-term exposure

Skin corrosion/irritation Classification based on data available for ingredients. Causes skin irritation.

Serious eye damage/eye irritation Based on available data, the classification criteria are not met.

Respiratory or skin sensitisation Based on available data, the classification criteria are not met.

Germ cell mutagenicity Based on available data, the classification criteria are not met.

The table below indicates ingredients above the cut-off threshold considered as relevant which are listed as mutagenic.

Chemical name	European Union
Naphtha, petroleum, hydrotreated light	Muta. 1B

Carcinogenicity This substance is not classified as a carcinogen because it contains <0.1% w/w of Benzene.

The table below indicates whether each agency has listed any ingredient as a carcinogen.

Chemical name	European Union
Naphtha, petroleum, hydrotreated light	Carc. 1B

Reproductive toxicity Classification based on data available for ingredients. Suspected of damaging fertility or the unborn child.

The table below indicates ingredients above the cut-off threshold considered as relevant which are listed as reproductive toxins.

Chemical name	European Union
Hexane	Repr. 2

STOT - single exposure May cause drowsiness or dizziness.

STOT - repeated exposure May cause damage to organs through prolonged or repeated exposure.

Aspiration hazard May be fatal if swallowed and enters airways.

11.2. Information on other hazards

11.2.1. Endocrine disrupting properties

Endocrine disrupting properties Based on available data, the classification criteria are not met

11.2.2. Other information

Other adverse effects No information available.

SECTION 12: Ecological information

12.1. Toxicity

Ecotoxicity Toxic to aquatic life with long lasting effects. Harmful to aquatic life.

Chemical name	Algae/aquatic plants	Fish	Toxicity to microorganisms	Crustacea
Hexane 110-54-3	-	LC50: 2.1 - 2.98mg/L (96h, Pimephales promelas)	-	-
Naphtha, petroleum, hydrotreated light 64742-49-0	-	LC50: =8.41mg/L (96h, Oncorhynchus mykiss)	-	-
Cyclohexane 110-82-7	EC50: >500mg/L (72h, Desmodesmus subspicatus)	LC50: 3.96 - 5.18mg/L (96h, Pimephales promelas) LC50: 23.03 - 42.07mg/L (96h, Pimephales promelas) LC50: 24.99 - 44.69mg/L (96h, Lepomis macrochirus) LC50: 48.87 - 68.76mg/L (96h, Poecilia reticulata)	EC50 = 85.5 mg/L 5 min EC50 = 93 mg/L 10 min	-

12.2. Persistence and degradability

Persistence and degradability No information available.

12.3. Bioaccumulative potential

Bioaccumulation

Component Information

Chemical name	Partition coefficient
Hexane	4
Cyclohexane	3.44

12.4. Mobility in soil

Mobility in soil No information available.

12.5. Results of PBT and vPvB assessment

PBT and vPvB assessment Based on available data, the classification criteria are not met.

Chemical name	PBT and vPvB assessment
Hexane 110-54-3	The substance is not PBT / vPvB
Methylcyclopentane 96-37-7	The substance is not PBT / vPvB
Naphtha, petroleum, hydrotreated light 64742-49-0	The substance is not PBT / vPvB
Cyclohexane 110-82-7	The substance is not PBT / vPvB

12.6. Endocrine disrupting properties

Endocrine disrupting properties Based on available data, the classification criteria are not met.

12.7. Other adverse effects

Other adverse effects No information available.

PMT or vPvM properties Based on available data, the classification criteria are not met.

SECTION 13: Disposal considerations

13.1. Waste treatment methods

Waste from residues/unused products Should not be released into the environment. Dispose of in accordance with local regulations. Dispose of waste in accordance with environmental legislation.

Contaminated packaging Empty containers pose a potential fire and explosion hazard. Do not cut, puncture or weld containers.

Waste codes / waste designations according to EWC / AVV According to the European Waste Catalogue, Waste Codes are not product specific, but application specific. Waste codes should be assigned by the user based on the application for which the product was used.

SECTION 14: Transport information

Note: The information provided below may not apply to all shipping situations. Consult appropriate Dangerous Goods Regulations for additional requirements and mode-specific, material-specific, or quantity-specific shipping requirements.

IATA

14.1 UN number or ID number UN1208
 14.2 UN proper shipping name Hexanes
 14.3 Transport hazard class(es) 3
 14.4 Packing group II
 Description UN1208, Hexanes, 3, II
 14.5 Environmental hazards Yes
 14.6 Special Precautions for Users
 Special Provisions None
 ERG Code 3H
 Note: None

IMDG

14.1 UN number or ID number UN1208
 14.2 UN proper shipping name Hexanes
 14.3 Transport hazard class(es) 3
 14.4 Packing group II
 Description UN1208, Hexanes, 3, II, (-18°C c.c.), Marine pollutant
 14.5 Environmental hazards Yes
 14.6 Special Precautions for Users
 Special Provisions None
 EmS-No. F-E, S-D
 Underlined EMS codes indicate additional advice is given in the emergency response procedures
 14.7 Maritime transport in bulk according to IMO instruments No information available

RID

14.1 UN number or ID number UN1208
 14.2 UN proper shipping name HEXANES
 14.3 Transport hazard class(es) 3
 14.4 Packing group II
 Description UN1208, HEXANES, 3, II, Environmentally Hazardous
 14.5 Environmental hazards Yes
 14.6 Special Precautions for Users
 Special Provisions None
 Classification code F1

ADR

14.1 UN number or ID number UN1208
 14.2 UN proper shipping name HEXANES
 14.3 Transport hazard class(es) 3
 14.4 Packing group II
 Description UN1208, HEXANES, 3, II, Environmentally Hazardous
 14.5 Environmental hazards Yes
 14.6 Special Precautions for Users
 Special Provisions None
 Classification code F1
 Tunnel restriction code (D/E)

ADN

14.1 UN/ID no UN1208
 14.2 EPNN HEXANES
 14.3 Transport hazard class(es) 3
 14.4 Packing group II
 Description UN1208, HEXANES, 3, II, Environmentally Hazardous

14.5 Environmental hazard	Yes
14.6 Special Precautions for Users	
Special Provisions	None
Classification code	F1
Ventilation	VE01
Equipment Requirements	PP, EX, A

SECTION 15: Regulatory information

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

National regulations

France

Occupational Illnesses (R-463-3, France)

Chemical name	French RG number
Hexane 110-54-3	RG 59, RG 84
Naphtha, petroleum, hydrotreated light 64742-49-0	RG 84
Cyclohexane 110-82-7	RG 84

Germany

Water hazard class (WGK) strongly hazardous to water (WGK 3)

Netherlands

Carcinogenic, mutagenic and reproductive toxic effects

Chemical name	Netherlands - List of Carcinogens	Netherlands - List of Mutagens	Netherlands - List of Reproductive Toxins
Hexane	-	-	Fertility Category 2

Switzerland

Ordinance on the Incentive Tax on Volatile Organic Compounds (OVOC) SR 814.018 Group I
Storage of Hazardous Material SC 10/12
WPO (GSchV) SR 814.201; WPA (GSchG) SR 814.20 Class A

European Union

Take note of Directive 98/24/EC on the protection of the health and safety of workers from the risks related to chemical agents at work.

Authorisations and/or restrictions on use:

This product contains one or more substance(s) subject to restriction (Regulation (EC) No. 1907/2006 (REACH), Annex XVII)

Chemical name	Restricted substance per REACH Annex XVII	Substance subject to authorisation per REACH Annex XIV
Hexane - 110-54-3	75	-
Naphtha, petroleum, hydrotreated light - 64742-49-0	28 29 75	-
Cyclohexane - 110-82-7	57 75	-

Persistent Organic Pollutants

Not applicable

Dangerous substance category per Seveso Directive (2012/18/EU)

P5a - FLAMMABLE LIQUIDS

P5b - FLAMMABLE LIQUIDS

P5c - FLAMMABLE LIQUIDS

E2 - Hazardous to the Aquatic Environment in Category Chronic 2

Named dangerous substances per Seveso Directive (2012/18/EU)

Chemical name	Lower-tier requirements (tons)	Upper-tier requirements (tons)
Naphtha, petroleum, hydrotreated light - 64742-49-0	-	25000

Ozone-depleting substances (ODS) regulation (EC) 1005/2009

Not applicable

International Inventories

Contact supplier for inventory compliance status

15.2. Chemical safety assessment

Chemical Safety Report

No information available

SECTION 16: Other information

Key or legend to abbreviations and acronyms used in the safety data sheet

Full text of H-Statements referred to under section 3

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

H340 - May cause genetic defects

H350 - May cause cancer

H361f - Suspected of damaging fertility

H373 - May cause damage to organs through prolonged or repeated exposure

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

Legend

SVHC: Substances of Very High Concern for Authorisation:

PBT: Persistent, Bioaccumulative, and Toxic (PBT) Substances

vPvB: Very Persistent and very Bioaccumulative (vPvB) Substances

STOT: Specific Target Organ Toxicity

ATE: Acute Toxicity Estimate

LC50: 50% Lethal Concentration

LD50: 50% Lethal Dose

Legend Section 8: Exposure controls/personal protection

TWA TWA (time-weighted average)

Ceiling Maximum limit value

SCBA Self-contained breathing apparatus

STEL

Sk*

STEL (Short Term Exposure Limit)

Skin designation

Classification procedure

Classification according to Regulation (EC) No. 1272/2008 [CLP]	Method Used
Acute oral toxicity	Calculation method
Acute inhalation toxicity - gas	Calculation method
Acute inhalation toxicity - vapour	Calculation method
Acute inhalation toxicity - dust/mist	Calculation method
Skin corrosion/irritation	Calculation method
Serious eye damage/eye irritation	Calculation method
Respiratory sensitisation	Calculation method
Skin sensitisation	Calculation method
Mutagenicity	Calculation method
Carcinogenicity	Calculation method
Reproductive toxicity	Calculation method
STOT - single exposure	Calculation method
STOT - repeated exposure	Calculation method
Acute aquatic toxicity	Calculation method
Chronic aquatic toxicity	Calculation method
Aspiration hazard	Calculation method
Ozone	Calculation method

Key literature references and sources for data used to compile the SDS

Agency for Toxic Substances and Disease Registry (ATSDR)
 U.S. Environmental Protection Agency ChemView Database
 European Food Safety Authority (EFSA)
 European Chemicals Agency (ECHA) Committee for Risk Assessment (ECHA_RAC)
 European Chemicals Agency (ECHA) (ECHA_API)
 Environmental Protection Agency
 Acute Exposure Guideline Level(s) (AEGL(s))
 U.S. Environmental Protection Agency Federal Insecticide, Fungicide, and Rodenticide Act
 U.S. Environmental Protection Agency High Production Volume Chemicals
 Food Research Journal
 Hazardous Substance Database
 International Uniform Chemical Information Database (IUCLID)
 Japan GHS Classification
 Australian National Industrial Chemicals Notification and Assessment Scheme (NICNAS)
 NIOSH (National Institute for Occupational Safety and Health)
 National Library of Medicine's ChemID Plus (NLM CIP)
 National Library of Medicine's PubMed database (NLM PUBMED)
 U.S. National Toxicology Program (NTP)
 New Zealand's Chemical Classification and Information Database (CCID)
 Organisation for Economic Co-operation and Development Environment, Health, and Safety Publications
 Organisation for Economic Co-operation and Development High Production Volume Chemicals Programme
 Organisation for Economic Co-operation and Development Screening Information Data Set
 World Health Organization

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Disclaimer

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End of Safety Data Sheet