

**Safety Data Sheet**

according to Regulation (EC) No 1907/2006

**2168042 DEHA 2 Reagent**

Revision date: 05.12.2016

Product code: 2168042

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**SECTION 1: Identification of the substance/mixture and of the company/undertaking****1.1. Product identifier**

2168042 DEHA 2 Reagent

**1.2. Relevant identified uses of the substance or mixture and uses advised against****1.3. Details of the supplier of the safety data sheet**

Company name: HACH LANGE GmbH  
Street: Willstätterstr. 11  
Place: D-40549 Düsseldorf  
Telephone: +49 (0)211 5288-383  
e-mail: SDS@hach.com  
Internet: www.de.hach.com  
Responsible Department: HACH LANGE LTD  
Unit 1, Chestnut Road Western Industrial Estate  
Dublin 12 - Ireland  
Tel. +353 (0)1 4602522 \* +353 (0)1 4509337  
info-ie@hach.com

**SECTION 2: Hazards identification****2.1. Classification of the substance or mixture****Regulation (EC) No. 1272/2008**

Hazard categories:

Substance or mixture corrosive to metals: Met. Corr. 1

Skin corrosion/irritation: Skin Corr. 1B

Serious eye damage/eye irritation: Eye Dam. 1

Hazard Statements:

May be corrosive to metals.

Causes severe skin burns and eye damage.

**2.2. Label elements****Regulation (EC) No. 1272/2008****Hazard components for labelling**

Nitric acid ... %

**Signal word:** Danger**Pictograms:****Hazard statements**

H290 May be corrosive to metals.

H314 Causes severe skin burns and eye damage.

**Precautionary statements**

P260 Do not breathe dust/fume/gas/mist/vapours/spray.

P280 Wear protective gloves/protective clothing/eye protection/face protection.

P303+P361+P353 IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower.

P305+P351+P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

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

P301+P330+P331 IF SWALLOWED: Rinse mouth. Do NOT induce vomiting.

P310 Immediately call a POISON CENTER/doctor.

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**Additional advice on labelling**

Classification according to European directive on classification of hazardous preparations 1999/45/EC.

The product is classified as dangerous in accordance with Regulation (EC) No. 1272/2008.

**2.3. Other hazards**

None known.

**SECTION 3: Composition/information on ingredients****3.2. Mixtures****Hazardous components**

CAS No	Chemical name			Quantity
	EC No	Index No	REACH No	
	Classification according to Regulation (EC) No. 1272/2008 [CLP]			
7732-18-5	Water			85-95 %
	231-791-2			
7697-37-2	Nitric acid ... %			5-15 %
	231-714-2	007-004-00-1		
	Ox. Liq. 2, Skin Corr. 1A; H272 H314 EUH071			
7782-61-8	Iron(III) nitrate nonahydrate			1-5 %
	233-899-5			
	Ox. Sol. 3, Skin Irrit. 2, Eye Irrit. 2; H272 H315 H319			

Full text of H and EUH statements: see section 16.

**SECTION 4: First aid measures****4.1. Description of first aid measures****General information**

Consult a physician. Show this safety data sheet to the doctor in attendance.

First aider needs to protect himself.

**After inhalation**

Move to fresh air.

If symptoms persist, call a physician.

**After contact with skin**

Wash off immediately with plenty of water for at least 15 minutes.

Take off all contaminated clothing immediately.

Immediate medical treatment is necessary as untreated wounds from corrosion of the skin heal slowly and with difficulty. Show this safety data sheet to the doctor in attendance.

**After contact with eyes**

Rinse thoroughly with plenty of water for at least 15 minutes and consult a physician.

**After ingestion**

Clean mouth with water and drink afterwards plenty of water. Do NOT induce vomiting.

Consult a physician.

**4.2. Most important symptoms and effects, both acute and delayed**

Irritation and corrosion, Cough, Shortness of breath, Spasm, Nausea, Vomiting

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

Treat symptomatically.

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**SECTION 5: Firefighting measures****5.1. Extinguishing media****Suitable extinguishing media**

Use extinguishing measures that are appropriate to local circumstances and the surrounding environment. The product itself does not burn.

**Unsuitable extinguishing media**

No Limit

**5.2. Special hazards arising from the substance or mixture**

Gives off hydrogen by reaction with metals. Contact with combustible material may cause fire. (nitrogen oxides (NO<sub>x</sub>))

**5.3. Advice for firefighters**

In the event of fire, wear self-contained breathing apparatus. Suppress (knock down) gases/vapours/mists with a water spray jet.

**Additional information**

Fire residues and contaminated fire extinguishing water must be disposed of in accordance with local regulations.

**SECTION 6: Accidental release measures****6.1. Personal precautions, protective equipment and emergency procedures**

Use personal protective equipment. Only qualified personnel equipped with suitable protective equipment may intervene. Immediately evacuate personnel to safe areas.

Do not breathe vapours, mist or gas.

For personal protection see section 8.

**6.2. Environmental precautions**

Do not flush into surface water or sanitary sewer system.

**6.3. Methods and material for containment and cleaning up**

Contain spillage, soak up with non-combustible absorbent material, (e.g. sand, earth, diatomaceous earth, vermiculite) and transfer to a container for disposal according to local/national regulations (see section 13).

**6.4. Reference to other sections**

13. Disposal considerations

**SECTION 7: Handling and storage****7.1. Precautions for safe handling****Advice on safe handling**

Use only in well-ventilated areas. Do not breathe vapours/dust.

Wash thoroughly after handling.

General industrial hygiene practice.

**Advice on protection against fire and explosion**

None known.

See also section 5

**Further information on handling**

Observe label precautions.

**7.2. Conditions for safe storage, including any incompatibilities****Requirements for storage rooms and vessels**

Keep tightly closed in a dry, cool and well-ventilated place. Protect against light.

Store in original container. Do not use containers made of Light metals, Metals

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**Further information on storage conditions**

Keep away from combustible materials.

**SECTION 8: Exposure controls/personal protection****8.1. Control parameters****Occupational exposure limits**

CAS No	Substance	ppm	mg/m <sup>3</sup>	fib/cm <sup>3</sup>	Category	Origin
7697-37-2	Nitric acid	- 1	- 2.6		TWA (8 h) STEL (15 min)	

**Additional advice on limit values**

None known.

**8.2. Exposure controls****Appropriate engineering controls**

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

**Protective and hygiene measures**

The type of protective equipment must be selected according to the concentration and amount of the dangerous substance at the specific workplace.

General industrial hygiene practice.

Ensure that eye flushing systems and safety showers are located close to the working place.

**Eye/face protection**

Safety glasses with side-shields

**Hand protection**

Gloves must be inspected prior to use. The selected protective gloves have to satisfy the specifications of EU Directive 89/686/EEC and the standard EN 374 derived from it.

In case of full contact:

Glove material : Nitrile rubber

Layer thickness: 0,11 mm

Break through time: >480 min

In case of contact through splashing:

Glove material : Nitrile rubber

Layer thickness: 0,11 mm

Break through time: >480 min

If used in solution, or mixed with other substances, and under conditions which differ from EN 374, contact the supplier of the CE approved gloves.

**Skin protection**

Remove and wash contaminated clothing before re-use.

**Respiratory protection**

Breathing apparatus only if aerosol or dust is formed.

Recommended Filter type: E-(P2)

**Environmental exposure controls**

Do not flush into surface water or sanitary sewer system.

Prevent further leakage or spillage if safe to do so.

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**SECTION 9: Physical and chemical properties****9.1. Information on basic physical and chemical properties**

Physical state: liquid  
Colour: colourless  
Odour: odourless

**Test method**

pH-Value (at 20 °C): <0,5

**Changes in the physical state**

Melting point: no data available  
Initial boiling point and boiling range: 100 °C  
Sublimation point: no data available  
Softening point: no data available  
Pour point: no data available  
: no data available  
Flash point: no data available

**Flammability**

Solid: no data available  
Gas: no data available

**Explosive properties**

no data available

Lower explosion limits: no data available  
Upper explosion limits: no data available  
Ignition temperature: no data available

**Auto-ignition temperature**

Solid: no data available  
Gas: no data available

Decomposition temperature: no data available

**Oxidizing properties**

no data available

Vapour pressure: no data available  
Vapour pressure: no data available  
Density (at 20 °C): 1,062 g/cm<sup>3</sup>  
Bulk density: no data available  
Water solubility: soluble

**Solubility in other solvents**

no data available

Partition coefficient: no data available  
Viscosity / dynamic: no data available  
Viscosity / kinematic: no data available  
Flow time: no data available  
Vapour density: no data available  
Evaporation rate: no data available  
Solvent separation test: no data available

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Solvent content: no data available

**9.2. Other information**

Solid content: no data available

Corrosive to metals

Aluminium: 1325,9 mm/a

Mild steel: 3,048 mm/a

**SECTION 10: Stability and reactivity****10.1. Reactivity**

Corrosive to metals

Reactivity Hazard: Oxidizing agents

**10.2. Chemical stability**

Stable under recommended storage conditions.

**10.3. Possibility of hazardous reactions**

Reacts with the following substances:

Alkali metals, Metals, Alkaline earth metals, metal oxides, Alcohols, Ammonia, Bases, Halogenated compounds, Peroxides, organic solvent

**10.4. Conditions to avoid**

Decomposes on heating.

**10.5. Incompatible materials**

Organic materials, Reducing agents, Metals

Contact with metals liberates hydrogen gas.

**10.6. Hazardous decomposition products**nitrogen oxides (NO<sub>x</sub>)

See also section 5

**SECTION 11: Toxicological information****11.1. Information on toxicological effects****Toxicokinetics, metabolism and distribution**

No toxicology information is available.

**Acute toxicity**

No data is available on the product itself.

CAS No	Chemical name			
	Exposure route	Dose	Species	Source
7782-61-8	Iron(III) nitrate nonahydrate			
	oral	LD50 3250 mg/kg	rat	

**Irritation and corrosivity**

Causes skin and eye burns.

**Specific effects in experiment on an animal**

No data is available on the product itself.

**Further information**

Other dangerous properties can not be excluded. Handle in accordance with good industrial hygiene and safety practice.

**SECTION 12: Ecological information**

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### 12.1. Toxicity

No data is available on the product itself.

Do not flush into surface water or sanitary sewer system.

CAS No	Chemical name				
	Aquatic toxicity	Dose	[h]   [d]	Species	Source
7697-37-2	Nitric acid ... %				
	Acute fish toxicity	LC50	72 mg/l	96 h	Gambusia affinis   IUCRID

### 12.2. Persistence and degradability

No data is available on the product itself.

### 12.3. Bioaccumulative potential

No data is available on the product itself.

### Partition coefficient n-octanol/water

CAS No	Chemical name	Log Pow
7697-37-2	Nitric acid ... %	-0,21

### 12.4. Mobility in soil

No data is available on the product itself.

### 12.5. Results of PBT and vPvB assessment

No data is available on the product itself.

### 12.6. Other adverse effects

No data is available on the product itself.

## SECTION 13: Disposal considerations

### 13.1. Waste treatment methods

#### Waste disposal number of waste from residues/unused products

160506 WASTES NOT OTHERWISE SPECIFIED IN THE LIST; gases in pressure containers and discarded chemicals; laboratory chemicals, consisting of or containing hazardous substances, including mixtures of laboratory chemicals  
Classified as hazardous waste.

#### Waste disposal number of used product

160506 WASTES NOT OTHERWISE SPECIFIED IN THE LIST; gases in pressure containers and discarded chemicals; laboratory chemicals, consisting of or containing hazardous substances, including mixtures of laboratory chemicals  
Classified as hazardous waste.

#### Contaminated packaging

Dispose of as unused product.

The hazard and precautionary statements displayed on the label also apply to any residues left in the container.

## SECTION 14: Transport information

### Land transport (ADR/RID)

<b>14.1. UN number:</b>	UN 3264
<b>14.2. UN proper shipping name:</b>	Corrosive liquid, acidic, inorganic, n.o.s.
<b>14.3. Transport hazard class(es):</b>	8
<b>14.4. Packing group:</b>	II
Hazard label:	8

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Classification code: C1  
Special Provisions: 274  
Limited quantity: 1 L  
Excepted quantity: E2  
Transport category: 2  
Hazard No: 80  
Tunnel restriction code: E

### Marine transport (IMDG)

**14.1. UN number:** UN 3264  
**14.2. UN proper shipping name:** CORROSIVE LIQUID, ACIDIC, INORGANIC, N.O.S. (<15% Nitric acid/<5% ferric nitrate solution)  
**14.3. Transport hazard class(es):** 8  
**14.4. Packing group:** II  
Hazard label: 8



Marine pollutant: -  
Special Provisions: 274  
Limited quantity: 1 L  
Excepted quantity: E2  
EmS: F-A, S-B  
Segregation group: acids

### Air transport (ICAO-TI/IATA-DGR)

**14.1. UN number:** UN 3264  
**14.2. UN proper shipping name:** CORROSIVE LIQUID, ACIDIC, INORGANIC, N.O.S. (<15% Nitric acid/<5% ferric nitrate solution)  
**14.3. Transport hazard class(es):** 8  
**14.4. Packing group:** II  
Hazard label: 8



Special Provisions: A3 A803  
Limited quantity Passenger: 0.5 L  
Passenger LQ: Y840  
Excepted quantity: E2  
IATA-packing instructions - Passenger: 851  
IATA-max. quantity - Passenger: 1 L  
IATA-packing instructions - Cargo: 855  
IATA-max. quantity - Cargo: 30 L

### 14.5. Environmental hazards

ENVIRONMENTALLY HAZARDOUS: no

### 14.6. Special precautions for user

no data available



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#### 14.7. Transport in bulk according to Annex II of Marpol and the IBC Code

Not relevant

### SECTION 15: Regulatory information

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

##### National regulatory information

Water contaminating class (D): 2 - water contaminating

#### 15.2. Chemical safety assessment

Chemical safety assessments for substances in this mixture were not carried out.

### SECTION 16: Other information

#### Changes

Revision: 04.05.2015

Safety datasheet sections which have been updated: 2, 11

Revision: 24.04.2014

Safety datasheet sections which have been updated: 4-16

#### Relevant H and EUH statements (number and full text)

H272	May intensify fire; oxidiser.
H290	May be corrosive to metals.
H314	Causes severe skin burns and eye damage.
H315	Causes skin irritation.
H319	Causes serious eye irritation.
EUH071	Corrosive to the respiratory tract.

#### Further Information

The information is based on present level of our knowledge. It does not, however, give assurances of product properties and establishes no contract legal rights.

*(The data for the hazardous ingredients were taken respectively from the last version of the sub-contractor's safety data sheet.)*