HALLIBURTON

SAFETY DATA SHEET

according to Regulation (EC) No. 453/2010

HS-2023

Revision Date: 15-Sep-2015 **Revision Number:** 7

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

1.1. Product Identifier

Product Name HS-2023
Internal ID Code HM006684

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

Recommended Use Solvent

1.3. Details of the supplier of the safety data sheet

Halliburton Energy Services
Halliburton House, Howemoss Place
Kirkhill Industrial Estate
Dyce
Aberdeen, AB21 0GN
United Kingdom

www.halliburton.com

For further information, please contact
E-Mail address: fdunexchem@halliburton.com

1.4. Emergency telephone number

+44 8 08 189 0979 / 1-760-476-3961

Emergency telephone - §45 - (EC)1272/2008	
Europe	**112**
Croatia	Centar za kontrolu otrovanja (CKO): (+385 1) 23-48-342 (Poison Control Center (PCC) - Institute for Medical Research and Occupational Health)
Cyprus	+210 7793777
Denmark	Poison Control Hotline (DK): +45 82 12 12 12
France	ORFILA (FR): + 01 45 42 59 59
Germany	Poison Center Berlin (DE): +49 030 30686 790
Italy	Poison Center, Milan (IT): +39 02 6610 1029
Netherlands	National Poisons Information Center (NL): +31 30 274 88 88 (NB: this service is only available to health professionals)
Norway	Poisons Information (NO):+ 47 22 591300
Poland	Poison Control and Information Centre, Warsaw (PL): +48 22 619 66 54; +48 22 619 08 97
Romania	+40 21 318 36 06
Spain	Poison Information Service (ES): +34 91 562 04 20
United Kingdom	NHS Direct (UK): +44 0845 46 47

SECTION 2: Hazards Identification

2.1. Classification of the substance or mixture

REGULATION (EC) No 1272/2008

Aspiration Category	Category 1 - H304
Skin Corrosion / irritation	Category 2 - H315
Serious Eye Damage / Eye Irritation	Category 1 - H318
Germ Cell Mutagenicity	Category 1 - H340
Carcinogenicity	Category 1B - H350
Reproductive Toxicity	Category 1B - H360
Specific Target Organ Toxicity - (Single Exposure)	Category 3 - H336

Chronic Aquatic Toxicity	Chronic 3 - H412
Flammable liquids.	Category 3 - H226

2.2. Label Elements

Hazard Pictograms

Signal Word **Danger**

Hazard Statements
H226 - Flammable liquid and vapor
H304 - May be fatal if swallowed and enters airways
H315 - Causes skin irritation
H318 - Causes serious eye damage
H336 - May cause drowsiness or dizziness
H340 - May cause genetic defects
H350 - May cause cancer
H360 - May damage fertility or the unborn child
H412 - Harmful to aquatic life with long lasting effects

Precautionary Statements - EU (§28, 1272/2008)
P210 - Keep away from heat/sparks/open flames/hot surfaces. - No smoking
P280 - Wear protective gloves/eye protection/face protection
P302 + P352 - IF ON SKIN: Wash with plenty of soap and water
P304 + P340 - IF INHALED: Remove to fresh air and keep at rest in a position comfortable for breathing
P305 + P351 + P338 - IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing
P308 + P313 - IF exposed or concerned: Get medical advice/attention

Contains

Substances	**CAS Number**
Cyclohexanone	108-94-1
Methyl ethyl ketone	78-93-3
n-Methylpyrrolidone	872-50-4
Light aromatic solvent	64742-95-6

2.3. Other Hazards

This mixture contains no substance considered to be persistent, bioaccumulating nor toxic (PBT).
This mixture contains no substance considered to be very persistent nor very bioaccumulating (vPvB).

SECTION 3: Composition/information on Ingredients

3.2. Mixtures

Mixture

Substances	EINECS	CAS Number	PERCENT (w/w)	EU - CLP Substance Classification	REACH No.
Cyclohexanone	203-631-1	108-94-1	1 - 5%	Acute Tox. 4 (H302) Acute Tox. 4 (H312) Acute Tox. 4 (H332) Skin Irrit. 2 (H315) Eye Corr. 1 (H318) Flam. Liq. 3 (H226)	No data available
Methyl ethyl ketone	201-159-0	78-93-3	1 - 5%	Eye Irrit. 2 (H319) STOT SE 3 (H336) Flam. Liq. 2 (H225)	No data available
n-Methylpyrrolidone	212-828-1	872-50-4	1 - 5%	Skin Irrit. 2 (H315) Eye Irrit. 2 (H319) Repr. 1 (H360) STOT SE 3 (H335)	No data available
Light aromatic solvent	265-199-0	64742-95-6	60 - 100%	Skin Irrit. 2 (H315)	No data available

				Muta. 1 (H340) Carc. 1B (H350) STOT SE 3 (H336) Asp. Tox. 1 (H304) Aquatic Chronic 3 (H412) Flam. Liq. 3 (H226)	

For the full text of the H-phrases mentioned in this Section, see Section 16

SECTION 4: First aid measures

4.1. Description of first aid measures

Inhalation If inhaled, move victim to fresh air and seek medical attention.

Eyes Immediately flush eyes with large amounts of water for at least 15 minutes. Get immediate medical attention.

Skin In case of contact, immediately flush skin with plenty of soap and water for at least 15 minutes. Get medical attention. Remove contaminated clothing and launder before reuse.

Ingestion Get medical attention! If vomiting occurs, keep head lower than hips to prevent aspiration. Rinse mouth. Never give anything by mouth to an unconscious person.

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

Causes serious eye damage. Aspiration into the lungs may cause chemical pneumonitis including coughing, difficulty breathing, wheezing, coughing up blood and pneumonia, which can be fatal. Causes skin irritation. May cause drowsiness and dizziness. Potential carcinogen. Potential reproductive hazard.

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

Notes to Physician Treat symptomatically

SECTION 5: Firefighting Measures

5.1. Extinguishing media

Suitable Extinguishing Media

Carbon dioxide, dry chemical, foam.

Extinguishing media which must not be used for safety reasons

None known.

5.2. Special hazards arising from the substance or mixture

Special Exposure Hazards

Vapors are heavier than air and may accumulate in low areas. Vapors may travel along the ground to be ignited at distant locations. Use water spray to cool fire exposed surfaces. Closed containers may explode in fire. Decomposition in fire may produce harmful gases.

5.3. Advice for firefighters

Special Protective Equipment for Fire-Fighters

Full protective clothing and approved self-contained breathing apparatus required for fire fighting personnel.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

Remove sources of ignition. Use appropriate protective equipment. Wear self-contained breathing apparatus in enclosed areas. Avoid contact with skin, eyes and clothing. Avoid breathing vapors. Ensure adequate ventilation. Evacuate all persons from the area.

See Section 8 for additional information

6.2. Environmental precautions

Prevent from entering sewers, waterways, or low areas. Consult local authorities.

6.3. Methods and material for containment and cleaning up

Isolate spill and stop leak where safe. Remove ignition sources and work with non-sparking tools. Contain spill with sand or other inert materials. Scoop up and remove.

6.4. Reference to other sections

See Section 8 and 13 for additional information.

SECTION 7: Handling and Storage

7.1. Precautions for Safe Handling

Remove sources of ignition. Avoid contact with eyes, skin, or clothing. Avoid breathing vapors. Avoid breathing mist. Ensure adequate ventilation. Wash hands after use. Launder contaminated clothing before reuse. Ground and bond containers when transferring from one container to another. Use appropriate protective equipment.

Hygiene Measures

Handle in accordance with good industrial hygiene and safety practice.

7.2. Conditions for safe storage, including any incompatibilities

Store away from oxidizers. Keep from heat, sparks, and open flames.

7.3. Specific End Use(s)

Exposure Scenario No information available

Other Guidelines No information available

SECTION 8: Exposure Controls/Personal Protection

8.1. Control parameters

Exposure Limits

Substances	CAS Number	EU	UK	Netherlands	France
Cyclohexanone	108-94-1	Not applicable	TWA: 10 ppm TWA: 41 mg/m³ STEL: 20 ppm STEL: 82 mg/m³	STEL: 50 mg/m³	10 ppm
Methyl ethyl ketone	78-93-3	Not applicable	TWA: 200 ppm TWA: 600 mg/m³ STEL: 300 ppm STEL: 899 mg/m³	TWA: 590 mg/m³ STEL: 900 mg/m³	200 ppm
n-Methylpyrrolidone	872-50-4	Not applicable	TWA: 10 ppm TWA: 40 mg/m³ STEL: 75 ppm STEL: 309 mg/m³	40 mg/m³	TWA: 40 mg/m³ TWA: 10 ppm STEL: 80 mg/m³ STEL: 20 ppm
Light aromatic solvent	64742-95-6	Not applicable	Not applicable	Not applicable	Not applicable

Substances	CAS Number	Germany	Spain	Portugal	Finland
Cyclohexanone	108-94-1	TWA: 20 ppm TWA: 80 mg/m³	TWA: 10 ppm TWA: 41 mg/m³ 20 ppm STEL [VLA-EC]; 82 mg/m³ STEL [VLA-EC]	TWA: 10 ppm TWA: 40.8 mg/m³ STEL: 20 ppm STEL: 81.6 mg/m³	TWA: 10 ppm TWA: 41 mg/m³ STEL: 20 ppm STEL: 82 mg/m³
Methyl ethyl ketone	78-93-3	TWA: 200 ppm TWA: 600 mg/m³	TWA: 200 ppm TWA: 600 mg/m³ 300 ppm STEL [VLA-EC]; 900 mg/m³ STEL [VLA-EC]	TWA: 200 ppm TWA: 600 mg/m³ STEL: 300 ppm STEL: 900 mg/m³	STEL: 100 ppm STEL: 300 mg/m³
n-Methylpyrrolidone	872-50-4	TWA: 20 ppm TWA: 82 mg/m³	TWA: 10 ppm TWA: 40 mg/m³ 20 ppm STEL [VLA-EC]; 80 mg/m³ STEL [VLA-EC]	TWA: 10 ppm TWA: 40 mg/m³ STEL: 20 ppm STEL: 80 mg/m³	TWA: 10 ppm TWA: 40 mg/m³ STEL: 20 ppm STEL: 80 mg/m³
Light aromatic solvent	64742-95-6	50 ppm	Not applicable	Not applicable	Not applicable

Substances	CAS Number	Austria	Ireland	Switzerland	Norway
Cyclohexanone	108-94-1	TWA: 5 ppm TWA: 20 mg/m³ STEL" 20 ppm STEL" 80 mg/m³	10 ppm TWA; 40.8 mg/m³ TWA 20 ppm STEL; 81.6 mg/m³ STEL	TWA: 25 ppm TWA: 100 mg/m³ STEL: 50 ppm STEL: 200 mg/m³	TWA: 20 ppm TWA: 80 mg/m³ STEL: 30 ppm STEL: 120 mg/m³
Methyl ethyl ketone	78-93-3	TWA: 100 ppm TWA: 295 mg/m³ STEL" 200 ppm STEL" 590 mg/m³	200 ppm TWA; 600 mg/m³ TWA 300 ppm STEL; 900 mg/m³ STEL	TWA: 200 ppm TWA: 590 mg/m³ STEL: 200 ppm STEL: 590 mg/m³	TWA: 75 ppm TWA: 220 mg/m³ STEL: 112.5 ppm STEL: 275 mg/m³
n-Methylpyrrolidone	872-50-4	TWA: 10 ppm TWA: 40 mg/m³ STEL" 20 ppm STEL" 80 mg/m³	10 ppm TWA; 40 mg/m³ TWA 20 ppm STEL; 80 mg/m³ STEL	TWA: 20 ppm TWA: 80 mg/m³ STEL: 40 ppm STEL: 160 mg/m³	TWA: 5 ppm TWA: 20 mg/m³ STEL: 20 ppm STEL: 80 mg/m³
Light aromatic solvent	64742-95-6	Not applicable	Not applicable	Not applicable	Not applicable

Substances	CAS Number	Italy	Poland	Hungary	Czech Republic
Cyclohexanone	108-94-1	TWA: 10 ppm TWA: 40.8 mg/m³ STEL: 20 ppm STEL: 81.6 mg/m³	TWA: 40 mg/m³ STEL: 80 mg/m³	TWA: 40.8 mg/m³ STEL: 81.6 mg/m³	TWA: 40 mg/m³
Methyl ethyl ketone	78-93-3	TWA: 200 ppm TWA: 600 mg/m³ STEL: 300 ppm STEL: 900 mg/m³	TWA: 450 mg/m³ STEL: 900 mg/m³	TWA: 600 mg/m³ STEL: 900 mg/m³	TWA: 600 mg/m³
n-Methylpyrrolidone	872-50-4	Not applicable	TWA: 40 mg/m³ STEL: 80 mg/m³	Not applicable	TWA: 40 mg/m³
Light aromatic solvent	64742-95-6	Not applicable	Not applicable	Not applicable	Not applicable

Substances	CAS Number	Denmark	Romania	Croatia	Cyprus
Cyclohexanone	108-94-1	TWA: 10 ppm TWA: 41 mg/m³	TWA: 10 ppm TWA: 40.8 mg/m³ STEL: 20 ppm STEL: 81.6 mg/m³	TWA: 10 ppm TWA: 40.8 mg/m³ STEL: 20 ppm STEL: 81.6 mg/m³	TWA: 10 ppm TWA: 40.8 mg/m³ STEL: 20 ppm STEL: 81.6 mg/m³
Methyl ethyl ketone	78-93-3	TWA: 50 ppm TWA: 145 mg/m³	TWA: 200 ppm TWA: 600 mg/m³ TWA: 63 ppm TWA: 200 mg/m³ STEL: 300 ppm STEL: 900 mg/m³	TWA: 200 ppm TWA: 600 mg/m³ STEL: 300 ppm STEL: 900 mg/m³	TWA: 200 ppm TWA: 600 mg/m³ STEL: 300 ppm STEL: 900 mg/m³
n-Methylpyrrolidone	872-50-4	TWA: 5 ppm TWA: 20 mg/m³	TWA: 10 ppm TWA: 40 mg/m³ STEL: 20 ppm STEL: 80 mg/m³	TWA: 10 ppm TWA: 40 mg/m³ STEL: 20 ppm STEL: 80 mg/m³	TWA: 40 mg/m³ TWA: 10 ppm STEL: 80 mg/m³ STEL: 20 ppm
Light aromatic solvent	64742-95-6	Not applicable	Not applicable	Not applicable	Not applicable

Derived No Effect Level (DNEL) No information available.

Worker

General Population

Predicted No Effect Concentration (PNEC) No information available.

8.2. Exposure controls

Engineering Controls Use in a well ventilated area. Local exhaust ventilation should be used in areas without good cross ventilation.

Personal protective equipment

If engineering controls and work practices cannot prevent excessive exposures, the selection and proper use of personal protective equipment should be determined by an industrial hygienist or other qualified professional based on the specific application of this product.

Respiratory Protection If engineering controls and work practices cannot keep exposure below occupational exposure limits or if exposure is unknown, wear a NIOSH certified, European Standard EN 149, AS/NZS 1715:2009, or equivalent respirator when using this product. Selection of and instruction on using all personal protective equipment, including respirators, should be performed by an Industrial Hygienist or other qualified professional. Organic vapor respirator.

Hand Protection Impervious rubber gloves.
Skin Protection Rubber apron.
Eye Protection Chemical goggles; also wear a face shield if splashing hazard exists.
Other Precautions Eyewash fountains and safety showers must be easily accessible.

Environmental Exposure Controls Do not allow material to contaminate ground water system

SECTION 9: Physical and Chemical Properties

9.1. Information on basic physical and chemical properties

Physical State: Liquid **Color:** Colorless Clear
Odor: Hydrocarbon **Odor Threshold:** No information available

Property	Values	Remarks/ - Method
pH:	No data available	

Freezing Point/Range	No data available
Melting Point/Range	No data available
Boiling Point/Range	No data available
Flash Point	48 °C / 108 °F
Flammability (solid, gas)	No data available
upper flammability limit	12.6
lower flammability limit	1.9
Evaporation rate	No data available
Vapor Pressure	No data available
Vapor Density	No data available
Specific Gravity	0.8876
Water Solubility	Insoluble in water
Solubility in other solvents	No data available
Partition coefficient: n-octanol/water	No data available
Autoignition Temperature	471 °C / 880 °F
Decomposition Temperature	No data available
Viscosity	No data available
Explosive Properties	No information available
Oxidizing Properties	No information available

9.2. Other information

VOC Content (%) No data available

SECTION 10: Stability and Reactivity

10.1. Reactivity

Not expected to be reactive.

10.2. Chemical Stability

Stable

10.3. Possibility of Hazardous Reactions

Will Not Occur

10.4. Conditions to Avoid

Keep away from heat, sparks and flame.

10.5. Incompatible Materials

Strong oxidizers.

10.6. Hazardous Decomposition Products

Toxic fumes. Carbon monoxide and carbon dioxide.

SECTION 11: Toxicological Information

11.1. Information on Toxicological Effects

Acute Toxicity

Inhalation May cause respiratory irritation. May cause central nervous system depression including headache, dizziness, drowsiness, incoordination, slowed reaction time, slurred speech, giddiness and unconsciousness.

Eye Contact Causes serious eye damage.

Skin Contact Causes skin irritation.

Ingestion Irritation of the mouth, throat, and stomach. May cause abdominal pain, vomiting, nausea, and diarrhea. Aspiration into the lungs may cause chemical pneumonitis including coughing, difficulty breathing, wheezing, coughing up blood and pneumonia, which can be fatal.

Chronic Effects/Carcinogenicity Prolonged or repeated exposure may cause reproductive system damage.

Toxicology data for the components

Substances	CAS Number	LD50 Oral	LD50 Dermal	LC50 Inhalation
Cyclohexanone	108-94-1	800 mg/kg (Rat) 1620 mg/kg (Rat)	948 mg/kg (Rabbit) > 794 mg/kg (Rabbit)	10.7 mg/L (Rat) 4h 8000 ppm (Rat) 4h > 6.2 mg/L (Rat) 4h
Methyl ethyl ketone	78-93-3	2737 mg/kg (Rat)	6480 mg/kg (Rabbit)	No data available
n-Methylpyrrolidone	872-50-4	3598 mg/kg (Rat) 3500 mg/kg (Rabbit) 4150 mg/kg (Rat)	2500 mg/kg (Rat) 2000 mg/kg (Rabbit) > 5000 mg/kg (Rat)	3.1 mg/L (Rat) 4h > 5.1 mg/L (Rat)
Light aromatic solvent	64742-95-6	8400 mg/kg (Rat) >5000 mg/kg (Rat)	>2000 mg/kg (Rabbit)	5.2 mg/L (Rat) 4h 3400 ppm (Rat) 4h

				>8.53 mg/L (Rat) 4h

Substances	CAS Number	Skin corrosion/irritation
Cyclohexanone	108-94-1	May cause mild skin irritation.
n-Methylpyrrolidone	872-50-4	Causes moderate skin irritation.
Light aromatic solvent	64742-95-6	Causes moderate skin irritation. (Rabbit)

Substances	CAS Number	Eye damage/irritation
Cyclohexanone	108-94-1	May cause severe eye irritation.
n-Methylpyrrolidone	872-50-4	Causes moderate eye irritation.
Light aromatic solvent	64742-95-6	Non-irritating to rabbit's eye

Substances	CAS Number	Skin Sensitization
Cyclohexanone	108-94-1	Did not cause sensitization on laboratory animals (guinea pig)
n-Methylpyrrolidone	872-50-4	Patch test on human volunteers did not demonstrate sensitization properties
Light aromatic solvent	64742-95-6	Did not cause sensitization on laboratory animals (guinea pig)

Substances	CAS Number	Respiratory Sensitization
Cyclohexanone	108-94-1	Not confirmed to cause skin or respiratory sensitization.
n-Methylpyrrolidone	872-50-4	No information available
Light aromatic solvent	64742-95-6	No information available

Substances	CAS Number	Mutagenic Effects
Cyclohexanone	108-94-1	In vivo tests did not show mutagenic effects. In vitro tests did not show mutagenic effects.
n-Methylpyrrolidone	872-50-4	In vitro tests did not show mutagenic effects In vivo tests did not show mutagenic effects.
Light aromatic solvent	64742-95-6	Some in vivo tests have shown mutagenic effects. In vitro tests have shown mutagenic effects

Substances	CAS Number	Carcinogenic Effects
Cyclohexanone	108-94-1	Did not show carcinogenic or teratogenic effects in animal experiments (mouse)
n-Methylpyrrolidone	872-50-4	Not regarded as carcinogenic.
Light aromatic solvent	64742-95-6	Contains a known or suspected carcinogen

Substances	CAS Number	Reproductive toxicity
Cyclohexanone	108-94-1	This product does not contain any known or suspected reproductive hazards
n-Methylpyrrolidone	872-50-4	Fetotoxic and teratogenic effects observed in experimental animals at concentrations that did not produce maternal toxicity.
Light aromatic solvent	64742-95-6	No data of sufficient quality are available.

Substances	CAS Number	STOT - single exposure
Cyclohexanone	108-94-1	No observed cross-reactivity with human tissues
n-Methylpyrrolidone	872-50-4	May cause disorder and damage to the Respiratory system.
Light aromatic solvent	64742-95-6	May cause headache, dizziness, and other central nervous system effects.

Substances	CAS Number	STOT - repeated exposure
Cyclohexanone	108-94-1	No significant toxicity observed in animal studies at concentration requiring classification.
n-Methylpyrrolidone	872-50-4	No significant toxicity observed in animal studies at concentration requiring classification.
Light aromatic solvent	64742-95-6	No significant toxicity observed in animal studies at concentration requiring classification. (similar substances)

Substances	CAS Number	Aspiration hazard
Cyclohexanone	108-94-1	Not applicable
n-Methylpyrrolidone	872-50-4	Not applicable
Light aromatic solvent	64742-95-6	May be fatal if swallowed and enters airways

SECTION 12: Ecological Information

12.1. Toxicity

Ecotoxicity Effects

Substances	CAS Number	Toxicity to Algae	Toxicity to Fish	Toxicity to Microorganisms	Toxicity to Invertebrates
Cyclohexanone	108-94-1	EC50 20 mg/L (Chlorella vulgaris) EC03 (8d) 370 mg/L (Scendesmus quadricauda)	LC50 481-578 mg/L (Pimephales promelas) LC50 (96h) 732 mg/L (Pimephales promelas)	No information available	EC50 (24h) 800 mg/l (Daphnia magna)
Methyl ethyl ketone	78-93-3	No information available	LC50: 3130-3320 mg/L (Pimephales promelas)	No information available	EC50: 5091 mg/L (Daphnia magna)
n-Methylpyrrolidone	872-50-4	EC50 (72h) 600.5 mg/L (Desmodesmus subspicatus) EC50 (72h) > 500 mg/L (Desmodesmus subspicatus)	LC50 (96h) 832 mg/L (Lepomis macrochirus) LC50 (96h) 4000 mg/L (Leuciscus idus) LC50 (96h) 1072 mg/L (Pimephales promelas) LC50 (96h) 1400 mg/L (Poecilia reticulata) LC50 (96h) 500 mg/L (Oncorhynchus mykiss)	EC50 (0.5h) 600 mg/L (Activated sludge)	EC50 (48h) 4897 mg/L (Daphnia magna) EC50 (24h) 1000 mg/L (Daphnia magna)
Light aromatic solvent	64742-95-6	EL50 (72h) 3.1 mg/L (Pseudokirchnerella subcapitata)	LC50 (96h) 1.03 mg/L (Oncorhynchus mykiss)	No information available	EC50 (48h) 1.2 mg/L (Daphnia magna)

12.2. Persistence and degradability

Substances	CAS Number	Persistence and Degradability
Cyclohexanone	108-94-1	Readily biodegradable (87% @ 28d)
Methyl ethyl ketone	78-93-3	No information available
n-Methylpyrrolidone	872-50-4	(73% @ 28d)
Light aromatic solvent	64742-95-6	(77.05% @ 28d)

12.3. Bioaccumulative potential

Substances	CAS Number	Log Pow
Cyclohexanone	108-94-1	0.86
Methyl ethyl ketone	78-93-3	No information available
n-Methylpyrrolidone	872-50-4	-0.46 BCF = 3.16
Light aromatic solvent	64742-95-6	3.20 - 3.63 BCF = 119 - 142

12.4. Mobility in soil

Substances	CAS Number	Mobility
Cyclohexanone	108-94-1	KOC = 15.15
Methyl ethyl ketone	78-93-3	No information available
n-Methylpyrrolidone	872-50-4	KOC = 20.94
Light aromatic solvent	64742-95-6	KOC = 372 - 617

12.5. Results of PBT and vPvB assessment

This mixture contains no substance considered to be persistent, bioaccumulating nor toxic (PBT). This mixture contains no substance considered to be very persistent nor very bioaccumulating (vPvB).

Substances	PBT and vPvB assessment
Cyclohexanone	Not PBT/vPvB
Methyl ethyl ketone	Not PBT/vPvB
n-Methylpyrrolidone	Not PBT/vPvB
Light aromatic solvent	Not PBT/vPvB

12.6. Other adverse effects

Endocrine Disruptor Information

This product does not contain any known or suspected endocrine disruptors

SECTION 13: Disposal Considerations

13.1. Waste treatment methods

Disposal Method Disposal should be made in accordance with federal, state, and local regulations.

Contaminated Packaging Follow all applicable national or local regulations.

SECTION 14: Transport Information

IMDG/IMO

UN Number:	UN1268
UN Proper Shipping Name:	Petroleum Distillates, N.O.S.
Transport Hazard Class(es):	3
Packing Group:	III
Environmental Hazards:	Not applicable

RID

UN Number:	UN1268
UN Proper Shipping Name:	Petroleum Distillates, N.O.S.
Transport Hazard Class(es):	3
Packing Group:	III
Environmental Hazards:	Not applicable

ADR

UN Number:	UN1268
UN Proper Shipping Name:	Petroleum Distillates, N.O.S.
Transport Hazard Class(es):	3
Packing Group:	III
Environmental Hazards:	Not applicable

IATA/ICAO

UN Number:	UN1268
UN Proper Shipping Name:	Petroleum Distillates, N.O.S.
Transport Hazard Class(es):	3
Packing Group:	III
Environmental Hazards:	Not applicable

14.1. UN Number: UN1268

14.2. UN Proper Shipping Name: Petroleum Distillates, N.O.S.

14.3. Transport Hazard Class(es): 3

14.4. Packing Group: III

14.5. Environmental Hazards: Not applicable

14.6. Special Precautions for User: None

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

SECTION 15: Regulatory Information

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

International Inventories

EINECS Inventory	This product, and all its components, complies with EINECS
US TSCA Inventory	All components listed on inventory or are exempt.
Canadian DSL Inventory	All components listed on inventory or are exempt.

Legend
TSCA - United States Toxic Substances Control Act Section 8(b) Inventory
EINECS/ELINCS - European Inventory of Existing Commercial Chemical Substances/EU List of Notified Chemical Substances
DSL/NDSL - Canadian Domestic Substances List/Non-Domestic Substances List

Germany, Water Endangering Classes (WGK) WGK 2: Hazard to waters.

Substances	CAS Number	REACH (1907/2006) - Annex XVII - Restrictions on Certain Dangerous Substances	REACH (1907/2006) - Annex XIV - Substances Subject to Authorization
n-Methylpyrrolidone	872-50-4	Use restricted. See item 30.	Not applicable
Light aromatic solvent	64742-95-6	Use restricted. See item 28.	Not applicable

		Use restricted. See item 29.	

15.2. Chemical Safety Assessment
No information available

SECTION 16: Other Information

Full text of H-Statements referred to under sections 2 and 3
H225 - Highly flammable liquid and vapor
H226 - Flammable liquid and vapor
H302 - Harmful if swallowed
H304 - May be fatal if swallowed and enters airways
H312 - Harmful in contact with skin
H315 - Causes skin irritation
H318 - Causes serious eye damage
H319 - Causes serious eye irritation
H332 - Harmful if inhaled
H335 - May cause respiratory irritation
H336 - May cause drowsiness or dizziness
H340 - May cause genetic defects
H350 - May cause cancer
H360 - May damage fertility or the unborn child
H412 - Harmful to aquatic life with long lasting effects

Key or legend to abbreviations and acronyms
bw – body weight
CAS – Chemical Abstracts Service
CLP – REGULATION (EC) No 1272/2008 OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL on Classification, Labelling and Packaging of substances and mixtures
EC – European Commission
EC10 – Effective Concentration 10%
EC50 – Effective Concentration 50%
EEC – European Economic Community
ErC50 – Effective Concentration growth rate 50%
IBC Code – International Code for the Construction and Equipment of Ships carrying Dangerous Chemicals in Bulk
LC50 – Lethal Concentration 50%
LD50 – Lethal Dose 50%
LL0 – Lethal Loading 0%
LL50 – Lethal Loading 50%
MARPOL – International Convention for the Prevention of Pollution from Ships
mg/kg – milligram/kilogram
mg/L – milligram/liter
NIOSH – National Institute for Occupational Safety and Health
NOEC – No Observed Effect Concentration
NTP – National Toxicology Program
OEL – Occupational Exposure Limit
PBT – Persistent Bioaccumulative and Toxic
PC – Chemical Product category
PEL – Permissible Exposure Limit
ppm – parts per million
PROC – Process category
REACH – REGULATION (EC) No 1907/2006 OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals
STEL – Short Term Exposure Limit
SU – Sector of Use category

Key literature references and sources for data
www.ChemADVISOR.com/

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This safety data sheet complies with the requirements of Regulation (EC) No. 453/2010

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End of Safety Data Sheet