Fuelcare

Material Safety Data Sheet

Conforms to Regulation (EC) No. 1907/2006 (REACH), Annex II, as amended by Commission Regulation (EU) 2020/878 - United Kingdom (UK)

CarbonClear™

Version: 1.2

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Fuelcare Limited encourages and expects you to read and understand the entire MSDS, as there is important information throughout the document. We expect you to follow the precautions identified in this document unless your use conditions would necessitate other appropriate methods or actions.

SECTION 1: IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND OF THE COMPANY/UNDERTAKING

1.1 Product identifier

Product name: CarbonClear ™

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

Petrochemical industry: Fuel additive.

1.3 Details of the supplier of the safety data sheet

COMPANY IDENTIFICATION

Fuelcare Limited
Stadium Point
Shrewsbury
SY2 6NE
UNITED KINGDOM

Customer Information Number: +44 (0)1743 360784
Customer Information Email: info@fuelcare.com

1.4 EMERGENCY TELEPHONE NUMBER

In Europe, Middle East, Africa and Asia Pacific 24 hour / 7 day emergency response for our products is provided by the NCEC CARECHEM 24 global network.

CARECHEM24

Country information	Emergency telephone number	Location
Europe, Middle East, Africa (all countries, English Language)	+44 1865 407333	London, UK
Asia Pacific (all countries, English Language)	+65 3165 2217	Singapore

SECTION 2: HAZARDS IDENTIFICATION

2.1 Classification of the substance or mixture: mixture

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

Carc. 2, H351
STOT SE 3, H336
Asp. Tox. 1, H304
Aquatic Chronic 2, H411
For the full text of the H-Statements mentioned in this Section, see Section 16.
For more detailed information on health effects and symptoms, see Section 11.

2.2 Label elements

Hazard pictograms

Signal word: Danger

Hazard statements

H351	Suspected of causing cancer.
H304	May be fatal if swallowed and enters airways.
H336	May cause drowsiness or dizziness.
H411	Toxic to aquatic life with long lasting effects.

Supplemental Label Elements

Contains Amines, polyethylenepoly-, tetraethylenepentamine fraction and maleic anhydride. May produce an allergic reaction.

Precautionary statements

P201	Obtain special instructions before use.
P273	Avoid release to the environment.
P280	Wear protective gloves: > 8 hours (breakthrough time): Viton®; 1 – 4 hours (breakthrough time): nitrile rubber. Wear eye or face protection: Recommended: splash goggles. Wear protective clothing.
P261	Avoid breathing vapour.
P391	Collect spillage.
P308 + P313	IF exposed or concerned: Get medical advice or attention.
P304 + P312	IF INHALED: Call a POISON CENTER or doctor if you feel unwell.
P301 + P310 + P331	IF SWALLOWED: Immediately call a POISON CENTER or doctor. Do NOT induce vomiting.
P403 + P233	Store in a well-ventilated place. Keep container tightly closed.
P501	Dispose of contents and container in accordance with all local, regional, national and international regulations.

Hazardous ingredients Hydrocarbons C10, aromatics, >1% naphthalene, [Solvent naphtha (petroleum), heavy arom.]; naphthalene.

Special Packaging Requirements

Containers to be fitted with child resistant fastenings	Not Applicable
Tactile warning of danger	Not Applicable

2.3 Other hazards

This mixture does not contain any substances that are assessed to be a PBT or a vPvB.

3.2 Mixtures

This product is a mixture.

Component	Identifiers	Concentration	Classification	Type
Hydrocarbons C10, aromatics, >1% naphthalene, [Solvent naphtha (petroleum), heavy arom.]	REACH #: 01-2119463588-24 EC: 919-284-0 CAS: 64742-94-5	≥50 - ≤75	STOT SE 3, H336 Asp. Tox. 1, H304 Aquatic Chronic 2, H411 EUH066	[1] [2]
naphthalene	EC: 202-049-5 CAS: 91-20-3 Index: 601-052-00-2	≤10	Acute Tox. 4, H302 Carc. 2, H351 Aquatic Acute 1, H400 Aquatic Chronic 1, H410 ATE [Oral] = 490 mg/kg M [Acute] = 1 M [Chronic] = 1	[1] [2]
1,2,4-trimethylbenzene	EC: 202-436-9 CAS: 95-63-6 Index: 601-043-00-3	≤3	Flam. Liq. 3, H226 Acute Tox. 4, H332 Skin Irrit. 2, H315 Eye Irrit. 2, H319 STOT SE 3, H335 Aquatic Chronic 2, H411 ATE [Inhalation (vapours)] = 11 mg/l	[1] [2]
Hydrocarbons C10, Aromatics, <1% Naphthalene, [Solvent naphtha (petroleum), heavy arom.]	REACH #: 01-2119463583-34 EC: 918-811-1 CAS: 64742-94-5 Index: 649-424-00-3	≤3	STOT SE 3, H336 Asp. Tox. 1, H304 Aquatic Chronic 2, H411 EUH066	[1] [2]

Amines, polyethylenepoly-, tetraethylenepentamine fraction	REACH #: 01-2119487290-37 EC: 203-986-2 CAS: 112-57-2 Index: 612-060-00-0	≤0.3	Acute Tox. 4, H302 Acute Tox. 4, H312 Skin Corr. 1B, H314 Eye Irrit. 1, H319 Skin Sens. 1, H317 Aquatic Chronic 2, H411 ATE [Oral] = 500 mg/kg ATE [Dermal] = 1260 mg/kg	[1]
maleic anhydride	REACH #: 01-2119472428-31 EC: 203-571-6 CAS: 108-31-6 Index: 607-096-00-9	<0.001	Aquatic Chronic 2, H411 Acute Tox. 4, H302 Skin Corr. 1B, H314 Eye Dam. 1, H318 Resp. Sens. 1, H334 Skin Sens. 1A, H317 STOT RE 1, H372 (respiratory system) (inhalation) EUH071 ATE [Oral] = 400 mg/kg Skin Sens. 1, H317: C ≥ 0.001%	[1]

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

Additional CAS # used in National Inventories

Solvent naphtha (petroleum), heavy arom. - CAS: 64742-94-5, EC: 919-284-0

naphthalene - CAS: 91-20-3, EC: 202-049-5

1,2,4-trimethylbenzene - CAS: 95-63-6, EC: 202-436-9

Solvent naphtha (petroleum), heavy arom. - CAS: 64742-94-5, EC: 918-811-1

Polyalkylenepolyamine - CAS: 112-57-2, EC: 203-986-2

Type

[1] Substance classified with a health or environmental hazard

[2] Substance with a workplace exposure limit

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

Our REACH (pre-) registrations DO NOT cover the following:

1. The manufacture of these products by our company outside the EU unless covered by the Only Representative provisions, and

2. The importation of these products into Europe by other companies. Re-importation by other companies is not covered by our (pre-) registrations

Customers and other third parties importing and/or re-importing our products into Europe will need either:

- Their own (pre-) registration for substances contained in the imported product, or constituent monomers (imported above 1 tonne per year and >2% by weight) in the case of imported polymers, or
- In the case of importation only, to make use of the "Only Representative" provisions, if available.

SECTION 4: FIRST AID MEASURES

4.1 Description of first aid measures

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 centre or doctor. 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. In case of inhalation of decomposition products in a fire, symptoms may be delayed. The exposed person may need to be kept under medical surveillance for 48 hours.

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.

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.

Ingestion: Get medical attention immediately. Call a poison centre or physician. Remove dentures if any. Wash out mouth with water. Stop if the exposed person feels sick as vomiting may be dangerous. Remove victim to fresh air and keep at rest in a position comfortable for breathing. 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: No known significant effects or critical hazards.

Inhalation: Can cause central nervous system (CNS) depression. May cause drowsiness or dizziness.

Skin contact: No known significant effects or critical hazards.

Ingestion: Can cause central nervous system (CNS) depression. May be fatal if swallowed and enters airways.

Over-exposure signs/symptoms

Eye contact: No specific data.

Inhalation: Adverse symptoms may include the following: nausea or vomiting, headache, drowsiness/fatigue, dizziness/vertigo, unconsciousness.

Skin contact: No specific data.

Ingestion: Adverse symptoms may include the following: nausea or vomiting.

4.3 Indication of any immediate medical attention and special treatment needed

Notes to physician: In case of inhalation of decomposition products in a fire, symptoms may be delayed. The exposed person may need to be kept under medical surveillance for 48 hours.

SECTION 5: FIREFIGHTING MEASURES

5.1 Extinguishing media

Suitable extinguishing media: Use an extinguishing agent appropriate for the surrounding fire.

Unsuitable extinguishing media: None known.

5.2 Special hazards arising from the substance or mixture: In a fire or if heated, a pressure increase will occur and the container may burst. 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, nitrogen oxides.

5.3 Advice for firefighters

Special protective actions for firefighters: 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.

Special protective equipment for firefighters: Firefighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode. Clothing for firefighters (including helmets, protective boots and gloves) conforming to European standard EN 469 will provide a basic level of protection for chemical incidents

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. 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 materials for containment and cleaning up:

Small spill: Stop leak if without risk. Move containers from spill area. Absorb with an inert 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. 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. Dispose of via a licensed waste disposal contractor. Contaminated absorbent material may pose the same hazard as the spilt product. 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.

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. Do not handle until all safety precautions have been read and understood. Do not get in eyes or on skin or clothing. Do not ingest. Avoid breathing vapour or mist. Avoid release to the environment. Use only with adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Keep in the original container or an approved alternative made from a compatible material, kept tightly closed when not in use. 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.

7.2 Conditions for safe storage, including any incompatibilities:

Storage: Store in accordance with local regulations. Store in a dry, cool and well-ventilated area, away from incompatible materials (see Section 10). Store locked up. 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.

Seveso Directive - Reporting thresholds

Danger criteria

Category	Notification and MAPP threshold	Safety report threshold
E2	200 tonnes	500 tonnes

7.3 Specific end use(s): No information available.

SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1 Control parameters

Occupational exposure limits

Product/ingredient name	Exposure limit values
Hydrocarbons, C10, aromatics, >1% naphthalene [Solvent naphtha (petroleum), heavy arom.]	Supplier/Manufacturer (Europe, 2015). EU HSPA (RCP Aromatic solvents 180 - 215): 151 mg/m^3 8 hours.
naphthalene	EU OEL (Europe, 1/2022) TWA 8 hours: 10 ppm. TWA 8 hours: 50 mg/m^3.
1,2,4-trimethylbenzene	EU OEL (Europe, 1/2022) TWA 8 hours: 20 ppm. TWA 8 hours: 100 mg/m^3.
Hydrocarbons C10, Aromatics, <1% Naphthalene, [Solvent naphtha (petroleum), heavy arom.]	Supplier/Manufacturer (Europe, 2015). EU HSPA (RCP Aromatic solvents 180 - 215): 151 mg/m^3 8 hours.

Biological exposure indices: No exposure indices known.

Recommended monitoring procedures: 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.

DNELs/DMELs

Product/Ingredient Name	Type	Exposure	Value/Notation	Population	Effects
Hydrocarbons C10, Aromatics, <1% Naphthalene, [Solvent naphtha (petroleum), heavy arom.]	DNEL	Long term Dermal	12.5 mg/ kg bw/day	Workers	Systemic
	DNEL	Long term Inhalation	151 mg/m^3	Workers	Systemic
	DNEL	Long term Dermal	7.5 mg/kg bw/day	Consumers	Systemic
	DNEL	Long term Inhalation	32 mg/m^3	Consumers	Systemic
	DNEL	Long term Oral	7.5 mg/kg bw/day	Consumers	Systemic
	DNEL	Long term Oral	2.1 mg/kg bw/day	General population	Systemic
	DMEL	Long term Inhalation	3.25 mg/m^3	Workers	Systemic
	DNEL	Long term Inhalation	10.2 mg/m^3	General population	Systemic
	DMEL	Long term Dermal	23.4 mg/ kg bw/day	Workers	Systemic
	DMEL	Long term Dermal	42.4 mg/ kg bw/day	General population	Systemic
Hydrocarbons, C10, aromatics, >1% naphthalene [Solvent naphtha (petroleum), heavy arom.]	DNEL	Long term Dermal	12.5 mg/ kg bw/day	Workers	Systemic
	DNEL	Long term Inhalation	151 mg/m^3	Workers	Systemic
	DNEL	Long term Dermal	7.5 mg/kg bw/day	General population	Systemic
	DNEL	Long term Inhalation	32 mg/m^3	General population	Systemic
	DNEL	Long term Oral	7.5 mg/kg bw/day	General population	Systemic
	DNEL	Long term Oral	0.03 mg/kg bw/day	General population	Systemic
	DNEL	Long term Dermal	0.28 mg/kg bw/day	General population	Systemic
	DNEL	Long term Inhalation	0.69 mg/m^3	General population	Local
	DNEL	Long term Inhalation	0.69 mg/m^3	General population	Systemic

	DNEL	Long term Dermal	0.95 mg/ kg bw/day	Workers	Systemic
	DNEL	Long term Inhalation	2.31 mg/m^3	Workers	Local
	DNEL	Long term Inhalation	2.31 mg/m^3	Workers	Systemic
	DNEL	Short term Oral	25.6 mg/kg bw/day	General population	Systemic
	DNEL	Short term Inhalation	143.5 mg/m^3	General population	Local
	DNEL	Short term Inhalation	160.23 mg/m^3	Workers	Local
	DNEL	Short term Inhalation	226 mg/m^3	General population	Systemic
	DNEL	Short term Inhalation	384 mg/m^3	Workers	Systemic
1,2,4-trimethylbenzene	DNEL	Short term Inhalation	100 mg/m^3	Workers	Systemic
	DNEL	Short term Inhalation	100 mg/m^3	Workers	Local
	DNEL	Long term Dermal	16171 mg/ kg bw/day	Workers	Systemic
	DNEL	Long term Inhalation	100 mg/m^3	Workers	Local
	DNEL	Long term Inhalation	100 mg/m^3	Workers	Systemic
	DNEL	Short term Inhalation	29.4 mg/m^3	General population - Consumers	Systemic
	DNEL	Short term Inhalation	29.4 mg/m^3	General population - Consumers	Local
	DNEL	Long term Dermal	9512 mg/ kg bw/day	General population - Consumers	Systemic
	DNEL	Long term Inhalation	29.4 mg/m^3	General population - Consumers	Systemic
	DNEL	Long term Oral	15 mg/ kg bw/day	General population -	Systemic

				Consumers	
	DNEL	Long term Inhalation	29.4 mg/m^3	General population - Consumers	Local
	DNEL	Long term Oral	15 mg/ kg bw/day	General population	Systemic
	DNEL	Short term Inhalation	29.4 mg/m^3	General population	Local
	DNEL	Long term Inhalation	29.4 mg/m^3	General population	Local
	DNEL	Short term Inhalation	29.4 mg/m^3	General population	Systemic
	DNEL	Long term Inhalation	29.4 mg/m^3	General population	Systemic
	DNEL	Long term Dermal	9512 mg/ kg bw/day	General population	Systemic
naphthalene	DNEL	Long term Dermal	3.57 mg/ kg bw/day	Workers	Systemic
	DNEL	Long term Inhalation	25 mg/m^3	Workers	Systemic
	DNEL	Long term Inhalation	25 mg/m^3	Workers	Local
Amines, polyethylenepoly-, tetraethylenepentamine fraction	DNEL	Short term Inhalation	6940 mg/m^3	Workers	Systemic
	DNEL	Long term Dermal	0.74 mg/ kg bw/day	Workers	Systemic
	DNEL	Long term Inhalation	1.29 mg/m^3	Workers	Systemic
	DNEL	Short term Dermal	10 mg/ kg bw/day	General population - Consumers	Systemic
	DNEL	Short term Inhalation	2071 mg/m^3	General population - Consumers	Systemic
	DNEL	Short term Oral	26 mg/ kg bw/day	General population - Consumers	Systemic
	DNEL	Short term Oral	1.29 mg/cm^2	General population - Consumers	Local

	DNEL	Long term Dermal	0.32 mg/ kg bw/day	General population - Consumers	Systemic
	DNEL	Long term Inhalation	0.38 mg/m^3	General population - Consumers	Systemic
	DNEL	Long term Oral	0.53 mg/ kg bw/day	General population - Consumers	Systemic
	DNEL	Long term Dermal	0.56 mg/cm^2	General population - Consumers	Local
maleic anhydride	DNEL	Long term Inhalation	0.05 mg/m^3	General population	Systemic
	DNEL	Long term Oral	0.06 mg/ kg bw/day	General population	Systemic
	DNEL	Long term Inhalation	0.08 mg/m^3	General population	Local
	DNEL	Long term Inhalation	0.081 mg/m^3	Workers	Local
	DNEL	Long term Inhalation	0.081 mg/m^3	Workers	Systemic
	DNEL	Short term Oral	0.1 mg/ kg bw/day	General population	Systemic
	DNEL	Short term Dermal	0.1 mg/cm^2	General population	Systemic
	DNEL	Long term Dermal	0.1 mg/cm^2	General population	Systemic
	DNEL	Short term Dermal	0.2 mg/cm^2	Workers	Systemic
	DNEL	Long term Dermal	0.2 mg/cm^2	Workers	Systemic
	DNEL	Short term Inhalation	0.2 mg/m^3	Workers	Local
	DNEL	Short term Inhalation	0.2 mg/m^3	Workers	Systemic

PNECs

Product/ingredient name	Type	Compartment Detail	Value
1,2,4-trimethylbenzene	PNEC	Fresh water	0.12 mg/l
	PNEC	Marine	0.12 mg/l
	PNEC	Sewage treatment plant	2.41 mg/l
	PNEC	Fresh water sediment	13.56 mg/kg dwt
	PNEC	Marine water sediment	13.56 mg/kg dwt
	PNEC	Soil	2.34 mg/kg dwt
naphthalene	PNEC	Fresh water	2.4 µg/l
	PNEC	Marine	0.24 µg/l
	PNEC	Sewage treatment plant	2.9 mg/l
	PNEC	Fresh water sediment	67.2 µg/kg dwt
	PNEC	Marine water sediment	67.2 µg/kg dwt
	PNEC	Soil	53.3 µg/kg dwt
Amines, polyethylenepoly-, tetraethylenepentamine fraction	PNEC	Fresh water	6.8 µg/l
	PNEC	Marine	0.68 µg/l
	PNEC	Sewage treatment plant	9.73 mg/l
	PNEC	Fresh water sediment	3.43 mg/kg dwt
	PNEC	Marine water sediment	0.343 mg/kg dwt
	PNEC	Soil	0.683 mg/kg dwt

8.2 Exposure controls

Engineering controls: Use only with adequate ventilation. Use process enclosures, local exhaust controls ventilation or other engineering controls to keep worker exposure to airborne contaminants below any recommended or statutory limits.

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. Recommended: splash goggles.

Hand protection: Chemical-resistant, impervious gloves complying with an approved standard should be always worn when handling chemical products if a risk assessment indicates this is necessary. Considering the parameters specified by the glove manufacturer, check during use that the gloves are still retaining their protective properties. It should be noted that the time to breakthrough for any glove material may be different for different glove manufacturers. In the case of mixtures, consisting of several substances, the protection time of the gloves cannot be accurately estimated. > 8 hours (breakthrough time): Viton® 1 - 4 hours (breakthrough time): nitrile rubber.

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.

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: Based on the hazard and potential for exposure, select a respirator that meets the appropriate standard or certification. Respirators must be used according to a respiratory protection program to ensure proper fitting, training, and other important aspects of use. Recommended: organic vapour filter (Type A).

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 [clear]
Colour	Amber
Odour	Aromatic. Hydrocarbon.
Odour Threshold	No data available
pH	No data available
Melting point/range	Not applicable
Freezing point	No data available
Initial boiling point and boiling range	No data available
Flash point	Closed cup: 63.5°C (146.3°F) [Pensky-Martens.]
Flammability	No data available
Upper/Lower explosion limit	No data available
Vapour Pressure	No data available
Relative Vapour Density	No data available
Relative Density	No data available
Density	0.9 g/cm^3 [15°C (59°F)]
Solubility	No data available
Partition coefficient: n- octanol/water	No data available
Auto-ignition temperature	No data available
Decomposition temperature	No data available
Viscosity	Dynamic (room temperature): Not available.
	Kinematic (room temperature): 5 mm^2/s (5 cSt)
	Kinematic (40°C (104°F)): 4 mm^2/s (4 cSt)
Explosive properties	No data available
Oxidizing properties	No data available
Pour Point	< -39 °C
Median particle size	No data available

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: No specific data.

10.5 Incompatible materials: Reactive or incompatible with the following materials: oxidising materials.

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

SECTION 11: TOXICOLOGICAL INFORMATION

11.1 Information on toxicological effects

There are no data available on the mixture itself. The mixture has been assessed following the conventional method of the CLP Regulation (EC) No 1272/2008 and is classified for toxicological properties accordingly. See Sections 2 and 3 for details.

Exposure to component solvent vapour concentrations in excess of the stated occupational exposure limit may result in adverse health effects such as mucous membrane and respiratory system irritation and adverse effects on the kidneys, liver and central nervous system. Symptoms and signs include headache, dizziness, fatigue, muscular weakness, drowsiness and, in extreme cases, loss of consciousness.

Solvents may cause some of the above effects by absorption through the skin. Repeated or prolonged contact with the mixture may cause removal of natural fat from the skin, resulting in non-allergic contact dermatitis and absorption through the skin.

If splashed in the eyes, the liquid may cause irritation and reversible damage.

Ingestion may cause nausea, diarrhoea and vomiting.

This takes into account, where known, delayed and immediate effects and also chronic effects of components from short-term and long-term exposure by oral, inhalation and dermal routes of exposure and eye contact.

Contains Amines, polyethylenepoly-, tetraethylenepentamine fraction, maleic anhydride. May produce an allergic reaction.

Acute toxicity Estimates (ATE)

Product/ingredient name	Oral (mg/kg)	Dermal (mg/kg)	Inhalation (gases) (ppm)	Inhalation (vapours) (mg/l)	Inhalation (dusts and mists) (mg/l)
CarbonClear™	6135.8	N/A	N/A	544.5	N/A
naphthalene	490	N/A	N/A	N/A	N/A
1,2,4-trimethylbenzene		N/A	N/A	11	N/A
Amines, polyethylenepoly-, tetraethylenepentamine fraction	500	1260	N/A	N/A	N/A
maleic anhydride	400	2620	N/A	N/A	N/A

Acute Toxicity

Product/Ingredient	Species	Result Type	Dose	Toxic Effects
Hydrocarbons C10, Aromatics, <1% Naphthalene, [Solvent naphtha (petroleum), heavy arom.]	Rat	LC50 Inhalation Vapour	> 590 mg/m^3 4 hours	-
	Rabbit	LD50 Dermal	> 2ml/kg	Olfaction - Other changes Eye - Other Other - Hair
	Rabbit	LD50 Dermal	> 2000 mg/kg	Behavioral - Somnolence (general depressed activity) Behavioral - Changes in motor activity (specific assay) Behavioral - Irritability
	Rat	LDLo Oral	5ml/kg	Olfaction - Other changes Eye - Other Other - Hair
Hydrocarbons, C10, aromatics, >1% naphthalene [Solvent naphtha (petroleum), heavy arom.]	Rat	LC50 Inhalation Vapour	> 590 mg/m^3 4 hours	-
	Rabbit	LD50 Dermal	> 2ml/kg	Behavioral - Somnolence (general depressed activity) Behavioral - Changes in motor activity (specific assay) Behavioral - Irritability
	Rabbit	LD50 Dermal	> 2000mg/kg	Behavioral - Somnolence (general depressed activity) Behavioral - Changes in motor activity (specific assay) Behavioral - Irritability
	Rat	LDLo Oral	5 ml/kg	Olfaction - Other changes Eye - Other Other - Hair
naphthalene	Rat	LC50 Inhalation Vapour	> 340 mg/m^3 1 hour	-

	Rabbit	LD50 Dermal	> 2000 mg/kg	-
	Rat	LD50 Oral	490 mg/kg	-
Amines, polyethylenepoly-, tetraethylenepentamine fraction	Rat	LD50 Dermal	1260 mg/kg	-
	Rat	LD50 Oral	2100 to 3990 mg/kg	-
maleic anhydride	Rat	LD50 Oral	400mg/kg	-
	Rabbit	LD50 Dermal	2620 mg/kg	-

Irritation/Corrosion:

Product/Ingredient	Species	Result	Conclusion
Hydrocarbons, C10, - aromatics, >1% naphthalene [Solvent naphtha (petroleum), heavy arom.]	Rabbit	Skin – mild irritant	Prolonged or repeated contact can defat the skin and lead to irritation, cracking and/or dermatitis. Slightly irritating to the skin.
Hydrocarbons C10, - Aromatics, <1% Naphthalene, [Solvent naphtha (petroleum), heavy arom.]	Rabbit	Skin – mild irritant Duration of treatment/exposure: 24 hours Amount/concentration applied: 500 microliters	Prolonged or repeated contact can defat the skin and lead to irritation, cracking and/or dermatitis. Slightly irritating to the skin.
Amines, polyethylenepoly-, tetraethylenepentamine fraction	Rabbit	Skin – severe irritant	Corrosive to the skin.

Serious eye damage/eye irritation:

Product/Ingredient	Species	Result	Conclusion
Hydrocarbons, C10, - aromatics, >1% naphthalene [Solvent naphtha (petroleum), heavy arom.]	Mammal – species unspecified	Eyes – mild irritant	-
Hydrocarbons C10, - Aromatics, <1% Naphthalene, [Solvent naphtha (petroleum), heavy arom.]	Mammal – species unspecified	Eyes – mild irritant	-
Amines, polyethylenepoly-, tetraethylenepentamine fraction	Rabbit	Eyes – moderate irritant	Corrosive to eyes.
maleic anhydride	Rabbit	Eyes – severe irritant Amount/concentration applied: 1 Percent	-

Respiratory corrosion/irritation: Not available.

Respiratory or skin sensitization:

Product/Ingredient	Species	Result	Conclusion
Amines, polyethylenepoly-, tetraethylenepentamine fraction	Guinea pig	Skin – sensitising	-

Germ Cell Mutagenicity:

Product/Ingredient	Species	Result	Conclusion
Amines, polyethylenepoly-, tetraethylenepentamine fraction	In vivo – Mammalian-Animal	Negative	-

Carcinogenicity: Not available

Reproductive Toxicity:

Product/Ingredient	Species	Result	Conclusion
Amines, polyethylenepoly-, tetraethylenepentamine fraction	Mammal – species unspecified	Oral 970 Developmental: Equivocal	-
	Mammal – species unspecified	Dermal 161 Developmental: Equivocal	-

Specific target organ toxicity (single exposure):

Product/Ingredient	Category	Route of Exposure	Target Organs
Hydrocarbons, C10, - aromatics, >1% naphthalene [Solvent naphtha (petroleum), heavy arom.]	Category 3	-	Narcotic effects
Hydrocarbons C10, - Aromatics, <1% Naphthalene, [Solvent naphtha (petroleum), heavy arom.]	Category 3	-	Narcotic effects
1,2,4-trimethylbenzene	Category 3	-	Respiratory tract irritation

Information on likely routes of exposure: Not available.

Potential acute health effects

Eye contact: No known significant effects or critical hazards.

Inhalation: Can cause central nervous system (CNS) depression. May cause drowsiness or dizziness.

Skin Contact: No known significant effects or critical hazards.

Ingestion: Can cause central nervous system (CNS) depression. May be fatal if swallowed and enters airways.

Symptoms related to the physical, chemical and toxicological characteristics

Eye contact: No specific data.

Inhalation: Adverse symptoms may include the following: nausea or vomiting, headache, drowsiness/fatigue, dizziness/vertigo, unconsciousness.

Skin Contact: No specific data.

Ingestion: Adverse symptoms may include the following: nausea or vomiting.

Delayed and immediate effects as well as 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.

General: No known significant effects or critical hazards.

Carcinogenicity: Suspected of causing cancer. Risk of cancer depends on duration and level of exposure.

Mutagenicity: No known significant effects or critical hazards.

11.1 Information on other hazards

11.2.1 Endocrine disrupting properties: The product does not meet the criteria to be considered as having endocrine disrupting properties according to the criteria set out in either Regulation (EC) No. 1907/2006 or Regulation (EC) No 1272/2008.

11.2.2 Other information: Not available.

SECTION 12: ECOLOGICAL INFORMATION

There are no data available on the mixture itself.

Do not allow to enter drains or watercourses.

The mixture has been assessed following the summation method of the CLP Regulation (EC) No 1272/2008 and is classified for eco-toxicological properties accordingly. See Sections 2 and 3 for details.

12.1 Toxicity

Product/Ingredient	Species	Exposure	Result
Hydrocarbons C10, - Aromatics, <1% Naphthalene, [Solvent naphtha (petroleum), heavy arom.]	Algae	72 hours	Acute EC50 1 to 3 mg/l
	Daphnia	48 hours	Acute EC50 3 to 10 mg/l
	Fish	96 hours	Acute LC50 2 to 5 mg/l
Hydrocarbons, C10, - aromatics, >1%	Algae	72 hours	Acute EC50 1 to 3 mg/l
	Daphnia	48 hours	Acute EC50 3 to 10 mg/l

naphthalene [Solvent naphtha (petroleum), heavy arom.]	Fish	96 hours	Acute LC50 2 to 5 mg/l
1,2,4-trimethylbenzene	Fish - Tilapia - Tilapia zillii	96 hours	Acute LC50 22.4 mg/l Fresh water Effect: Mortality
	Crustaceans - Scud - Elasmopus pectenicrus - Adult	48 hours	Acute LC50 4910 µg/l Marine water Effect: Mortality
naphthalene	Daphnia - Water flea - Daphnia magna Age < 24 hours	48 hours	Acute EC50 1.96 mg/l Fresh water Effect: Mortality
	Crustaceans - Daggerblade grass shrimp - Palaemonetes pugio	48 hours	Acute LC50 2350 µg/l Marine water Effect: Mortality
	Fish - Oncorhynchus mykiss	96 hours	Acute LC50 1.6 mg/l Effect: Mortality
	Daphnia - Water flea - Daphnia magna Age < 24 hours	48 hours	Acute US EPA 1.6 ppm Fresh water Effect: Intoxication
	Fish - Mozambique tilapia - Oreochromis mossambicus Age: 4 months; Size: 5.4 cm; Weight: 5.5 g	60 days	Chronic – NOEC 1.5 mg/l Fresh water Effect: Growth
Amines, polyethylenepoly-, tetraethylenepentamine fraction	Algae	72 hours	Acute EC50 6.8 mg/l
	Daphnia	48 hours	Acute EC50 24.1mg/l
	Fish	96 hours	Acute LC50 420 mg/l
	Algae	-	Acute NOEC 0.5 mg/l
maleic anhydride	Fish - Western mosquitofish - Gambusia affinis - Adult	96 hours	Acute LC50 230 ppm Fresh water Effect: Mortality

12.2 Persistence and degradability

Product/Ingredient	Aquatic half-life	Photolysis	Biodegradability
Hydrocarbons C10, Aromatics, <1% Naphthalene, [Solvent naphtha (petroleum), heavy arom.]	-	-	Inherent
Hydrocarbons, C10, aromatics,	-	-	Inherent

>1% naphthalene [Solvent naphtha (petroleum), heavy arom.]			
Amines, polyethylenepoly-, tetraethylenepentamine fraction	-	-	Not readily

12.3 Bioaccumulative potential

Product/Ingredient	$LogP_{ow}$	BCF	Potential
Hydrocarbons C10, Aromatics, <1% Naphthalene, [Solvent naphtha (petroleum), heavy arom.]	2.8 to 6.5	<100	Low
Hydrocarbons, C10, aromatics, >1% naphthalene [Solvent naphtha (petroleum), heavy arom.]	-	<100	Low
1,2,4-trimethylbenzene	3.63	243	Low
naphthalene	3.4	36.5 to 168	Low
Amines, polyethylenepoly-, tetraethylenepentamine fraction	-3.16	-	Low
maleic anhydride	-2.78	-	Low

12.4 Mobility in soil

Soil/water partition coefficient : Not available

Mobility: Not available

12.5 Results of PBT and vPvB assessment

PBT: Not applicable

vPvB: Not applicable

12.6 Endocrine disrupting properties

The product does not meet the criteria to be considered as having endocrine disrupting properties according to the criteria set out in either Regulation (EC) No. 1907/2006 or Regulation (EC) No 1272/2008.

12.7 Other adverse effects

No known significant effects or critical hazards.

SECTION 13: DISPOSAL CONSIDERATIONS

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 always 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: The classification of the product may meet the criteria for a hazardous waste.

Packaging

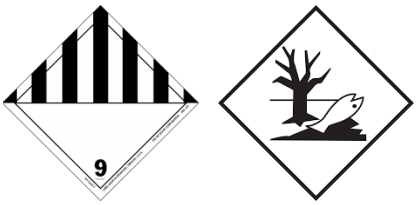
Methods of disposal: The generation of waste should be avoided or minimised wherever possible. Waste packaging should be recycled. Incineration or landfill should only be considered when recycling is not feasible.

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. Avoid dispersal of spilt material and runoff and contact with soil, waterways, drains and sewers.

SECTION 14: TRANSPORT INFORMATION

Classification for ROAD and Rail transport (ADR/RID):

14.1 UN number	UN 3082
14.2 UN proper shipping name	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (Solvent naphtha (petroleum), heavy arom., naphthalene)
14.3 Transport hazard class(es)	9



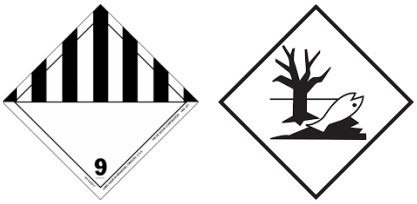
14.4 Packing group	III
14.5 Environmental group	Environmental hazards: Yes. This product is not regulated as a dangerous good when transported in sizes of ≤5 L or ≤5 kg, provided the packagings meet the general provisions of 4.1.1.1, 4.1.1.2 and 4. 1.1.4 to 4.1.1.8.
14.6 Special precautions for user	Hazard identification number: 90 Limited quantity: 5 L Special provisions: 274, 335, 601, 375 Tunnel code: (-)

Classification for Inland Waterways transport (ADN):

14.1 UN number	UN 3082

14.2 UN proper shipping name ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (Solvent naphtha (petroleum), heavy arom., naphthalene)

14.3 Transport hazard class(es) 9



14.4 Packing group |||

14.5 Environmental group Environmental hazards: Yes.
This product is not regulated as a dangerous good when transported in sizes of ≤5 L or ≤5 kg, provided the packagings meet the general provisions of 4.1.1.1, 4.1.1.2 and 4. 1.1.4 to 4.1.1.8.

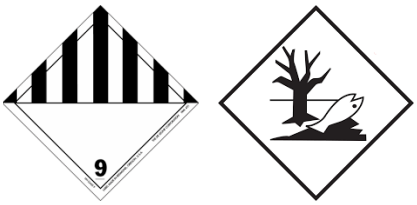
14.6 Special precautions for user Special provisions: 274, 335, 375, 601

Classification for Maritime transport (IMDG):

14.1 UN number UN 3082

14.2 UN proper shipping name ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (Solvent naphtha (petroleum), heavy arom., naphthalene). Marine pollutant (Solvent naphtha (petroleum), heavy arom., naphthalene)

14.3 Transport hazard class(es) 9



14.4 Packing group |||

14.5 Environmental group Environmental hazards: Yes.
This product is not regulated as a dangerous good when transported in sizes of ≤5 L or ≤5 kg, provided the packagings meet the general provisions of 4.1.1.1, 4.1.1.2 and 4. 1.1.4 to 4.1.1.8.

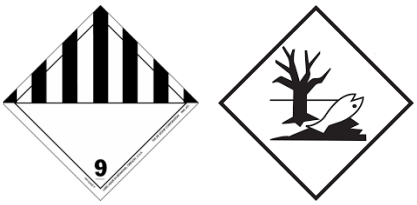
14.6 Special precautions for user Emergency schedules: (EmS) F-A, S-F
Special provisions: 274, 335, 969

Classification for AIR transport (IATA):

14.1 UN number UN 3082

14.2 UN proper shipping name Environmentally hazardous substance, liquid, n.o.s. (Solvent naphtha (petroleum), heavy arom., naphthalene)

14.3 Transport hazard class(es) 9



14.4 Packing group	III
14.5 Environmental group	Environmental hazards: Yes.
14.6 Special precautions for user	No data available

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)

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

Product/ingredient name	%	Designation [Usage]
CarbonClear	≥ 90	3

Other EU regulations

VOC

The provisions of Directive 2004/42/EC on VOC apply to this product. Refer to the product label and/or technical data sheet for further information.

VOC for Ready-for-Use Mixture

Not available.

Industrial emissions (integrated pollution prevention and control) - Air

Not listed.

Industrial emissions (integrated pollution prevention and control) - Water

Not listed.

Explosive precursors

Not applicable.

Seveso Directive - Reporting thresholds (in tonnes)

Danger criteria

Category	Notification and MAPP threshold	Safety report threshold
E2	200	500

Ozone depleting substances (EU 2024/590)

Not listed.

Prior Informed Consent (PIC) (649/2012/EU)

Not listed.

Persistent Organic Pollutants

Annex	Ingredient name	Status
Annex III	polycyclic aromatic hydrocarbons	Listed

Chemical Weapons Convention List Schedule I Chemicals: Not listed.

Chemical Weapons Convention List Schedule II Chemicals: Not listed.

Chemical Weapons Convention List Schedule III Chemicals: Not listed.

International Lists

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.

EU REACH Status: Please contact your supplier for information on the REACH status of this material.

Japan inventory: All components are listed or exempted.

Korea REACH Status: Please contact your supplier for information on the REACH status of this material.

New Zealand inventory of Chemicals (NZIoC): All components are listed or exempted.

Philippines inventory (PICCS): All components are listed or exempted.

Taiwan REACH Status: Please contact your supplier for information on the REACH status of this material.

United States inventory (TSCA 8b): All components are listed or exempted.

15.2 Chemical safety assessment

This product contains substances for which Chemical Safety Assessments are still required. Not to be used for hydraulic fracking applications.

SECTION 16: OTHER INFORMATION

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
Asp. Tox. 1, H304	Calculation method
Carc. 2, H351	Calculation method

STOT SE 3, H336	Calculation method
Aquatic Chronic 2, H411	Calculation method

Information Source and References

The information in this Safety Data Sheet is based on the present state of knowledge and current legislation. It provides guidance on health, safety and environmental aspects of the product and should not be construed as any guarantee of technical performance or suitability for particular applications. The product should not be used for purposes other than those shown in Section 1 without first referring to the supplier and obtaining written handling instructions. As the specific conditions of use of the product are outside the supplier's control, the user is responsible for ensuring that the requirements of relevant legislation are complied with. The information contained in this safety data sheet does not constitute the user's own assessment of workplace risks, as required by other health and safety legislation.