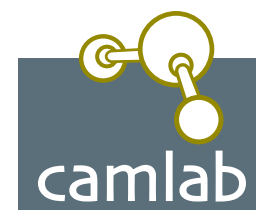


Material Safety Data Sheet

According to 91/155 EEC



Printing date 27.01.2006

Reviewed on 27.01.2006

* 1 Identification of substance:

- **Product details:** Reagent for water analysis
- **Product name:** Oxyscav 1 RGT - DEHA 1
- **Catalogue number:** CW/53.14.00
- **Supplier:**
Camlab Limited
Camlab House, Norman Way, Over, Cambridge CB4 5WE
United Kingdom
Tel: +44 (0)1954 233100
- **Informing department:** Technical Support
- **Emergency information:**
National Poisons Information Service, United kingdom
Tel: 0870 600 6266 (24 hours) • <http://www.npis.org/>

2 Composition/Data on components:

- **Chemical characterization:**
- **CAS No. Designation:**
56-40-6 glycine--iron sulphate (1:1)
- **Identification number(s):**
- **EINECS Number:** 200-272-2

* 3 Hazards identification

- **Hazard designation:** void
- **Information pertaining to particular dangers for man and environment** void

* 4 First aid measures

- **General information** No special measures required.
- **After inhalation** Supply fresh air; consult doctor in case of symptoms.
- **After skin contact** Instantly rinse with water.
- **After eye contact** Rinse opened eye for several minutes under running water.
- **After swallowing**
Drink copious amounts of water, induce vomiting.
In case of persistent symptoms consult doctor.
- **Information for doctor**
- **The following symptoms may occur:**
After swallowing of large amounts:
general feeling of sickness

* 5 Fire fighting measures

- **Suitable extinguishing agents**
CO₂, extinguishing powder or water jet. Fight larger fires with water jet or alcohol-resistant foam.
- **Special hazards caused by the material, its products of combustion or resulting gases:**
Formation of toxic gases is possible during heating or in case of fire.

(Contd. on page 2)

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Material Safety Data Sheet

According to 91/155 EEC

Printing date 27.01.2006

Reviewed on 27.01.2006

Product name: Vario Oxyscav 1 RGT - DEHA 1

(Contd. of page 1)

nitrous gases

carbon monoxide and carbon dioxide

combustible

· 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.

*** 6 Accidental release measures****· Person-related safety precautions:** Wear protective equipment. Keep unprotected persons away.**· Measures for environmental protection:** Do not allow product to reach sewage system or water bodies.**· Measures for cleaning/collecting:**

Dispose of contaminated material as waste according to item 13.

Collect mechanically.

Ensure adequate ventilation.

· Additional information: No dangerous materials are released.

*** 7 Handling and storage****· Handling****· Information for safe handling:** Thorough dedusting.**· Information about protection against explosions and fires:** No special measures required.**· Storage****· Requirements to be met by storerooms and containers:** Store in cool location.**· Information about storage in one common storage facility:** store away from solvents**· Further information about storage conditions:**

Protect from heat and direct sunlight.

Store under dry conditions.

Protect from humidity and keep away from water.

Protect from the effects of light.

*** 8 Exposure controls and personal protection****· Additional information about design of technical systems:** No further data; see item 7.**· Components with limit values that require monitoring at the workplace:** Not required.**· Additional information:** The lists that were valid during the compilation were used as basis.**· Personal protective equipment****· General protective and hygienic measures**

Wash hands during breaks and at the end of the work.

Do not eat, drink or smoke while working.

· Breathing equipment: Use breathing protection against the effects of fumes/dust/aerosol.**· Recommended filter device for short term use:** Filter P1**· Protection of hands:**

No chemical-protective gloves required.

Preventive skin protection by use of skin-protecting agents is recommended.

· Eye protection: Not required.

(Contd. on page 3)

Material Safety Data Sheet

According to 91/155 EEC

Printing date 27.01.2006

Reviewed on 27.01.2006

Product name: Oxyscav 1 RGT - DEHA 1

(Contd. of page 2)

 · **Body protection:** Protective work clothing.

* 9 Physical and chemical properties:

| | |
|--|-----------------------------|
| · Form: | Solid. |
| · Colour: | Light yellow |
| · Odour: | Odourless |
| · Melting point/Melting range: | > 230°C |
| · Boiling point/Boiling range: | Not applicable |
| · Flash point: | Not applicable |
| · Inflammability (solid, gaseous) | Product is not inflammable. |
| · Danger of explosion: | Product is not explosive. |
| · Density | Not determined |
| · Settled apparent density at 20°C | 920 kg/m ³ |
| · Solubility in / Miscibility with Water at 20°C: | 225 g/l |
| · pH-value (8 g/l) at 20°C: | 5.9 |
| · Organic solvents: | 0.0 % |
| · Solids content: | 100.0 % |

* 10 Stability and reactivity

- **Thermal decomposition / conditions to be avoided:** To avoid thermal decomposition do not overheat.
- **Materials to be avoided:**
 - oxidizing agents
 - > forms heat
- **Dangerous products of decomposition:** see chapter 5

* 11 Toxicological information

- **Acute toxicity:** Quantitative data on the toxicity of the preparation are not available.

| | | |
|--|------|--------------------|
| · LD/LC50 values that are relevant for classification: | | |
| 56-40-6 glycine--iron sulphate (1:1) | | |
| Oral | LD50 | 7930 mg/kg (rat) |
| 28048-33-1 disodium 4,4'-[3-(pyridin-2-yl)-1,2,4-triazine-5,6-diyl]bis(benzenesulphonate) | | |
| Oral | LD50 | > 5000 mg/kg (rat) |

- **Primary irritant effect:**
 - **on the skin:** No irritant effect.
 - **on the eye:** No irritant effect.
- **Sensitization:** No sensitizing effect known.
- **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.

The material is not subject to classification according to EC lists in the last version.

The usual precautionary measures should be adhered to general rules for handling chemicals.

 GB
 (Contd. on page 4)

Material Safety Data Sheet

According to 91/155 EEC

Printing date 27.01.2006

Reviewed on 27.01.2006

Product name: Oxyscav 1 RGT - DEHA 1

(Contd. of page 3)

* 12 Ecological information:

- **Information about elimination (persistence and degradability):**
 - **Other information:** Quantitative data on the ecological effect of this product are not available.
 - **Behaviour in environmental systems:**
 - **Mobility and bioaccumulation potential:** Does not accumulate in organisms
 - **General notes:**
Water hazard class 2 (German Regulation) (Assessment by list): hazardous for water.
Do not allow product to reach ground water, water bodies or sewage system.
-

13 Disposal considerations

- **Product:**
- **Recommendation** Must not be disposed of together with household garbage. Do not allow product to reach sewage system.

| | |
|---------------------------------|--|
| 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.
-

14 Transport information

- | | |
|--|---|
| Land transport ADR/RID (cross-border) | |
| ADR/RID-GGVS/E Class: | - |

- | | |
|---------------------------------|----|
| Maritime transport IMDG: | |
| IMDG Class: | - |
| Marine pollutant: | No |

- | | |
|--|---|
| Air transport ICAO-TI and IATA-DGR: | |
| ICAO/IATA Class: | - |

- **Transport/Additional information:** Not dangerous according to the above specifications.
-

* 15 Regulatory information

- **Designation according to EC guidelines:**
The product is not subject to identification regulations under EC Directives and the Ordinance on Hazardous Materials (GefStoffV).
-

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.

- **Department issuing data specification sheet:** Technical Department
 - *** Data compared to the previous version altered.**
-

Material Safety Data Sheet According to 91/155 EEC

Printing date 16.06.2005

Reviewed on 13.06.2005


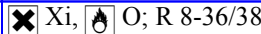
* 1 Identification of substance:

- **Product details:** Reagent for water analysis
- **Product name:** DEHA 2 RGT
- **Catalogue number:** CW/53.14.10
- **Supplier:**
Camlab Limited
Camlab House, Norman Way, Over, Cambridge CB4 5WE
United Kingdom
Tel: +44 (0)1954 233100
- **Informing department:** Technical Support
- **Emergency information:**
National Poisons Information Service, United kingdom
Tel: 0870 600 6266 (24 hours) • <http://www.npis.org/>

2 Composition/Data on components:

- **Description:** Mixture of the substances listed below with harmless additions.

- **Dangerous components:**

| | | | |
|--|-------------------------------|---|--------|
| CAS: 7697-37-2 EINECS: 231-714-2 EC Number: 007-004-00-1 | nitric acid |  | 10-20% |
| CAS: 7782-61-8 EINECS: 233-899-5 | iron(III) nitrate nonahydrate |  | 2.5-5% |

- **Additional information** For the wording of the listed risk phrases refer to section 16.

* 3 Hazards identification

- **Hazard designation:**



C Corrosive

- **Information pertaining to particular dangers for man and environment**

The product has to be labelled due to the calculation procedure of the "General Classification guideline for preparations of the EU" in the latest valid version.

R 34 Causes burns.

- **Classification system**

The classification is in line with current EC lists. It is expanded, however, by information from technical literature and by information furnished by supplier companies.

* 4 First aid measures

- **General information**

Instantly remove any clothing soiled by the product.

Do not leave affected persons unsupervised.

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

(Contd. on page 2)

— GB —

Material Safety Data Sheet

According to 91/155 EEC

Printing date 16.06.2005

Reviewed on 13.06.2005

Product name: DEHA 2 RGT

(Contd. of page 1)

- **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 under running water.
Call a doctor immediately.
 - **After swallowing**
Do not induce vomiting; instantly call for medical help.
Rinse out mouth and then drink plenty of water.
 - **The following symptoms may occur:**
after inhalation:
coughing
Danger of impaired breathing.
after swallowing:
pain
Strong caustic effect.
Methaemoglobinaemia
Danger of system failure.
vomiting
bloody diarrhoea
cramps
 - **Danger**
Danger of gastric perforation.
Danger of pulmonary oedema.
 - **Treatment**
Monitor circulation, possible shock treatment.
Subsequent observation for pneumonia and pulmonary oedema
-

* 5 Fire fighting measures

- **Suitable extinguishing agents** Use fire fighting measures that suit the environment.
 - **Special hazards caused by the material, its products of combustion or resulting gases:**
Formation of toxic gases is possible during heating or in case of fire.
Nitrogen oxides (NOx)
nitrous gases
 - **Protective equipment:**
Wear full protective suit.
Wear self-contained breathing apparatus.
 - **Additional information**
Dispose of fire debris and contaminated fire fighting water in accordance with official regulations.
Collect contaminated fire fighting water separately. It must not enter drains.
-

* 6 Accidental release measures

- **Person-related safety precautions:**
Ensure adequate ventilation
Wear protective equipment. Keep unprotected persons away.
- **Measures for environmental protection:** Do not allow product to reach sewage system or water bodies.
- **Measures for cleaning/collecting:**
Dilute with much water.
Neutralize with diluted sodium hydroxide solution or by throwing on lime sand, lime or sodium carbonate.
Send for recovery or disposal in suitable containers.
Dispose of contaminated material as waste according to item 13.

(Contd. on page 3)

Material Safety Data Sheet

According to 91/155 EEC

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Reviewed on 13.06.2005

Product name: DEHA 2 RGT

(Contd. of page 2)

 Ensure adequate ventilation.

* 7 Handling and storage

- **Handling**
- **Information for safe handling:**
 - Open and handle container with care.
 - Prevent formation of aerosols.
- **Information about protection against explosions and fires:** The product is not flammable
- **Storage**
- **Requirements to be met by storerooms and containers:** Store in cool location.
- **Information about storage in one common storage facility:**
 - Store away from flammable substances.
 - Store away from reducing agents.
 - Store away from metals.
- **Further information about storage conditions:**
 - Keep container tightly sealed.
 - Store under dry conditions.
 - Protect from humidity and keep away from water.
 - Protect from heat and direct sunlight.
- **Storage class** Not required.

* 8 Exposure controls and personal protection

- **Additional information about design of technical systems:** No further data; see item 7.

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

7697-37-2 nitric acid

| | |
|---------------------|--|
| OES (Great Britain) | Short-term value: 10 mg/m ³ , 4 ppm Long-term value: 5.2 mg/m ³ , 2 ppm |
|---------------------|--|

- **Additional information:** The lists that were valid during the compilation were used as basis.
- **Personal protective equipment**
- **General protective and hygienic measures**
 - Keep away from foodstuffs, beverages and food.
 - Take off immediately all contaminated clothing
 - Wash hands during breaks and at the end of the work.
 - Do not inhale gases / fumes / aerosols.
 - Avoid contact with the eyes and skin.
 - Do not eat, drink or smoke while working.
- **Breathing equipment:**
 - In case of brief exposure or low pollution use breathing filter apparatus. In case of intensive or longer exposure use breathing apparatus that is independent of circulating air.
- **Recommended filter device for short term use:** Filter E
- **Protection of hands:**
 - Acid resistant gloves
 - Only use chemical-protective gloves with CE-labelling of category III.
 - The glove material has to be impermeable and resistant to the product/ the substance/ the preparation.
 - 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**
 - 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.
 - nitrile rubber, NBR
 - Recommended thickness of the material: ≥ 0.11 mm

(Contd. on page 4)

Material Safety Data Sheet

According to 91/155 EEC

Printing date 16.06.2005

Reviewed on 13.06.2005

Product name: DEHA 2 RGT

(Contd. of page 3)

- **Penetration time of glove material**

The exact break through time has to be found out by the manufacturer of the protective gloves and has to be observed.

Value for the permeation: Level ≥ 6 (480 min)

- **Eye protection:** Tightly sealed safety glasses.

- **Body protection:** Acid resistant protective clothing

* 9 Physical and chemical properties:

| | |
|--|------------------------------|
| · Form: | Fluid |
| · Colour: | Colourless |
| · Odour: | Pungent |
| · Melting point/Melting range: | Not determined |
| · Boiling point/Boiling range: | > 83°C |
| · Flash point: | Not applicable |
| · Self-inflammability: | Product is not selfigniting. |
| · Danger of explosion: | Product is not explosive. |
| · Density at 20°C | 1.076 g/cm ³ |
| · Solubility in / Miscibility with Water: | Fully miscible |
| · pH-value at 20°C: | < 1 |
| · Solvent content: | |
| Organic solvents: | 0.0 % |
| Water: | > 80 % |
| · Solids content: | < 5 % |

* 10 Stability and reactivity

- **Thermal decomposition / conditions to be avoided:** To avoid thermal decomposition do not overheat.

- **Materials to be avoided:**

alkali metals

ammonia

alkalis

acids

metals

organic solvents

alcohols

reducing agents

- **Dangerous reactions**

Corrosive action on metals

Reacts with metals forming hydrogen

---> Explosive

- **Dangerous products of decomposition:** see chapter 5

* 11 Toxicological information

- **Acute toxicity:** Quantitative data on the toxicity of the preparation are not available.

- **LD/LC50 values that are relevant for classification:**

7782-61-8 iron(III) nitrate nonahydrate

| | | |
|------|------|------------------|
| Oral | LD50 | 3250 mg/kg (rat) |
|------|------|------------------|

(Contd. on page 5)

Material Safety Data Sheet

According to 91/155 EEC

Printing date 16.06.2005

Reviewed on 13.06.2005

Product name: DEHA 2 RGT

(Contd. of page 4)

- **Primary irritant effect:**

- **on the skin:** Caustic effect on skin and mucous membranes.

- **on the eye:** Strong caustic effect.

- **Sensitization:** No sensitizing effect known.

- **Additional toxicological information:**

The product shows the following dangers according to the calculation method of the General EC Classification Guidelines for Preparations as issued in the latest version:

Corrosive

Swallowing will lead to a strong caustic effect on mouth and throat and to the danger of perforation of esophagus and stomach.

* 12 Ecological information:

- **Information about elimination (persistence and degradability):**

- **Other information:**

Quantitative data on the ecological effect of this product are not available.

Does not cause biological oxygen deficit.

- **Behaviour in environmental systems:**

7697-37-2 nitric acid

| | |
|------------|----------|
| log P(o/w) | -2.3 (.) |
|------------|----------|

- **Mobility and bioaccumulation potential:** Nitrates: may contribute to the eutrophication of water supplies

- **Ecotoxicological effects:**

- **Aquatic toxicity:**

7782-61-8 iron(III) nitrate nonahydrate

| | |
|-------|-------------------|
| LC 50 | > 500 mg/l (fish) |
|-------|-------------------|

| | |
|--|-----------------------------|
| | 10-20 mg/l (Leuciscus idus) |
|--|-----------------------------|

- **Remark:** Forms corrosive mixtures with water even if diluted.

- **General notes:**

Water hazard class 1 (German Regulation) (Self-assessment): slightly hazardous for water.

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 unneutralized.

Also poisonous for fish and plankton in water bodies.

Rinse off of bigger amounts into drains or the aquatic environment may lead to decreased pH-values. A low pH-value harms aquatic organisms. In the dilution of the use-level the pH-value is considerably increased, so that after the use of the product the aqueous waste, emptied into drains, is only low water-dangerous.

* 13 Disposal considerations

- **Product:**

- **Recommendation** Must not be disposed of together with household garbage. Do not allow product to reach sewage system.

- **European waste catalogue**

| | |
|----------|--|
| 16 05 07 | discarded inorganic chemicals consisting of or containing dangerous substances |
|----------|--|

- **Uncleaned packagings:**

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

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

— GB —
(Contd. on page 6)

Material Safety Data Sheet

According to 91/155 EEC

Printing date 16.06.2005

Reviewed on 13.06.2005

Product name: DEHA 2 RGT

(Contd. of page 5)

* 14 Transport information

· Land transport ADR/RID (cross-border)



- ADR/RID-GGVS/E Class: 8 (CO1) Corrosive substances.
- Kemler Number: 80
- UN-Number: 2031
- Packaging group: II
- Label: 8
- Designation of goods: 2031 NITRIC ACID 14%

· Maritime transport IMDG:



- IMDG Class: 8
- UN Number: 2031
- Label: 8
- Packaging group: II
- EMS Number: F-A,S-Q
- Marine pollutant: No
- Correct technical name: NITRIC ACID

· Air transport ICAO-TI and IATA-DGR:



- ICAO/IATA Class: 8
- UN/ID Number: 2031
- Label: 8
- Packaging group: II
- Correct technical name: NITRIC ACID

* 15 Regulatory information

· Designation according to EC guidelines:

The product has been classified and labelled in accordance with EC Directives / Ordinance on Hazardous Materials (GefStoffV)

· Code letter and hazard designation of product:

C Corrosive

· Hazard-determining components of labelling:

nitric acid

· Risk phrases:

34 Causes burns.

· Safety phrases:

20 When using do not eat or drink.

23 Do not breathe fumes/aerosol.

26 In case of contact with eyes, rinse immediately with plenty of water and seek medical advice.

36/37/39 Wear suitable protective clothing, gloves and eye/face protection.

45 In case of accident or if you feel unwell, seek medical advice immediately (show the label where possible).

(Contd. on page 7)

Material Safety Data Sheet

According to 91/155 EEC

Printing date 16.06.2005

Reviewed on 13.06.2005

Product name: DEHA 2 RGT

60 This material and its container must be disposed of as hazardous waste.

(Contd. of page 6)

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.

· **Relevant R-phrases**

35 Causes severe burns.

36/38 Irritating to eyes and skin.

8 Contact with combustible material may cause fire.

· **Department issuing data specification sheet:** Technical Department

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