



Safety data sheet according to 1907/2006/EC, Article 31

Printing date 26.08.2021

Version number 4 (replaces version 3)

Revision: 26.08.2021

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

· 1.1 Product identifier

· Product name: **Reagent DEHA Indicator Solution**

· Catalog number: 100731

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

· Application of the substance / the preparation: Reagent for water analysis

· 1.3 Details of the supplier of the safety data sheet

· Supplier:

Vecom Marine B.V.
Mozartlaan 3
3144 NA Maassluis
The Netherlands

phone: + 31 (0)10 5930 210
Email: sales@vecom-marine.com

· 1.4 Emergency telephone number:

Dutch Poisons Information Center (NVIC): +31 (0)88 755 8000 (24 hour service)
Only for the purpose of informing medical personnel in case of acute intoxications.
See section 4 on first aid measures.

SECTION 2: Hazards identification

· 2.1 Classification of the substance or mixture

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

The product is not classified as hazardous according to the CLP regulation.

· 2.2 Label elements

· Labelling according to Regulation (EC) No 1272/2008 Void

· Hazard pictograms Void

· Signal word Void

· Hazard statements Void

· 2.3 Other hazards No further relevant information available.

· Results of PBT and vPvB assessment

This mixture does not contain any substances that are assessed to be persistent, bioaccumulative and toxic (PBT) or very persistent and very bioaccumulative (vPvB), according to the criteria given in Annex XIII of Regulation (EC) No. 1907/2006.

· Determination of endocrine-disrupting properties

The product does not contain substances with endocrine disrupting properties.

SECTION 3: Composition/information on ingredients

· 3.2 Mixtures

· Description: aqueous solution

· Dangerous components: Void

SECTION 4: First aid measures

· 4.1 Description of first aid measures

· General information Instantly remove any clothing soiled by the product.

· After inhalation Supply fresh air; consult doctor in case of symptoms.

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Product name: Reagent DEHA Indicator Solution

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- **After skin contact** Instantly wash with water and soap and rinse thoroughly.
- **After eye contact**
Rinse opened eye for several minutes under running water (at least 15 min). If symptoms persist, consult doctor.
- **After swallowing**
Rinse out mouth and then drink 1-2 glasses of water.
Seek medical treatment in case of complaints.
- **4.2 Most important symptoms and effects, both acute and delayed:** No further relevant information available.
- **4.3 Indication of any immediate medical attention and special treatment needed:**
No further relevant information available.

SECTION 5: Firefighting measures

- **5.1 Extinguishing media**
- **Suitable extinguishing agents** Use fire fighting measures that suit the environment.
- **5.2 Special hazards arising from the substance or mixture**
The product is not combustible.
Formation of toxic gases is possible during heating or in case of fire.
- **5.3 Advice for firefighters**
- **Protective equipment:**
Wear self-contained breathing apparatus.
Wear full protective suit.
- **Additional information**
Collect contaminated fire fighting water separately. It must not enter drains.
Dispose of fire debris and contaminated fire fighting water in accordance with official regulations.
Ambient fire may liberate hazardous vapours.

SECTION 6: Accidental release measures

- **6.1 Personal precautions, protective equipment and emergency procedures**
- **Advice for non-emergency personnel:** No special measures required.
- **Advice for emergency responders:** Protective equipment: see section 8
- **6.2 Environmental precautions:**
Do not allow product to reach sewage system or water bodies.
Dilute with much water.
- **6.3 Methods and material for containment and cleaning up:**
Ensure adequate ventilation.
Absorb with liquid-binding material (sand, diatomite, universal binders).
Dispose of contaminated material as waste according to item 13.
- **6.4 Reference to other sections**
See Section 7 for information on safe handling
See Section 8 for information on personal protection equipment.
See Section 13 for information on disposal.

SECTION 7: Handling and storage

- **7.1 Precautions for safe handling** No special precautions necessary if used correctly.
- **Advice on safe handling:** No special precautions necessary if used correctly.
- **Hygiene measures:**
The usual precautionary measures should be adhered to general rules for handling chemicals.
Do not eat, drink or smoke when using this product.
Wash hands during breaks and at the end of the work.
- **7.2 Conditions for safe storage, including any incompatibilities**
- **Requirements to be met by storerooms and containers:** Store in cool location.
- **Information about storage in one common storage facility:** Not required.
- **Further information about storage conditions:**
Protect from heat and direct sunlight.
Protect from the effects of light.
Protect from humidity and keep away from water.

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- **Recommended storage temperature:** 20°C +/- 5°C
- **7.3 Specific end use(s)** No further relevant information available.

* SECTION 8: Exposure controls/personal protection

- **8.1 Control parameters**
- **Components with limit values that require monitoring at the workplace:**
The product does not contain any relevant quantities of materials with critical values that have to be monitored at the workplace.
- **Additional information:** The lists that were valid during the compilation were used as basis.
- **8.2 Exposure controls**
- **Engineering measures:**
Technical measures and appropriate working operations should be given priority over the use of personal protective equipment. See item 7.
- **Individual protection measures, such as personal protective equipment**
Protective clothing should be selected specifically for the workplace, depending on concentration and quantity of the hazardous substances handled.
- **Eye/face protection**
Safety glasses
use against the effects of fumes / dust
- **Hand protection**
Preventive skin protection by use of skin-protecting agents is recommended.
After use of gloves apply skin-cleaning agents and skin cosmetics.
- **Material of gloves**
nitrile rubber, NBR
Recommended thickness of the material: ≥ 0.11 mm
- **Penetration time of glove material**
Value for the permeation: Level = 1 (< 10 min)
The exact break through time has to be found out by the manufacturer of the protective gloves and has to be observed.
- **Other skin protection (body protection):** Protective work clothing.
- **Breathing equipment:** Use breathing protection against the effects of fumes/dust/aerosol.
- **Recommended filter device for short term use:** Filter B
- **Environmental exposure controls** Do not allow product to reach sewage system or water bodies.

* SECTION 9: Physical and chemical properties

- **9.1 Information on basic physical and chemical properties**
- **Physical state** Fluid
- **Form:** Solution
- **Colour:** Yellowish
- **Odour:** Odourless
- **Odour threshold:** Not applicable.
- **Melting point/Freezing point:** 0°C
- **Boiling point or initial boiling point and boiling range** 100°C (CAS: 7732-18-5 water)
- **Flammability** The product is not combustible.
- **Explosive properties:** Product is not explosive.
- **Lower and upper explosion limit**
- **Lower:** Not applicable.
- **Upper:** Not applicable.
- **Flash point:** Not applicable.
- **Ignition temperature:** Not applicable.
- **Decomposition temperature:** Not determined.
- **pH** Neutral
- **Kinematic viscosity** Not determined.
- **Solubility**
- **Water:** Fully miscible
- **Partition coefficient n-octanol/water (log value)** Not applicable (mixture).
- **Vapour pressure at 20°C:** 23 hPa (CAS: 7732-18-5 water)

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Product name: Reagent DEHA Indicator Solution

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· Density and/or relative density	
· Density:	Not determined.
· Relative density:	Not determined.
· Relative gas density	Not determined.
· Particle characteristics	Not applicable (liquid).
· 9.2 Other information	
· Information with regard to physical hazard classes	
· Corrosive to metals	Void
· Other safety characteristics	
· Oxidising properties:	none
· Additional information	
· Solids content:	≤ 1 %
· Solvent content:	
· Organic solvents:	0.0 %
· Water:	≥ 99 %

SECTION 10: Stability and reactivity

- **10.1 Reactivity** see section 10.3
- **10.2 Chemical stability** Stable at ambient temperature (room temperature).
- **10.3 Possibility of hazardous reactions**
Violent reactions possible with:
The generally known reaction partners of water.
- **10.4 Conditions to avoid** No further relevant information available.
- **10.5 Incompatible materials:** No further relevant information available.
- **10.6 Hazardous decomposition products:** see section 5

* SECTION 11: Toxicological information

- **11.1 Information on hazard classes as defined in Regulation (EC) No 1272/2008**
- **Acute toxicity** Based on available data, the classification criteria are not met.
- **Skin corrosion/irritation** Based on available data, the classification criteria are not met.
- **Serious eye damage/irritation** Based on available data, the classification criteria are not met.
- **Respiratory or skin sensitisation** Based on available data, the classification criteria are not met.
- **Germ cell mutagenicity** Based on available data, the classification criteria are not met.
- **Carcinogenicity** Based on available data, the classification criteria are not met.
- **Reproductive toxicity** Based on available data, the classification criteria are not met.
- **STOT (specific target organ toxicity) -single exposure** Based on available data, the classification criteria are not met.
- **STOT (specific target organ toxicity) -repeated exposure** Based on available data, the classification criteria are not met.
- **Aspiration hazard** Based on available data, the classification criteria are not met.
- **Additional toxicological information:**
When used and handled according to specifications, the product does not have any harmful effects according to our experience and the information provided to us.
- **11.2 Information on other hazards**

· **Endocrine disrupting properties**

None of the ingredients is listed.

* SECTION 12: Ecological information

- **12.1 Toxicity**
- **Aquatic toxicity:** No further relevant information available.
- **12.2 Persistence and degradability** No further relevant information available.
- **12.3 Bioaccumulative potential** No further relevant information available.

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- **12.4 Mobility in soil** No further relevant information available.
- **12.5 Results of PBT and vPvB assessment**
This mixture does not contain any substances that are assessed to be persistent, bioaccumulative and toxic (PBT) or very persistent and very bioaccumulative (vPvB), according to the criteria given in Annex XIII of Regulation (EC) No. 1907/2006.
- **12.6 Endocrine disrupting properties** The product does not contain substances with endocrine disrupting properties.
- **12.7 Other adverse effects** Avoid transfer into the environment.
- **Water hazard:**
Do not allow product to reach ground water, water bodies or sewage system.
Danger to drinking water if even small quantities leak into soil.

* SECTION 13: Disposal considerations

- **13.1 Waste treatment methods**
- **Recommendation**
Small amounts may be diluted with plenty of water and washed away. Dispose of bigger amounts in accordance with Local Authority requirements.
- **European waste catalogue**
16 05 09 | discarded chemicals other than those mentioned in 16 05 06, 16 05 07 or 16 05 08
- **Uncleaned packagings:**
- **Recommendation:** Disposal must be made according to official regulations.
- **Recommended cleaning agent:** Water, if necessary with cleaning agent.

SECTION 14: Transport information

· 14.1 UN number or ID number	
· ADR, IMDG, IATA	Void
· 14.2 UN proper shipping name	
· ADR, IMDG, IATA	Void
· 14.3 Transport hazard class(es)	
· ADR, IMDG, IATA	
· Class	Void
· 14.4 Packing group	
· ADR, IMDG, IATA	Void
· 14.5 Environmental hazards:	
· Marine pollutant:	No
· 14.6 Special precautions for user	Not applicable.
· 14.7 Maritime transport in bulk according to IMO instruments	Not applicable.
· Transport/Additional information:	Not dangerous according to the above specifications.

* SECTION 15: Regulatory information

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

· Regulation (EU) No 649/2012 concerning the export and import of hazardous chemicals (PIC)

None of the ingredients is listed.

· Regulation (EC) No 1005/2009 on substances that deplete the ozone layer:

None of the ingredients is listed.

· REGULATION (EU) 2019/1021 on persistent organic pollutants (POP)

None of the ingredients is listed.

· LIST OF SUBSTANCES SUBJECT TO AUTHORISATION (ANNEX XIV)

None of the ingredients is listed.

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- **Substances of very high concern (SVHC) according to REACH, Article 57**
This product does not contain any substances of very high concern above the legal concentration limit of $\geq 0.1\%$ (w / w).
- **Information about limitation of use:** Not required.
- **15.2 Chemical safety assessment:** A Chemical Safety Assessment has not been carried out.

SECTION 16: Other information

These data are based on our present knowledge. However, they shall not constitute a guarantee for any specific product features and shall not establish a legally valid contractual relationship.

- **Training hints** Provide adequate information, instruction and training for operators.
- **Abbreviations and acronyms:**
 - STOT: specific target organ toxicity
 - SE: single exposure
 - RE: repeated exposure
 - EC50: half maximal effective concentration
 - IC50: half maximal inhibitory concentration
 - NOEL or NOEC: No Observed Effect Level or Concentration
 - ADR: Accord relatif au transport international des marchandises dangereuses par route (European Agreement Concerning the International Carriage of Dangerous Goods by Road)
 - RID: Règlement international concernant le transport des marchandises dangereuses par chemin de fer (Regulations Concerning the International Transport of Dangerous Goods by Rail)
 - IMDG: International Maritime Code for Dangerous Goods
 - IATA: International Air Transport Association
 - GHS: Globally Harmonised System of Classification and Labelling of Chemicals
 - EINECS: European Inventory of Existing Commercial Chemical Substances
 - ELINCS: European List of Notified Chemical Substances
 - CAS: Chemical Abstracts Service (division of the American Chemical Society)
 - PBT: Persistent, Bioaccumulative and Toxic
 - SVHC: Substances of Very High Concern
 - vPvB: very Persistent and very Bioaccumulative
- **Sources** Data arise from safety data sheets, reference works and literature.
- *** Data compared to the previous version altered.**

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

· 1.1 Product identifier

· Product name: **Reagent DEHA Test Solution**

· Catalog number: 100730E

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

· Application of the substance / the preparation: Reagent for water analysis

· 1.3 Details of the supplier of the safety data sheet

· Supplier:

Vecom Marine B.V.
Mozartlaan 3
3144 NA Maassluis
The Netherlands

phone: + 31 (0)10 5930 210
Email: sales@vecom-marine.com

· 1.4 Emergency telephone number:

Dutch Poisons Information Center (NVIC): +31 (0)88 755 8000 (24 hour service)
Only for the purpose of informing medical personnel in case of acute intoxications.
See section 4 on first aid measures.

SECTION 2: Hazards identification

· 2.1 Classification of the substance or mixture

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



GHS05 corrosion

Met. Corr. 1 H290 May be corrosive to metals.
Skin Corr. 1B H314 Causes severe skin burns and eye damage.
Eye Dam. 1 H318 Causes serious eye damage.

· 2.2 Label elements

· Labelling according to Regulation (EC) No 1272/2008 The product is classified and labelled according to the CLP regulation.

· Hazard pictograms



GHS05

· Signal word Danger

· Hazard-determining components of labelling:

nitric acid 8.5 %
iron(III) nitrate nonahydrate

· Hazard statements

H290 May be corrosive to metals.
H314 Causes severe skin burns and eye damage.

· Precautionary statements

P260 Do not breathe mist/vapours/spray.
P280 Wear protective gloves/protective clothing/eye protection.
P303+P361+P353 IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water or shower.

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P304+P340 IF INHALED: Remove person to fresh air and keep 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.

P310 Immediately call a doctor.

• **Additional information:**

EUH071 Corrosive to the respiratory tract.

• **2.3 Other hazards** No further relevant information available.

• **Results of PBT and vPvB assessment**

This mixture does not contain any substances that are assessed to be persistent, bioaccumulative and toxic (PBT) or very persistent and very bioaccumulative (vPvB), according to the criteria given in Annex XIII of Regulation (EC) No. 1907/2006.

• **Determination of endocrine-disrupting properties**

The product does not contain substances with endocrine disrupting properties.

SECTION 3: Composition/information on ingredients

• **3.2 Mixtures**

• **Description:** aqueous solution

• **Dangerous components:**

CAS: 7697-37-2 EINECS: 231-714-2 Index No: 007-004-00-1 Reg.nr.: 01-2119487297-23-XXXX	nitric acid ⚠ Ox. Liq. 2, H272; ⚠ Acute Tox. 3, H331; ⚠ Met. Corr.1, H290; Skin Corr. 1A, H314, EUH071 Specific concentration limits: Ox. Liq. 2; H272: C ≥ 99 % Ox. Liq. 3; H272: 65 % ≤ C < 99 % Skin Corr. 1A; H314: C ≥ 20 % Skin Corr. 1B; H314: 5 % ≤ C < 20 %	5–10%
CAS: 7782-61-8 EINECS: 233-899-5 Reg.nr.: 01-2119978293-27-XXXX	iron(III) nitrate nonahydrate ⚠ Ox. Sol. 3, H272; ⚠ Skin Corr. 1B, H314; Eye Dam. 1, H318	1–≤2.5%

• **Additional information** For the wording of the listed hazard phrases refer to section 16.

SECTION 4: First aid measures

• **4.1 Description of first aid measures**

• **General information** Instantly remove any clothing soiled by the product.

• **After inhalation** Supply fresh air or oxygen; call for doctor.

• **After skin contact**

Instantly wash with polyethylene glycol 400.

Instantly rinse with water.

Immediate medical treatment necessary. Failure to treat burns can prevent wounds from healing.

• **After eye contact**

Rinse opened eye for several minutes (at least 15 min) under running water.

Call a doctor immediately.

• **After swallowing**

Rinse out mouth and then drink 1-2 glasses of water.

Do not induce vomiting; instantly call for medical help.

• **4.2 Most important symptoms and effects, both acute and delayed:**

burns

strong caustic effect.

mucosal irritations, Cough, Shortness of breath

vomiting

after swallowing:

sickness

Possible damages: damage of respiratory tract

after inhalation:

cramps

bloody diarrhoea

after absorption of large amounts:

cardiovascular disorders

methaemoglobinaemia

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- **Danger**
 Danger of gastric perforation.
 Danger of impaired breathing.
 Danger of pulmonary oedema.
- **4.3 Indication of any immediate medical attention and special treatment needed:**
 If swallowed or in case of vomiting, danger of entering the lungs
 Subsequent observation for pneumonia and pulmonary oedema

SECTION 5: Firefighting measures

- **5.1 Extinguishing media**
- **Suitable extinguishing agents** Use fire fighting measures that suit the environment.
- **5.2 Special hazards arising from the substance or mixture**
 The product is not combustible.
 Formation of toxic gases is possible during heating or in case of fire.
 Can be released in case of fire:
 nitrous gases
 Nitrogen oxides (NOx)
- **5.3 Advice for firefighters**
- **Protective equipment:**
 Wear self-contained breathing apparatus.
 Wear full protective suit.
- **Additional information**
 Collect contaminated fire fighting water separately. It must not enter drains.
 Dispose of fire debris and contaminated fire fighting water in accordance with official regulations.
 Ambient fire may liberate hazardous vapours.

SECTION 6: Accidental release measures

- **6.1 Personal precautions, protective equipment and emergency procedures**
- **Advice for non-emergency personnel:**
 Wear protective equipment. Keep unprotected persons away.
 Avoid substance contact.
 Ensure adequate ventilation
- **Advice for emergency responders:** Protective equipment: see section 8
- **6.2 Environmental precautions:** Do not allow product to reach sewage system or water bodies.
- **6.3 Methods and material for containment and cleaning up:**
 Ensure adequate ventilation.
 Neutralize with diluted sodium hydroxide solution or by throwing on lime sand, lime or sodium carbonate.
 Absorb with liquid-binding material (sand, diatomite, universal binders).
 Dispose of contaminated material as waste according to item 13.
- **6.4 Reference to other sections**
 See Section 8 for information on personal protection equipment.
 See Section 13 for information on disposal.

SECTION 7: Handling and storage

- **7.1 Precautions for safe handling**
- **Advice on safe handling:**
 Ensure good ventilation/exhaustion at the workplace.
 Prevent formation of aerosols.
- **Hygiene measures:**
 Do not inhale gases / fumes / aerosols.
 Do not get in eyes, on skin, or on clothing.
 Take off immediately all contaminated clothing.
 Wash hands during breaks and at the end of the work.
 Do not eat, drink or smoke when using this product.
- **7.2 Conditions for safe storage, including any incompatibilities**
- **Requirements to be met by storerooms and containers:** Store in cool location.

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- **Information about storage in one common storage facility:**
Store away from metals.
Do not store together with alkalis (caustic solutions).
- **Further information about storage conditions:**
Keep container tightly sealed.
Protect from heat and direct sunlight.
Protect from the effects of light.
Protect from humidity and keep away from water.
- **Recommended storage temperature:** 20°C +/- 5°C
- **7.3 Specific end use(s)** No further relevant information available.

SECTION 8: Exposure controls/personal protection

· 8.1 Control parameters

- **Components with limit values that require monitoring at the workplace:**

CAS: 7697-37-2 nitric acid

WEL (Great Britain)	Short-term value: 2.6 mg/m ³ , 1 ppm
IOELV (European Union)	Short-term value: 2.6 mg/m ³ , 1 ppm

- **Regulatory information**

WEL (Great Britain): EH40/2018
IOELV (European Union): (EU) 2017/164

- **DNELs**

Derived No Effect Level (DNEL)

CAS: 7697-37-2 nitric acid

Inhalative	DNEL	1.3 mg/m ³ (Worker / long-term / local effects)
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- **Recommended monitoring procedures:**

Methods for measurement of the workplace atmosphere have to correspond to the requirements of norms DIN EN 482 and DIN EN 689.

- **Additional information:** The lists that were valid during the compilation were used as basis.

· 8.2 Exposure controls

- **Engineering measures:**

Technical measures and appropriate working operations should be given priority over the use of personal protective equipment. See item 7.

- **Individual protection measures, such as personal protective equipment**

Protective clothing should be selected specifically for the workplace, depending on concentration and quantity of the hazardous substances handled.

- **Eye/face protection** Tightly sealed safety glasses.

- **Hand protection**

Acid resistant gloves
Preventive skin protection by use of skin-protecting agents is recommended.
After use of gloves apply skin-cleaning agents and skin cosmetics.

- **Material of gloves**

nitrile rubber, NBR
Recommended thickness of the material: ≥ 0.35 mm

- **Penetration time of glove material**

Value for the permeation: Level = 1 (< 10 min)
The exact break through time has to be found out by the manufacturer of the protective gloves and has to be observed.

- **Other skin protection (body protection):** Acid resistant protective clothing

- **Breathing equipment:** Use breathing protection against the effects of fumes/dust/aerosol.

- **Recommended filter device for short term use:** Combination filter E-P2

- **Environmental exposure controls** Do not allow product to reach sewage system or water bodies.

SECTION 9: Physical and chemical properties

- **9.1 Information on basic physical and chemical properties**

- **Physical state** Fluid

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· Form:	Solution
· Colour:	Brown
· Odour:	Weak, characteristic
· Odour threshold:	CAS 7697-37-2: 0.27 ppm (anhydrous substance)
· Melting point/Freezing point:	Not determined.
· Boiling point or initial boiling point and boiling range	Not determined.
· Flammability	Not applicable.
· Explosive properties:	Product is not explosive.
· Lower and upper explosion limit	
· Lower:	Not applicable.
· Upper:	Not applicable.
· Flash point:	Not applicable.
· Ignition temperature:	Not applicable.
· Decomposition temperature:	Not determined.
· pH at 20°C	<1 Strongly acidic
· Kinematic viscosity	Not determined.
· Solubility	
· Water:	Fully miscible
· Partition coefficient n-octanol/water (log value)	Not applicable (mixture).
· Vapour pressure:	Not determined.
· Density and/or relative density	
· Density at 20°C:	1.04 g/cm ³
· Relative density:	Not determined.
· Relative gas density	Not determined.
· Particle characteristics	Not applicable (liquid).
· 9.2 Other information	
· Information with regard to physical hazard classes	
· Corrosive to metals	May be corrosive to metals.
· Metals that are corroded by the substance or mixture	Information on incompatible materials can be found in Sections 7 and 10.
· Other safety characteristics	
· Oxidising properties:	CAS 7697-37-2: is classified as oxidising. Oxidising potential
· Additional information	
· Solids content:	< 2.5 %
· Solvent content:	
· Organic solvents:	0.0 %
· Water:	> 85 %

SECTION 10: Stability and reactivity

- **10.1 Reactivity** see section 10.3
- **10.2 Chemical stability** Stable at ambient temperature (room temperature).
- **10.3 Possibility of hazardous reactions**
 Reacts with metals forming hydrogen (--> Explosive!)
 Reacts with alcohols
 Reacts with reducing agents
 Reacts with metals to form nitrous fumes and hydrogen
 Acts as an oxidizing agent on organic materials such as wood, paper and fats
 Reacts with acids and alkali (lyes).
 Reacts with ammonia (NH₃).
- **10.4 Conditions to avoid** To avoid thermal decomposition do not overheat.
- **10.5 Incompatible materials:**
 metals
 alkali metals
 combustible substances
 organic solvents
- **10.6 Hazardous decomposition products:**
 nitrous gases

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In case of fire: see section 5.

SECTION 11: Toxicological information

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

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

· LD/LC50 values that are relevant for classification:

CAS: 7697-37-2 nitric acid

Oral	LDLo	430 mg/kg (human) (IUCLID)
Inhalative	LC50/4h	>2.65 mg/l/4h (rat) (OECD 403) (Registrant, ECHA: the atmosphere consisted mainly of vapor with a small aerosol fraction of ca. 0.8%.)

CAS: 7782-61-8 iron(III) nitrate nonahydrate

Oral	LD50	3250 mg/kg (rat) (RTECS)
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· **Skin corrosion/irritation** Causes severe skin burns and eye damage.

· Serious eye damage/irritation

Causes serious eye damage.
Risk of blindness!

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

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

· **Carcinogenicity** Based on available data, the classification criteria are not met.

· **Reproductive toxicity** Based on available data, the classification criteria are not met.

· **STOT (specific target organ toxicity) -single exposure** Based on available data, the classification criteria are not met.

· **STOT (specific target organ toxicity) -repeated exposure** Based on available data, the classification criteria are not met.

· **Aspiration hazard** Based on available data, the classification criteria are not met.

· Additional toxicological information:

The following applies to soluble iron compounds: nausea and vomiting after swallowing. The absorption of large quantities is followed by cardiovascular disorders. Toxic effect on liver and kidneys.
Swallowing will lead to a strong caustic effect on mouth and throat and to the danger of perforation of esophagus and stomach.
The aerosol is corrosive to the eyes, the skin and the respiratory tract. Inhalation of aerosols may cause lung oedema.

11.2 Information on other hazards

· Endocrine disrupting properties

None of the ingredients is listed.

SECTION 12: Ecological information

12.1 Toxicity

· Aquatic toxicity:

CAS: 7697-37-2 nitric acid

LC50	72 mg/l/96h (mosquitofish) (IUCLID)
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· **12.2 Persistence and degradability** No further relevant information available.

12.3 Bioaccumulative potential

Pow = n-octanol/wasser partition coefficient
log Pow < 1 = Does not accumulate in organisms.

CAS: 7697-37-2 nitric acid

log Pow	-2.3 (.) (OECD 107)
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· **12.4 Mobility in soil** No further relevant information available.

12.5 Results of PBT and vPvB assessment

This mixture does not contain any substances that are assessed to be persistent, bioaccumulative and toxic (PBT) or very persistent and very bioaccumulative (vPvB), according to the criteria given in Annex XIII of Regulation (EC) No. 1907/2006.

· **12.6 Endocrine disrupting properties** The product does not contain substances with endocrine disrupting properties.

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· 12.7 Other adverse effects

Depending on the concentration, phosphorus and/or nitrogen compounds may contribute to the eutrophication of water supplies.
Harmful effect due to pH shift.
Forms corrosive mixtures with water even if diluted.
Avoid transfer into the environment.

· Water hazard:

Do not allow undiluted product or large quantities of it to reach ground water, water bodies or sewage system.
Must not reach sewage water or drainage ditch undiluted or unneutralised.

SECTION 13: Disposal considerations

· 13.1 Waste treatment methods

· Recommendation

Must not be disposed of together with household garbage. Do not allow product to reach sewage system.
Hand over to disposers of hazardous waste.

· European waste catalogue

16 05 07*	discarded inorganic chemicals consisting of or containing hazardous substances
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· Uncleaned packagings:

· **Recommendation:** Disposal must be made according to official regulations.

· **Recommended cleaning agent:** Water, if necessary with cleaning agent.

SECTION 14: Transport information

· 14.1 UN number or ID number

· **ADR, IMDG, IATA** UN2031

· 14.2 UN proper shipping name

· **ADR** 2031 NITRIC ACID solution
· **IMDG, IATA** NITRIC ACID solution

· 14.3 Transport hazard class(es)

· ADR



· **Class** 8 (C1) Corrosive substances.
· **Label** 8

· IMDG, IATA



· **Class** 8 Corrosive substances.
· **Label** 8

· 14.4 Packing group

· **ADR, IMDG, IATA** II

· 14.5 Environmental hazards:

Not applicable.

· 14.6 Special precautions for user

Warning: Corrosive substances.
· **Kemler Number:** 80
· **EMS Number:** F-A,S-Q
· **Segregation groups** Acids
· **Stowage Category** D

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· Segregation Code	SG6 Segregation as for class 5.1 SG16 Stow "separated from" class 4.1 SG17 Stow "separated from" class 5.1 SG19 Stow "separated from" class 7
· 14.7 Maritime transport in bulk according to IMO instruments	Not applicable.
· Transport/Additional information:	
· ADR	
· Limited quantities (LQ)	1L
· Excepted quantities (EQ)	Code: E2 Maximum net quantity per inner packaging: 30 ml Maximum net quantity per outer packaging: 500 ml
· Transport category	2
· Tunnel restriction code	E
· IMDG	
· Limited quantities (LQ)	1L
· Excepted quantities (EQ)	Code: E2 Maximum net quantity per inner packaging: 30 ml Maximum net quantity per outer packaging: 500 ml

SECTION 15: Regulatory information

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

· Regulation (EU) No 649/2012 concerning the export and import of hazardous chemicals (PIC)

None of the ingredients is listed.

· Regulation (EU) 2019/1148 on the marketing and use of explosives precursors

Acquisition, introduction, possession or use of this product by the general public is restricted by Regulation (EU) 2019/1148. All suspicious transactions, and significant disappearances and thefts should be reported to the relevant national contact point. Please see <https://ec.europa.eu>

· explosives precursors - ANNEX I

CAS: 7697-37-2 | nitric acid

· Regulation (EC) No 1005/2009 on substances that deplete the ozone layer:

None of the ingredients is listed.

· REGULATION (EU) 2019/1021 on persistent organic pollutants (POP)

None of the ingredients is listed.

· Directive 2012/18/EU (SEVESO III):

· Named dangerous substances - ANNEX I None of the ingredients is listed.

· LIST OF SUBSTANCES SUBJECT TO AUTHORISATION (ANNEX XIV)

None of the ingredients is listed.

· Substances of very high concern (SVHC) according to REACH, Article 57

This product does not contain any substances of very high concern above the legal concentration limit of $\geq 0.1\%$ (w / w).

· REGULATION (EC) No 1907/2006 ANNEX XVII Conditions of restriction: 3

· Information about limitation of use: Employment restrictions concerning young persons must be observed (94/33/EC).

· 15.2 Chemical safety assessment: A Chemical Safety Assessment has not been carried out.

SECTION 16: Other information

These data are based on our present knowledge. However, they shall not constitute a guarantee for any specific product features and shall not establish a legally valid contractual relationship.

· Training hints Provide adequate information, instruction and training for operators.

· Relevant phrases

H272 May intensify fire; oxidiser.

H290 May be corrosive to metals.

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H314 Causes severe skin burns and eye damage.
 H318 Causes serious eye damage.
 H331 Toxic if inhaled.
 EUH071 Corrosive to the respiratory tract.

· **Abbreviations and acronyms:**

STOT: specific target organ toxicity
 SE: single exposure
 RE: repeated exposure
 EC50: half maximal effective concentration
 IC50: half maximal inhibitory concentration
 NOEL or NOEC: No Observed Effect Level or Concentration
 ADR: Accord relatif au transport international des marchandises dangereuses par route (European Agreement Concerning the International Carriage of Dangerous Goods by Road)
 RID: Règlement international concernant le transport des marchandises dangereuses par chemin de fer (Regulations Concerning the International Transport of Dangerous Goods by Rail)
 IMDG: International Maritime Code for Dangerous Goods
 IATA: International Air Transport Association
 GHS: Globally Harmonised System of Classification and Labelling of Chemicals
 EINECS: European Inventory of Existing Commercial Chemical Substances
 ELINCS: European List of Notified Chemical Substances
 CAS: Chemical Abstracts Service (division of the American Chemical Society)
 DNEL: Derived No-Effect Level (REACH)
 LC50: Lethal concentration, 50 percent
 LD50: Lethal dose, 50 percent
 PBT: Persistent, Bioaccumulative and Toxic
 SVHC: Substances of Very High Concern
 vPvB: very Persistent and very Bioaccumulative
 Ox. Liq. 2: Oxidizing liquids – Category 2
 Ox. Sol. 3: Oxidizing solids – Category 3
 Met. Corr. 1: Corrosive to metals – Category 1
 Acute Tox. 3: Acute toxicity – Category 3
 Skin Corr. 1A: Skin corrosion/irritation – Category 1A
 Skin Corr. 1B: Skin corrosion/irritation – Category 1B
 Eye Dam. 1: Serious eye damage/eye irritation – Category 1

· **Sources**

Data arise from safety data sheets, reference works and literature.
 IUCLID (International Uniform Chemical Information Database)
 ECHA: European Chemicals Agency <http://echa.europa.eu>
 RTECS (Registry of Toxic Effects of Chemical Substances)

· *** Data compared to the previous version altered.**