Safety Data Sheet

according to Regulation (EC) No. 1907/2006 (REACH)

amended by 2020/878/EU

5in1 Diesel Fuel System Treatment

Version number: 2.0
Replaces version of: 09.09.2022 (1)

Revision: 05.03.2024

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

1.1 Product identifier

Trade name	**5in1 Diesel Fuel System Treatment**
Registration number (REACH)	not relevant (mixture)
Unique formula identifier (UFI)	QCNC-EYQ9-X10C-SVUD
Product number	687004

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

Relevant identified uses	Additive Professional use Consumer uses

1.3 Details of the supplier of the safety data sheet

Maumo International BV
Kaartenmakerstraat 4
2984 CB Ridderkerk
Netherlands

Telephone: +31 (0)180 699 234
e-mail: info@maumo.nl
Website: www.maumo.nl

1.4 Emergency telephone number

Emergency information service	+31 (0)180 699 234 This number is only available during the following office hours: Mon-Fri 09:00 - 17:00

Poison centre

Country	Name	Telephone
Netherlands	Nationaal Vergiftigingen Informatie Centrum (UMC Utrecht) Uitsluitend bestemd om professionele hulpverleners te informeren bij acute vergiftigingen	+31 88 755 8000

SECTION 2: Hazards identification

2.1 Classification of the substance or mixture

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

Section	Hazard class	Category	Hazard class and category	Hazard statement
3.10	aspiration hazard	1	Asp. Tox. 1	H304
4.1C	hazardous to the aquatic environment - chronic hazard	3	Aquatic Chronic 3	H412

For full text of H-phrases: see SECTION 16

Code	Supplemental hazard information
EUH044	risk of explosion if heated under confinement
EUH066	repeated exposure may cause skin dryness or cracking

The most important adverse physicochemical, human health and environmental effects

Spillage and fire water can cause pollution of watercourses.

2.2 Label elements

Labelling according to Regulation (EC) No 1272/2008 (CLP)

- signal word: Danger

- pictograms

GHS08



- hazard statements

H304	May be fatal if swallowed and enters airways.
H412	Harmful to aquatic life with long lasting effects.

- precautionary statements

P101	If medical advice is needed, have product container or label at hand.
P102	Keep out of reach of children.
P273	Avoid release to the environment.
P301+P310	IF SWALLOWED: Immediately call a POISON CENTER/doctor.
P331	Do NOT induce vomiting.
P405	Store locked up.
P501	Dispose of contents/container in accordance with local/regional/national/international regulations.

- supplemental hazard information

EUH044	Risk of explosion if heated under confinement.
EUH066	Repeated exposure may cause skin dryness or cracking.

Child-resistant fastening: yes

Tactile warning of danger: yes

- hazardous ingredients for labelling

Contains: Hydrocarbons, C10-C13, n-alkanes, isoalkanes, cyclics, < 2% aromatics.

2.3 Other hazards

This material is combustible, but will not ignite readily.

Results of PBT and vPvB assessment

Does not contain a PBT-/vPvB-substance at a concentration of ≥ 0,1%.

Endocrine disrupting properties

Does not contain an endocrine disruptor (ED) at a concentration of ≥ 0,1%.

SECTION 3: Composition/information on ingredients

3.1 Substances

Not relevant (mixture).

3.2 Mixtures

The product does not contain (other) ingredients which are classified according to present knowledge of the supplier and contribute to the classification of the product and hence require reporting in this section.

Name of substance	Identifier	Wt%	Classification acc. to GHS	Pictograms	Notes
Hydrocarbons, C10-C13, n-alkanes, isoalkanes, cyclics, < 2% aromatics	EC No 918-481-9 REACH Reg. No 01-2119457273-39-xxxx	≥ 50	Asp. Tox. 1 / H304 EUH066		

Name of substance	Identifier	Wt%	Classification acc. to GHS	Pictograms	Notes
2-Ethylhexyl nitrate	CAS No 27247-96-7 EC No 248-363-6 REACH Reg. No 01-2119539586-27-xxxx	5 – 10	Acute Tox. 4 / H302 Acute Tox. 4 / H312 Acute Tox. 4 / H332 Aquatic Chronic 2 / H411 EUH044 EUH066		
2-Ethyl-1-hexanol	CAS No 104-76-7 EC No 203-234-3 REACH Reg. No 01-2119487289-20-xxxx	< 1	Acute Tox. 4 / H332 Skin Irrit. 2 / H315 Eye Irrit. 2 / H319 STOT SE 3 / H335		IOELV

Notes
IOELV: Substance with a community indicative occupational exposure limit value

Name of substance	Identifier	Specific Conc. Limits	M-Factors	ATE	Exposure route
2-Ethylhexyl nitrate	CAS No 27247-96-7 EC No 248-363-6	-	-	500 $^{mg}/_{kg}$ 1.100 $^{mg}/_{kg}$ 11 $^{mg}/_{l}$/4h	oral dermal inhalation: vapour
2-Ethyl-1-hexanol	CAS No 104-76-7 EC No 203-234-3	-	-	>11 $^{mg}/_{l}$/4h	inhalation: vapour

Remarks

All the percentages given are percentages by weight unless stated otherwise. For full text of H-phrases: see SECTION 16.

SECTION 4: First aid measures

4.1 Description of first aid measures

General notes

Do not leave affected person unattended. Remove victim out of the danger area. In case of unconsciousness place person in the recovery position. Never give anything by mouth. Take off immediately all contaminated clothing. In all cases of doubt, or when symptoms persist, seek medical advice.

Following inhalation

Provide fresh air. If breathing is irregular or stopped, immediately seek medical assistance and start first aid actions. In case of respiratory tract irritation, consult a physician.

Following skin contact

Wash with plenty of soap and water. Do NOT use solvents or thinners. If skin irritation or rash occurs: Get medical advice/attention.

Following eye contact

Irrigate copiously with clean, fresh water for at least 15 minutes, holding the eyelids apart. Remove contact lenses, if present and easy to do. Continue rinsing. If eye irritation persists: Get medical advice/attention.

Following ingestion

Immediately call a POISON CENTER/doctor. Rinse mouth with water (only if the person is conscious). Do NOT induce vomiting. In case of vomiting keep the head low so that stomach contents cannot enter the lungs. Small amounts of liquid aspirated into the lungs during ingestion or from vomiting may cause chemical pneumonitis. Symptoms may develop several hours following exposure; medical observation therefore necessary for at least 48 hours.

4.2 Most important symptoms and effects, both acute and delayed

Headache. Methemoglobinemia. Aspiration hazard.

4.3 Indication of any immediate medical attention and special treatment needed

For specialist advice physicians should contact the poison centre.

SECTION 5: Firefighting measures

5.1 Extinguishing media

Suitable extinguishing media

Water spray; Alcohol resistant foam; Dry extinguishing powder; Carbon dioxide (CO2);
Co-ordinate firefighting measures to the fire surroundings.

Unsuitable extinguishing media

Water jet.

5.2 Special hazards arising from the substance or mixture

Hazardous combustion products

During fire hazardous fumes/smoke could be produced. Carbon monoxide (CO). Carbon dioxide (CO2).

5.3 Advice for firefighters

In case of fire and/or explosion do not breathe fumes. Co-ordinate firefighting measures to the fire surroundings. Keep containers cool with water spray. Do not allow firefighting water to enter drains or water courses. Collect contaminated firefighting water separately. Fight fire with normal precautions from a reasonable distance.

Special protective equipment for firefighters

Self-contained breathing apparatus (EN 133). Standard protective clothing for firefighters.

SECTION 6: Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures

For non-emergency personnel

Remove persons to safety. Ventilate affected area.

For emergency responders

Wear breathing apparatus if exposed to vapours/dust/spray/gases. Use personal protective equipment as required.

6.2 Environmental precautions

Keep away from drains, surface and ground water. Retain contaminated washing water and dispose of it. If substance has entered a water course or sewer, inform the responsible authority.

6.3 Methods and material for containment and cleaning up

Advice on how to contain a spill

Covering of drains.

Advice on how to clean up a spill

Wipe up with absorbent material (e.g. cloth, fleece). Absorb with liquid-binding material (sand, diatomite, diatomaceous earth, acid binder, universal binder, sawdust). Clean with cleaning agents, do not use solvents.

Appropriate containment techniques

Use of adsorbent materials.

Other information relating to spills and releases

Place in appropriate containers for disposal. Ventilate affected area.

6.4 Reference to other sections

Hazardous combustion products: see section 5. Personal protective equipment: see section 8. Incompatible materials: see section 10. Disposal considerations: see section 13.

SECTION 7: Handling and storage

7.1 Precautions for safe handling

Recommendations

- measures to prevent fire as well as aerosol and dust generation

Use local and general ventilation. Use only in well-ventilated areas.

Advice on general occupational hygiene

Wash hands after use. Do not eat, drink and smoke in work areas. Remove contaminated clothing and protective equipment before entering eating areas. Never keep food or drink in the vicinity of chemicals. Never place chemicals in containers that are normally used for food or drink. Keep away from food, drink and animal feedingstuffs.

7.2 Conditions for safe storage, including any incompatibilities

Managing of associated risks

- flammability hazards

Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.

- incompatible substances or mixtures

Keep away from alkalis, oxidising substances, acids, reducing agents.

Control of effects

Protect against external exposure, such as

High temperatures. UV-radiation/sunlight.

Consideration of other advice

Store in a well-ventilated place. Keep container tightly closed.

- specific designs for storage rooms or vessels
- storage temperature

Recommended storage temperature: 15 – 25 °C

- packaging compatibilities

Keep only in original container.

7.3 Specific end use(s)

There is no additional information.

SECTION 8: Exposure controls/personal protection

8.1 Control parameters

National limit values

Occupational exposure limit values (Workplace Exposure Limits)

Country	Name of agent	CAS No	Identifier	TWA [ppm]	TWA [mg/m³]	STEL [ppm]	STEL [mg/m³]	Notation	Source
EU	2-ethylhexan-1-ol	104-76-7	IOELV	1	5,4				2017/164/EU
NL	2-ethylhexan-1-ol	104-76-7	GW	1	5,4				SC-SZW

Notation

STEL	short-term exposure limit: a limit value above which exposure should not occur and which is related to a 15-minute period (unless otherwise specified)
TWA	time-weighted average (long-term exposure limit): measured or calculated in relation to a reference period of 8 hours time-weighted average (unless otherwise specified)

Relevant DNELs/DMELs/PNECs and other threshold levels

Relevant DNELs of components of the mixture

Name of substance	CAS No	End-point	Threshold level	Protection goal, route of exposure	Used in	Exposure time
2-Ethylhexyl nitrate	27247-96-7	DNEL	0,35 mg/m³	human, inhalatory	worker (industry)	chronic - systemic effects
2-Ethylhexyl nitrate	27247-96-7	DNEL	1 mg/kg bw/day	human, dermal	worker (industry)	chronic - systemic effects
2-Ethylhexyl nitrate	27247-96-7	DNEL	44 µg/cm²	human, dermal	worker (industry)	chronic - local effects
2-Ethylhexyl nitrate	27247-96-7	DNEL	87 µg/m³	human, inhalatory	consumer (private households)	chronic - systemic effects
2-Ethylhexyl nitrate	27247-96-7	DNEL	0,52 mg/kg bw/day	human, dermal	consumer (private households)	chronic - systemic effects
2-Ethylhexyl nitrate	27247-96-7	DNEL	22 µg/cm²	human, dermal	consumer (private households)	chronic - local effects
2-Ethylhexyl nitrate	27247-96-7	DNEL	25 µg/kg	human, oral	consumer (private households)	chronic - systemic effects
2-Ethyl-1-hexanol	104-76-7	DNEL	12,8 mg/m³	human, inhalatory	worker (industry)	chronic - systemic effects
2-Ethyl-1-hexanol	104-76-7	DNEL	53,2 mg/m³	human, inhalatory	worker (industry)	chronic - local effects
2-Ethyl-1-hexanol	104-76-7	DNEL	53,2 mg/m³	human, inhalatory	worker (industry)	acute - local effects
2-Ethyl-1-hexanol	104-76-7	DNEL	23 mg/kg bw/day	human, dermal	worker (industry)	chronic - systemic effects
2-Ethyl-1-hexanol	104-76-7	DNEL	2,3 mg/m³	human, inhalatory	consumer (private households)	chronic - systemic effects
2-Ethyl-1-hexanol	104-76-7	DNEL	26,6 mg/m³	human, inhalatory	consumer (private households)	chronic - local effects
2-Ethyl-1-hexanol	104-76-7	DNEL	26,6 mg/m³	human, inhalatory	consumer (private households)	acute - local effects
2-Ethyl-1-hexanol	104-76-7	DNEL	11,4 mg/kg bw/day	human, dermal	consumer (private households)	chronic - systemic effects
2-Ethyl-1-hexanol	104-76-7	DNEL	1,1 mg/kg bw/day	human, oral	consumer (private households)	chronic - systemic effects

Relevant PNECs of components

Name of substance	CAS No	End-point	Threshold level	Organism	Environmental compartment	Exposure time
2-Ethylhexyl nitrate	27247-96-7	PNEC	0,08 µg/l	aquatic organisms	marine water	short-term (single instance)

Relevant PNECs of components

Name of substance	CAS No	End-point	Threshold level	Organism	Environmental compartment	Exposure time
2-Ethylhexyl nitrate	27247-96-7	PNEC	0,83 µg/l	aquatic organisms	freshwater	short-term (single instance)
2-Ethylhexyl nitrate	27247-96-7	PNEC	10 mg/l	aquatic organisms	sewage treatment plant (STP)	short-term (single instance)
2-Ethylhexyl nitrate	27247-96-7	PNEC	0,47 mg/kg	aquatic organisms	freshwater sediment	short-term (single instance)
2-Ethylhexyl nitrate	27247-96-7	PNEC	47 µg/kg	aquatic organisms	marine sediment	short-term (single instance)
2-Ethylhexyl nitrate	27247-96-7	PNEC	93,5 µg/kg	terrestrial organisms	soil	short-term (single instance)
2-Ethyl-1-hexanol	104-76-7	PNEC	0,017 mg/l	aquatic organisms	freshwater	short-term (single instance)
2-Ethyl-1-hexanol	104-76-7	PNEC	0,002 mg/l	aquatic organisms	marine water	short-term (single instance)
2-Ethyl-1-hexanol	104-76-7	PNEC	10 mg/l	aquatic organisms	sewage treatment plant (STP)	short-term (single instance)
2-Ethyl-1-hexanol	104-76-7	PNEC	0,284 mg/kg	aquatic organisms	freshwater sediment	short-term (single instance)
2-Ethyl-1-hexanol	104-76-7	PNEC	0,028 mg/kg	aquatic organisms	marine sediment	short-term (single instance)
2-Ethyl-1-hexanol	104-76-7	PNEC	0,047 mg/kg	terrestrial organisms	soil	short-term (single instance)

8.2 Exposure controls

Appropriate engineering controls

General ventilation. Provide eyewash stations and safety showers at the workplace.

Individual protection measures (personal protective equipment)

Eye/face protection



Use safety goggle with side protection (EN 166).

Skin protection



Protective clothing (EN 340 & EN ISO 13688).

Hand protection



Wear suitable gloves. Check leak-tightness/impermeability prior to use. For special purposes, it is recommended to check the resistance to chemicals of the protective gloves mentioned above together with the supplier of these gloves. Chemical protection gloves are suitable, which are tested according to EN 374. The selection of the suitable gloves does not only depend on the material, but also on further marks of quality and varies from manufacturer to manufacturer. As the product is a preparation of several substances, the resistance of the glove material can not be calculated in advance and has therefore to be checked prior to the application.

- type of material

Nitrile rubber

- material thickness

Use gloves with a minimum material thickness: ≥ 0,38 mm.

- breakthrough time of the glove material

Use gloves with a minimum breakthrough time of the glove material: >240 minutes (permeation: level 5).

- other protection measures

Take recovery periods for skin regeneration. Preventive skin protection (barrier creams/ointments) is recommended. Wash hands thoroughly after handling.

Respiratory protection

In case of inadequate ventilation wear respiratory protection. Full face mask/half mask/quarter mask (EN 136/140). Type: A (against organic gases and vapours with a boiling point of > 65 °C , colour code: Brown).

Environmental exposure controls

Take appropriate precautions to avoid uncontrolled release into the environment. Keep away from drains, surface and ground water.

SECTION 9: Physical and chemical properties

9.1 Information on basic physical and chemical properties

Physical state	liquid
Colour	brown
Odour	solvent
Melting point/freezing point	-54 °C at 1 atm calculated value, referring to a component of the mixture
Boiling point or initial boiling point and boiling range	100 °C at 1.013 hPa calculated value, referring to a component of the mixture
Flammability	this material is combustible, but will not ignite readily
Lower and upper explosion limit	LEL: 0,6 vol% / UEL: 7 vol% calculated value, referring to a component of the mixture
Flash point	>61 °C
Auto-ignition temperature	>200 °C (auto-ignition temperature (liquids and gases)) calculated value, referring to a component of the mixture
Decomposition temperature	no data available
pH (value)	not determined
Kinematic viscosity	<7 mm^2/s at 40 °C
Solubility	insoluble in water

Partition coefficient n-octanol/water (log value)	this information is not available

Vapour pressure	0,05 kPa at 20 °C calculated value, referring to a component of the mixture

Density and/or relative density

Density	0,8039 $^{g}/_{cm^3}$ at 20 °C
Relative vapour density	information on this property is not available

Particle characteristics	not relevant (liquid)

9.2 Other information

Information with regard to physical hazard classes	hazard classes acc. to GHS (physical hazards): not relevant
Other safety characteristics	there is no additional information

SECTION 10: Stability and reactivity

10.1 Reactivity

This material is not reactive under normal ambient conditions.

If heated:

Danger of explosion.

10.2 Chemical stability

The material is stable under normal ambient and anticipated storage and handling conditions of temperature and pressure.

10.3 Possibility of hazardous reactions

Risk of explosion if heated under confinement.

10.4 Conditions to avoid

There are no specific conditions known which have to be avoided.

10.5 Incompatible materials

Acids, bases, oxidisers, reducing agents.

10.6 Hazardous decomposition products

Reasonably anticipated hazardous decomposition products produced as a result of use, storage, spill and heating are not known. Hazardous combustion products: see section 5.

SECTION 11: Toxicological information

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

Test data are not available for the complete mixture.

Classification procedure

The method for classification of the mixture is based on ingredients of the mixture (additivity formula).

Classification according to GHS (1272/2008/EC, CLP)

Acute toxicity

Shall not be classified as acutely toxic.

Acute toxicity estimate (ATE) of components			
Name of substance	**CAS No**	**Exposure route**	**ATE**
2-Ethylhexyl nitrate	27247-96-7	oral	500 $^{mg}/_{kg}$
2-Ethylhexyl nitrate	27247-96-7	dermal	1.100 $^{mg}/_{kg}$
2-Ethylhexyl nitrate	27247-96-7	inhalation: vapour	11 $^{mg}/_{l}$/4h
2-Ethyl-1-hexanol	104-76-7	inhalation: vapour	>11 $^{mg}/_{l}$/4h

Acute toxicity of components					
Name of substance	**CAS No**	**Exposure route**	**Endpoint**	**Value**	**Species**
Hydrocarbons, C10-C13, n-alkanes, isoalkanes, cyclics, < 2% aromatics		inhalation: dust/ mist	LC50	≥6.100 $^{mg}/_{m^3}$/ 4h	rat
Hydrocarbons, C10-C13, n-alkanes, isoalkanes, cyclics, < 2% aromatics		oral	LD50	>5.000 $^{mg}/_{kg}$	rat
Hydrocarbons, C10-C13, n-alkanes, isoalkanes, cyclics, < 2% aromatics		dermal	LD50	>2.000 $^{mg}/_{kg}$	rat
2-Ethyl-1-hexanol	104-76-7	oral	LD50	2.047 $^{mg}/_{kg}$	rat
2-Ethyl-1-hexanol	104-76-7	inhalation: vapour	LC50	>0,89 – ≤5,3 $^{mg}/_{l}$/4h	rat

Skin corrosion/irritation

Shall not be classified as corrosive/irritant to skin.

Serious eye damage/eye irritation

Shall not be classified as seriously damaging to the eye or eye irritant.

Respiratory or skin sensitisation

Shall not be classified as a respiratory or skin sensitiser.

Germ cell mutagenicity

Shall not be classified as germ cell mutagenic.

Carcinogenicity

Shall not be classified as carcinogenic.

Reproductive toxicity

Shall not be classified as a reproductive toxicant.

Specific target organ toxicity - single exposure

Shall not be classified as a specific target organ toxicant (single exposure).

Specific target organ toxicity - repeated exposure

Shall not be classified as a specific target organ toxicant (repeated exposure).

Aspiration hazard

May be fatal if swallowed and enters airways.

11.2 Information on other hazards

Endocrine disrupting properties

Does not contain an endocrine disruptor (ED) at a concentration of ≥ 0,1%.

Other information

There is no additional information.

SECTION 12: Ecological information

12.1 Toxicity

Harmful to aquatic life with long lasting effects.

Aquatic toxicity (acute) of components of the mixture

Name of substance	CAS No	Endpoint	Value	Species	Exposure time
Hydrocarbons, C10-C13, n-alkanes, isoalkanes, cyclics, < 2% aromatics		LL50	>1.000 mg/l	fish	24 h
Hydrocarbons, C10-C13, n-alkanes, isoalkanes, cyclics, < 2% aromatics		EL50	>1.000 mg/l	aquatic invertebrates	24 h
Hydrocarbons, C10-C13, n-alkanes, isoalkanes, cyclics, < 2% aromatics		NOELR	32 mg/l	aquatic invertebrates	96 h
2-Ethylhexyl nitrate	27247-96-7	LC50	2 mg/l	fish	96 h
2-Ethylhexyl nitrate	27247-96-7	EC50	0,83 mg/l	aquatic invertebrates	48 h
2-Ethylhexyl nitrate	27247-96-7	ErC50	>2,53 mg/l	algae	72 h
2-Ethylhexyl nitrate	27247-96-7	NOEC	1,52 mg/l	fish	96 h
2-Ethylhexyl nitrate	27247-96-7	LOEC	2,53 mg/l	algae	72 h
2-Ethylhexyl nitrate	27247-96-7	growth rate (ErCx) 10%	2,22 mg/l	algae	72 h
2-Ethylhexyl nitrate	27247-96-7	growth (EbCx) 10%	1,93 mg/l	algae	72 h
2-Ethyl-1-hexanol	104-76-7	LC50	17,1 mg/l	fish	96 h
2-Ethyl-1-hexanol	104-76-7	EC50	39 mg/l	aquatic invertebrates	48 h
2-Ethyl-1-hexanol	104-76-7	ErC50	16,6 mg/l	algae	72 h
2-Ethyl-1-hexanol	104-76-7	NOEC	14 mg/l	fish	96 h
2-Ethyl-1-hexanol	104-76-7	growth (EbCx) 10%	3,2 mg/l	algae	72 h
2-Ethyl-1-hexanol	104-76-7	growth rate (ErCx) 10%	5,3 mg/l	algae	72 h

Aquatic toxicity (chronic) of components of the mixture

Name of substance	CAS No	Endpoint	Value	Species	Exposure time
Hydrocarbons, C10-C13, n-alkanes, isoalkanes, cyclics, < 2% aromatics		EL50	>1.000 mg/l	aquatic invertebrates	24 h

Aquatic toxicity (chronic) of components of the mixture

Name of substance	CAS No	Endpoint	Value	Species	Exposure time
Hydrocarbons, C10-C13, n-alkanes, isoalkanes, cyclics, < 2% aromatics		LL50	>1.000 mg/l	fish	24 h
Hydrocarbons, C10-C13, n-alkanes, isoalkanes, cyclics, < 2% aromatics		NOELR	>10,2 mg/l	aquatic invertebrates	21 d
Hydrocarbons, C10-C13, n-alkanes, isoalkanes, cyclics, < 2% aromatics		growth (EbCx) 10%	>1.000 mg/l	microorganisms	3 h
2-Ethylhexyl nitrate	27247-96-7	EC50	>1.000 mg/l	microorganisms	3 h

12.2 Persistence and degradability

Degradability of components

Name of substance	CAS No	Process	Degradation rate	Time	Method
Hydrocarbons, C10-C13, n-alkanes, isoalkanes, cyclics, < 2% aromatics		carbon dioxide generation	0 %	3 d	
Hydrocarbons, C10-C13, n-alkanes, isoalkanes, cyclics, < 2% aromatics		oxygen depletion	31,3 %	28 d	
2-Ethylhexyl nitrate	27247-96-7	carbon dioxide generation	0 %	28 d	

12.3 Bioaccumulative potential

Bioaccumulative potential of components

Name of substance	CAS No	BCF	Log KOW	BOD5/COD
Hydrocarbons, C10-C13, n-alkanes, isoalkanes, cyclics, < 2% aromatics		≥44,6 – ≤5.362	≥3,17 – ≤7,22	
2-Ethylhexyl nitrate	27247-96-7	1.332	5,24 (pH value: 7,1, 40 °C)	
2-Ethyl-1-hexanol	104-76-7		2,9 (pH value: 7, 25 °C)	

12.4 Mobility in soil

Data are not available.

12.5 Results of PBT and vPvB assessment

Does not contain a PBT-/vPvB-substance at a concentration of ≥ 0,1%.

12.6 Endocrine disrupting properties

Does not contain an endocrine disruptor (ED) at a concentration of ≥ 0,1%.

12.7 Other adverse effects

Data are not available.

SECTION 13: Disposal considerations

13.1 Waste treatment methods

Sewage disposal-relevant information

Do not empty into drains. Avoid release to the environment.

Waste treatment of containers/packagings

Completely emptied packages can be recycled. Handle contaminated packages in the same way as the substance itself.

Remarks

Please consider the relevant national or regional provisions. Waste shall be separated into the categories that can be handled separately by the local or national waste management facilities.

SECTION 14: Transport information

14.1	**UN number or ID number**	not subject to transport regulations
14.2	**UN proper shipping name**	not relevant
14.3	**Transport hazard class(es)**	none
14.4	**Packing group**	not assigned
14.5	**Environmental hazards**	non-environmentally hazardous acc. to the dangerous goods regulations

14.6 Special precautions for user

There is no additional information.

14.7 Maritime transport in bulk according to IMO instruments

No data available.

Additional information for each of the UN Model Regulations

Transport of dangerous goods by road, rail and inland waterway (ADR/RID/ADN) - additional information

Not subject to ADR, RID and ADN.

International Maritime Dangerous Goods Code (IMDG) - additional information

Not subject to IMDG.

International Civil Aviation Organization (ICAO-IATA/DGR) - additional information

Not subject to ICAO-IATA.

SECTION 15: Regulatory information

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

Relevant provisions of the European Union (EU)

Restrictions according to REACH, Annex XVII

Name	Name acc. to inventory	Restriction	No
5in1 Diesel Fuel System Treatment	this product meets the criteria for classification in accordance with Regulation No 1272/2008/EC	R3	3
2-Ethyl-1-hexanol	substances in tattoo inks and permanent make-up	R75	75

Legend

R3 1. Shall not be used in:

Legend

- ornamental articles intended to produce light or colour effects by means of different phases, for example in ornamental lamps and ash-trays,
- tricks and jokes,
- games for one or more participants, or any article intended to be used as such, even with ornamental aspects,
2. Articles not complying with paragraph 1 shall not be placed on the market.
3. Shall not be placed on the market if they contain a colouring agent, unless required for fiscal reasons, or perfume, or both, if they:
— can be used as fuel in decorative oil lamps for supply to the general public, and
— present an aspiration hazard and are labelled with H304.
4. Decorative oil lamps for supply to the general public shall not be placed on the market unless they conform to the European Standard on Decorative oil lamps (EN 14059) adopted by the European Committee for Standardisation (CEN).
5. Without prejudice to the implementation of other Union provisions relating to the classification, labelling and packaging of substances and mixtures, suppliers shall ensure, before the placing on the market, that the following requirements are met:
(a) lamp oils, labelled with H304, intended for supply to the general public are visibly, legibly and indelibly marked as follows: “Keep lamps filled with this liquid out of the reach of children”; and, by 1 December 2010, “Just a sip of lamp oil – or even sucking the wick of lamps – may lead to life-threatening lung damage”;
(b) grill lighter fluids, labelled with H304, intended for supply to the general public are legibly and indelibly marked by 1 December 2010 as follows: ‘Just a sip of grill lighter fluid may lead to life threatening lung damage’;
(c) lamps oils and grill lighters, labelled with H304, intended for supply to the general public are packaged in black opaque containers not exceeding 1 litre by 1 December 2010.’;

Legend

R75 1. Shall not be placed on the market in mixtures for use for tattooing purposes, and mixtures containing any such substances shall not be used for tattooing purposes, after 4 January 2022 if the substance or substances in question is or are present in the following circumstances:
(a) in the case of a substance classified in Part 3 of Annex VI to Regulation (EC) No 1272/2008 as carcinogen category 1A, 1B or 2, or germ cell mutagen category 1A, 1B or 2, the substance is present in the mixture in a concentration equal to or greater than 0,00005 % by weight;
(b) in the case of a substance classified in Part 3 of Annex VI to Regulation (EC) No 1272/2008 as reproductive toxicant category 1A, 1B or 2, the substance is present in the mixture in a concentration equal to or greater than 0,001 % by weight;
(c) in the case of a substance classified in Part 3 of Annex VI to Regulation (EC) No 1272/2008 as skin sensitiser category 1, 1A or 1B, the substance is present in the mixture in a concentration equal to or greater than 0,001 % by weight;
(d) in the case of a substance classified in Part 3 of Annex VI to Regulation (EC) No 1272/2008 as skin corrosive category 1, 1A, 1B or 1C or skin irritant category 2, or as serious eye damage category 1 or eye irritant category 2, the substance is present in the mixture in a concentration equal to or greater than:
(i) 0,1 % by weight, if the substance is used solely as a pH regulator;
(ii) 0,01 % by weight, in all other cases;
(e) in the case of a substance listed in Annex II to Regulation (EC) No 1223/2009 (*1), the substance is present in the mixture in a concentration equal to or greater than 0,00005 % by weight;
(f) in the case of a substance for which a condition of one or more of the following kinds is specified in column g (Product type, Body parts) of the table in Annex IV to Regulation (EC) No 1223/2009, the substance is present in the mixture in a concentration equal to or greater than 0,00005 % by weight:
(i) “Rinse-off products”;
(ii) “Not to be used in products applied on mucous membranes”;
(iii) “Not to be used in eye products”;
(g) in the case of a substance for which a condition is specified in column h (Maximum concentration in ready for use preparation) or column i (Other) of the table in Annex IV to Regulation (EC) No 1223/2009, the substance is present in the mixture in a concentration, or in some other way, that does not accord with the condition specified in that column;
(h) in the case of a substance listed in Appendix 13 to this Annex, the substance is present in the mixture in a concentration equal to or greater than the concentration limit specified for that substance in that Appendix.
2. For the purposes of this entry use of a mixture “for tattooing purposes” means injection or introduction of the mixture into a person’s skin, mucous membrane or eyeball, by any process or procedure (including procedures commonly referred to as permanent make-up, cosmetic tattooing, micro-blading and micro-pigmentation), with the aim of making a mark or design on his or her body.
3. If a substance not listed in Appendix 13 falls within more than one of points (a) to (g) of paragraph 1, the strictest concentration limit laid down in the points in question shall apply to that substance. If a substance listed in Appendix 13 also falls within one or more of points (a) to (g) of paragraph 1, the concentration limit laid down in point (h) of paragraph 1 shall apply to that substance.
4. By way of derogation, paragraph 1 shall not apply to the following substances until 4 January 2023:
(a) Pigment Blue 15:3 (CI 74160, EC No 205-685-1, CAS No 147-14-8);
(b) Pigment Green 7 (CI 74260, EC No 215-524-7, CAS No 1328-53-6).
5. If Part 3 of Annex VI to Regulation (EC) No 1272/2008 is amended after 4 January 2021 to classify or re-classify a substance such that the substance then becomes caught by point (a), (b), (c) or (d) of paragraph 1 of this entry, or such that it then falls within a different one of those points from the one within which it fell previously, and the date of application of that new or revised classification is after the date referred to in paragraph 1 or, as the case may be, paragraph 4 of this entry, that amendment shall, for the purposes of applying this entry to that substance, be treated as taking effect on the date of application of that new or revised classification.
6. If Annex II or Annex IV to Regulation (EC) No 1223/2009 is amended after 4 January 2021 to list or change the listing of a substance such that the substance then becomes caught by point (e), (f) or (g) of paragraph 1 of this entry, or such that it then falls within a different one of those points from the one within which it fell previously, and the amendment takes effect after the date referred to in paragraph 1 or, as the case may be, paragraph 4 of this entry, that amendment shall, for the purposes of applying this entry to that substance, be treated as taking effect from the date falling 18 months after entry into force of the act by which that amendment was made.
7. Suppliers placing a mixture on the market for use for tattooing purposes shall ensure that, after 4 January 2022, the mixture is marked with the following information:
(a) the statement “Mixture for use in tattoos or permanent make-up”;
(b) a reference number to uniquely identify the batch;
(c) the list of ingredients in accordance with the nomenclature established in the glossary of common ingredient names pursuant to Article 33 of Regulation (EC) No 1223/2009, or in the absence of a common ingredient name, the IUPAC name. In the absence of a common ingredient name or IUPAC name, the CAS and EC number. Ingredients shall be listed in descending order by weight or volume of the ingredients at the time of formulation. “Ingredient” means any substance added during the process of formulation and present in the mixture for use for tattooing purposes. Impurities shall not be regarded as ingredients. If the name of a substance, used as ingredient within the meaning of this entry, is already required to be stated on the label in accordance with Regulation (EC) No 1272/2008, that ingredient does not need to be marked in accordance with this Regulation;
(d) the additional statement “pH regulator” for substances falling under point (d)(i) of paragraph 1;
(e) the statement "Contains nickel. Can cause allergic reactions." if the mixture contains nickel below the concentration limit specified in Appendix 13;
(f) the statement "Contains chromium (VI). Can cause allergic reactions." if the mixture contains chromium (VI) below the concentration limit specified in Appendix 13;
(g) safety instructions for use insofar as they are not already required to be stated on the label by Regulation (EC) No 1272/2008.
The information shall be clearly visible, easily legible and marked in a way that is indelible.
The information shall be written in the official language(s) of the Member State(s) where the mixture is placed on the market, unless the Member State(s) concerned provide(s) otherwise.
Where necessary because of the size of the package, the information listed in the first subparagraph, except for point (a), shall be included instead in the instructions for use.
Before using a mixture for tattooing purposes, the person using the mixture shall provide the person undergoing the procedure with the information marked on the package or included in the instructions for use pursuant to this paragraph.
8. Mixtures that do not contain the statement “Mixture for use in tattoos or permanent make-up” shall not be used for tattooing purposes.
9. This entry does not apply to substances that are gases at temperature of 20 °C and pressure of 101,3 kPa, or generate a vapour pressure of more than 300 kPa at temperature of 50 °C, with the exception of formaldehyde (CAS No 50-00-0, EC No 200-001-8).
10. This entry does not apply to the placing on the market of a mixture for use for tattooing purposes, or to the use of a mixture for tattooing purposes, when placed on the market exclusively as a medical device or an accessory to a medical device, within the meaning of Regulation (EU) 2017/745, or when used exclusively as a medical device or an accessory to a medical device, within the same meaning.

Legend

Where the placing on the market or use may not be exclusively as a medical device or an accessory to a medical device, the requirements of Regulation (EU) 2017/745 and of this Regulation shall apply cumulatively.

List of substances subject to authorisation (REACH, Annex XIV) / SVHC - candidate list

None of the ingredients are listed.

Seveso Directive

2012/18/EU (Seveso III)

No	Dangerous substance/hazard categories	Qualifying quantity (tonnes) for the application of lower and upper-tier requirements	Notes
	not assigned		

Water Framework Directive (WFD)

List of pollutants (WFD)

Name of substance	Name acc. to inventory	CAS No	Listed in	Remarks
2-Ethyl-1-hexanol	Substances and preparations, or the breakdown products of such, which have been proved to possess carcinogenic or mutagenic properties or properties which may affect steroidogenic, thyroid, reproduction or other endocrine-related functions in or via the aquatic environment		a)	

Legend

a) Indicative list of the main pollutants

Regulation (EU) 2019/1148 of the European Parliament and of the Council of 20 June 2019 on the marketing and use of explosives precursors, amending Regulation (EC) No 1907/2006 and repealing Regulation (EU) No 98/2013

None of the ingredients are listed.

National regulations (Netherlands)

SZW-lijst CMR effects

None of the ingredients are listed.

15.2 Chemical safety assessment

No Chemical Safety Assessment has been carried out for this mixture by the supplier.

SECTION 16: Other information

Indication of changes (revised safety data sheet)

Complete revision of the safety data sheet.

Abbreviations and acronyms

Abbr.	Descriptions of used abbreviations
2017/164/EU	Commission Directive establishing a fourth list of indicative occupational exposure limit values pursuant to Council Directive 98/24/EC, and amending Commission Directives 91/322/EEC, 2000/39/EC and 2009/161/EU
Acute Tox.	Acute toxicity
ADN	Accord européen relatif au transport international des marchandises dangereuses par voies de navigation intérieures (European Agreement concerning the International Carriage of Dangerous Goods by Inland Waterways)

Abbr.	Descriptions of used abbreviations
ADR	Accord relatif au transport international des marchandises dangereuses par route (Agreement concerning the International Carriage of Dangerous Goods by Road)
Aquatic Chronic	Hazardous to the aquatic environment - chronic hazard
Asp. Tox.	Aspiration hazard
ATE	Acute Toxicity Estimate
BCF	Bioconcentration factor
BOD	Biochemical Oxygen Demand
CAS	Chemical Abstracts Service (service that maintains the most comprehensive list of chemical substances)
CLP	Regulation (EC) No 1272/2008 on classification, labelling and packaging of substances and mixtures
CMR	Carcinogenic, Mutagenic or toxic for Reproduction
COD	Chemical oxygen demand
DGR	Dangerous Goods Regulations (see IATA/DGR)
DMEL	Derived Minimal Effect Level
DNEL	Derived No-Effect Level
EC50	Effective Concentration 50 %. The EC50 corresponds to the concentration of a tested substance causing 50 % changes in response (e.g. on growth) during a specified time interval
EC No	The EC Inventory (EINECS, ELINCS and the NLP-list) is the source for the seven-digit EC number, an identifier of substances commercially available within the EU (European Union)
ED	Endocrine disruptor
EINECS	European Inventory of Existing Commercial Chemical Substances
EL50	Effective Loading 50 %: the EL50 corresponds to the loading rate required to produce a response in 50% of the test organisms
ELINCS	European List of Notified Chemical Substances
ErC50	≡ EC50: in this method, that concentration of test substance which results in a 50 % reduction in either growth (EbC50) or growth rate (ErC50) relative to the control
Eye Dam.	Seriously damaging to the eye
Eye Irrit.	Irritant to the eye
GHS	"Globally Harmonized System of Classification and Labelling of Chemicals" developed by the United Nations
IATA	International Air Transport Association
IATA/DGR	Dangerous Goods Regulations (DGR) for the air transport (IATA)
ICAO	International Civil Aviation Organization
IMDG	International Maritime Dangerous Goods Code
index No	The Index number is the identification code given to the substance in Part 3 of Annex VI to Regulation (EC) No 1272/2008
IOELV	Indicative occupational exposure limit value
LC50	Lethal Concentration 50%: the LC50 corresponds to the concentration of a tested substance causing 50 % lethality during a specified time interval
LD50	Lethal Dose 50 %: the LD50 corresponds to the dose of a tested substance causing 50 % lethality during a specified time interval
LEL	Lower explosion limit (LEL)

Abbr.	Descriptions of used abbreviations
LL50	Lethal Loading 50 %: the LL50 corresponds to the loading rate causing 50 % lethality
LOEC	Lowest Observed Effect Concentration
log KOW	n-Octanol/water
NLP	No-Longer Polymer
NOEC	No Observed Effect Concentration
NOELR	No Observed Effect Loading Rate
PBT	Persistent, Bioaccumulative and Toxic
PNEC	Predicted No-Effect Concentration
ppm	Parts per million
REACH	Registration, Evaluation, Authorisation and Restriction of Chemicals
RID	Règlement concernant le transport International ferroviaire des marchandises Dangereuses (Regulations concerning the International carriage of Dangerous goods by Rail)
SC-SZW	Staatscourant: Regeling van de Minister van Sociale Zaken en Werkgelegenheid tot wijziging van de Arbeidsomstandighedenregeling
Skin Corr.	Corrosive to skin
Skin Irrit.	Irritant to skin
STEL	Short-term exposure limit
STOT SE	Specific target organ toxicity - single exposure
SVHC	Substance of Very High Concern
TWA	Time-weighted average
UEL	Upper explosion limit (UEL)
vPvB	Very Persistent and very Bioaccumulative

Key literature references and sources for data

Regulation (EC) No 1272/2008 on classification, labelling and packaging of substances and mixtures. Regulation (EC) No. 1907/2006 (REACH), amended by 2020/878/EU.

Transport of dangerous goods by road, rail and inland waterway (ADR/RID/ADN). International Maritime Dangerous Goods Code (IMDG). Dangerous Goods Regulations (DGR) for the air transport (IATA).

Classification procedure

Physical and chemical properties: The classification is based on tested mixture.
Health hazards, Environmental hazards: The method for classification of the mixture is based on ingredients of the mixture (additivity formula).

List of relevant phrases (code and full text as stated in section 2 and 3)

Code	Text
H302	Harmful if swallowed.
H304	May be fatal if swallowed and enters airways.
H312	Harmful in contact with skin.
H315	Causes skin irritation.
H319	Causes serious eye irritation.

Code	Text
H332	Harmful if inhaled.
H335	May cause respiratory irritation.
H411	Toxic to aquatic life with long lasting effects.
H412	Harmful to aquatic life with long lasting effects.

Disclaimer

This information is based upon the present state of our knowledge. This SDS has been compiled and is solely intended for this product.