

IRON – HNO₃

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

1.1 Product Identifier

Product form: Liquid
Chemical Name: IRON – HNO₃
Index No.: Mixture
EC No.: Mixture
CAS No.: Mixture

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

1.2.1 Relevant identified uses: Laboratory Chemical

1.2.2 Uses advised against: No additional information available.

1.3 Details of the supplier of the safety data sheet.

De Bruyn Spectroscopic Solutions
70/145 Chattan Road
Glenfernness
Midrand, 2191 Gauteng
South Africa

1.4 Emergency telephone number

RSA: 086 100 0366
Namibia: 080 010 0366
Other Countries: Contact Local Emergency Services.

SECTION 2: HAZARDS IDENTIFICATION

2.1 Classification of the substance or mixture

Classification Regulation (EC) No 1272/2008 (CLP):

Skin Corr. 1A, H314
Eye Dam 1, H318
Met cor 1, 290,

Full text of hazard classes and H statements: see Section 16.

Adverse physicochemical, human health and environmental effects:

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

2.2 Label Elements

Labelling (Regulation (EC) No 1272/2008

Hazard Pictograms:



Signal word: DANGER

Hazardous ingredients: Nitric Acid

Hazard Statements:

H290 – May be corrosive to metals

H314 – Causes severe skin burns and eye damage.

Precautionary Statements:

P260 - Do not breathe mist.

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

P303+P361+P353 - IF ON SKIN (or hair): Immediately remove/take off 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.

P310 -Immediately call a POISON CENTER/doctor

IRON – HNO₃

Supplemental Information (EU):
EUH071 - Corrosive to the respiratory tract.

Reduced Labelling (< = 125 ml)



Signal Word: Danger

Causes severe skin burns and eye damage.

Do not breathe mist.

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

IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water.

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

Immediately call a POISON CENTER/doctor
(EU) EUH071 Corrosive to the respiratory tract.

2.3

Other hazards

Other hazards not contributing to the classification:

This substance/mixture contains no components considered to be either persistent, bioaccumulative and toxic (PBT), or very persistent and very bioaccumulative (vPvB) at levels of 0.1% or higher.

SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS

3.1 Substance

Not applicable.

3.2 Mixture

| Name | Product Identifier | % | Classification according to Regulation (EC) No. 1272/2008 [CLP] |
|-------------|--|-------------------|---|
| Nitric Acid | (CAS-No.) 7697-37-2 (EC-No.) 231-714-2 (EC Index-No.) 007-004-00-1 | 50-70 | Ox. Liq. 2, H272; Met corr. 1 290; Skin Corr. 1A, H314; Eye dam 1, H318; Ac tox 3 H331; EU071 |
| Iron | (CAS-No) 7439-89-6 (EC-No.) 628-861-3 | 0.01 10 000 µg/mL | Not classified |

Specific concentration limits: HNO₃
(5 =< 20) Skin Corr. 1B, H314 ;(C >= 20) Skin Corr. 1A, H314 (65 =< 99) Ox. Liq. 3, H272 (C >= 99) Ox. Liq. 2, H272

SECTION 4: FIRST AID MEASURES

4.1 Description of First Aid Measures

First aid measures general

Take off immediately all contaminated clothing. First aiders need to protect themselves.

First aid measures after inhalation

Remove person to fresh air and keep comfortable for breathing. If symptoms persist obtain medical attention.

First aid measures after skin contact

Rinse skin with water/shower. Call a physician immediately.

First aid measures after eye contact

Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Call a physician immediately.

First aid measures after ingestion

Rinse mouth. Do not induce vomiting. Call a physician immediately.

4.2 Most important symptoms and effects, both acute and delayed

Symptoms/effects after skin contact

Burns

Symptoms/effects after eye contact

Serious damage to eyes. Risk of blindness.

Symptoms/effects after ingestion

Cough, Dyspnoea, Pulmonary oedema. Gastric perforation.

4.3 Indication of any immediate medical attention and special treatment needed

Treat symptomatically.

SECTION 5: FIRE FIGHTING MEASURES

5.1 Extinguishing media

Suitable extinguishing media

Water spray. Dry powder. Foam. Carbon dioxide.

Unsuitable

Water jet.

5.2 Special hazards arising from the substance or mixture

Fire hazard

Product not combustible.

Hazardous decomposition products in case of fire

Toxic fumes may be released. Nitrogen oxides (NOx)

5.3 Advice for firefighters
Protection during firefighting

In case of fire and/or explosion do not breathe fumes. Fight fire with normal precautions from a reasonable distance. Wear self-contained breathing apparatus. Wear full chemical protective clothing.

5.4 Further Information

No further information.

SECTION 6: ACCIDENTAL RELEASE MEASURES

6.1 Personal precautions, protective equipment, and emergency procedures

6.1.1 For non-emergency personnel
Emergency procedures

Use personal protective equipment as required. Avoid contact with skin, eyes and clothes. Do not breathe vapour/spray.

6.1.2 For emergency responders
Protective equipment

Do not attempt to act without suitable protective equipment. For further information refer to section 8: "Exposure controls/personal protection".

6.2 Environmental precautions

Avoid release to the environment.

6.3 Methods and materials for containment and cleaning up

Methods for cleaning up Take up liquid spill into non-combustible absorbent material.

Other Information Dispose of materials or solid residues at an authorized site.

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

Precautions for safe handling

Wear recommended personal protective equipment. See section 8. Avoid contact with eyes and skin. Do not inhale vapour/aerosols.

Hygiene measures

Handle in accordance with good industrial hygiene and safety practice. Immediately change contaminated clothing. Wash hands before breaks and at the end of workday. Do not eat, drink or smoke while working.

7.2 Conditions for safe storage, including any incompatibilities

Storage conditions

Store in a well-ventilated place. Keep container tightly closed. Keep only in original container. May cause decomposition by long-term light influence. Protect from UV radiation/sunlight, contact with air/oxygen. Recommended storage temperature: 20 ± 5°C.

Incompatible materials

Strong alkali, various metals, Combustible materials.

Packaging

Original container.

7.3 Specific end users

No additional information.

SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1 Exposure Limits

| Nitric Acid (CAS: 7697-37-2) | | |
|-------------------------------------|---|--------------------------------|
| United Kingdom | WEL STEL (mg/m ³) WEL STEL | 2.6 mg/m ³ 1 ppm |
| South Africa; HCA Regulations | TWA (8 Hour) STEL (15 min) | 4 ppm 8 ppm |

8.2 Exposure controls

Appropriate engineering controls

Ensure adequate ventilation of the workstation.

Personal protective equipment

Protective gloves

Tightly fitting safety goggles/face mask

Acid resistant protective clothing, PVC apron.

In case of insufficient ventilation, wear suitable respiratory equipment. Recommended Filter type: Filter E-(P3).

Hand protection

Eye protection

Skin and body protection

Respiratory protection



Environmental exposure controls

Avoid release to the environment.

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES**9.1 Information on basic physical and chemical properties**

| | |
|--|--------------------------------|
| Product form: | Liquid |
| Appearance | Colourless |
| Odour | Slight |
| Odour threshold | No data available |
| pH | <2 @ 20°C |
| Relative evaporation rate (butylacetate = 1) | No data available |
| Melting point/Freezing Point | No data available |
| Initial Boiling point | No data available |
| Flash point | No data available |
| Auto-ignition temperature | No data available |
| Flammability (solid, gas) | Not applicable |
| Vapour pressure | No data available |
| Vapour pressure @ 50°C | No data available |
| Vapour density | No data available |
| Relative vapour density @ 20°C | No data available |
| Density | 1.026 g/cm ³ @ 20°C |
| Solubility (water) | Miscible |
| Log Pow | No data available |
| Viscosity, kinematic | No data available |
| Viscosity, dynamic | No data available |
| Explosive properties | Not classified as explosive |
| Explosive limits | Not applicable |
| Oxidising properties | None |

9.2 Additional information

Corrosive to metals.

SECTION 10: STABILITY AND REACTIVITY**10.1 Reactivity**

The product is corrosive to metals.

10.2 Chemical stability

Stable under recommended storage and handling conditions.

10.3 Possibility of hazardous reactions

Strong oxidizer: reacts violently with strong bases, organic materials, metals, hydrogen sulphide, carbides, alcohols, organic solvents, cyanides, sulphides.

10.4 Conditions to avoid

UV radiation/sunlight. Keep away from heat.

10.5 Incompatible materials

Strong bases, various metals, combustible materials.

IRON – HNO₃**10.6 Hazardous decomposition products**

No hazardous decomposition if stored and handled correctly. Thermal decomposition releases corrosive gases/vapours (NOx).

SECTION 11: TOXICOLOGICAL INFORMATION

11.1 Information on toxicological effects

Test data not available for the mixture.

Acute toxicity (oral)

Not classified

Acute toxicity (Dermal)

Not classified

Acute toxicity (Respiratory)

Product does not meet classification criteria.

| |
|---------------------------|
| Nitric acid ≥ 65 % |
|---------------------------|

| |
|--------------------------|
| LC50 inhalation (vapour) |
|--------------------------|

| |
|-----------|
| 2.65 mg/l |
|-----------|

Skin corrosion/irritation:

Causes severe skin burns and eye damage.

Serious eye damage/irritation

Serious eye damage, category 1, implicit

Respiratory or skin sensitisation

Not classified

Germ cell mutagenicity

Not classified (Ames test; salmonella typhimurium: Negative)

Carcinogenicity

Not classified

Reproductive toxicity

Not classified

STOT-SE

Not classified

STOT RE

Not classified

Aspiration hazard

Not classified

11.2 Additional Information**Endocrine disrupting properties**

This substance/mixture does not contain components considered to have endocrine disrupting properties affecting human health, according to REACH Article 57(f), Commission Regulation (EU) 2018/605 or Commission Delegated Regulation (EU) 2017/2100.

SECTION 12: ECOLOGICAL INFORMATION

12.1 Toxicity

Ecology - general

Before neutralisation, the product may represent a danger to aquatic organisms.

Acute aquatic toxicity

Not classified

Chronic aquatic toxicity

Not classified

12.2 Persistence and degradability

Not applicable

12.3 Bioaccumulative potential

No data available.

12.4 Mobility

No data available.

12.5 Results of PBT and vPvB assessment

This substance/mixture contains no components considered to be either persistent, bioaccumulative or toxic (PBT), or very persistent and very bioaccumulative (vPvB) at levels of 0.1% or higher.

12.6 Endocrine disrupting properties

Assessment: This substance/mixture does not contain components considered to have endocrine disrupting properties for environment, according to REACH Article 57(f), Commission Regulation (EU) 2018/605 or Commission Delegated Regulation (EU) 2017/2100.

12.7 Other adverse effects

No additional information

SECTION 13: DISPOSAL CONSIDERATIONS

Waste treatment methods: Product and packaging:

The generation of waste should be avoided or minimised wherever possible. This material and packaging must be disposed of in a safe way in consultation with licensed waste disposal company in accordance with local legal requirements.

SECTION 14: TRANSPORT INFORMATION

In accordance with ADR / IMDG / IATA

| | ADR | IMDG | IATA | Class Diamond |
|-------------------------|--|--|--|---------------|
| UN Number | 3264 | 3264 | 3264 | |
| Proper Shipping Name | CORROSIVE LIQUID, ACIDIC, INORGANIC, N.O.S. | CORROSIVE LIQUID, ACIDIC, INORGANIC, N.O.S. | CORROSIVE LIQUID, ACIDIC, INORGANIC, N.O.S. | |
| Hazard Class | 8 | 8 | 8 | |
| Subsidiary hazard class | - | - | - | |
| Packing Group | III | III | III | |
| Marine pollutant | No | No | No | |

Limited/Excepted quantity: 5L

**SECTION 15: REGULATORY INFORMATION****15.1 Safety, health, and environmental regulations/legislation specific for the substance or mixture**

This material safety data sheet complies with the requirements of Regulation (EC) No. 1907/2006.

Authorisations and/or restrictions on use:

This product does contains a substance listed on Annex XIV of the REACH Regulation (EC) Nr. 1907/2006. Regulation (EU) 2019/1148 on the marketing and use of explosives precursors: nitric acid.

REACH - Restrictions on the manufacture, placing on the market and use of certain dangerous substances, mixtures and articles (Annex XVII) : No restrictions.

National Regulations:

Occupational Health and Safety Act 85 of 1993.

Hazardous Chemical Agents Regulations.

SANS 10228, 10229, 10232-4.

15.2 Chemical Safety Assessment

No chemical safety assessment has been carried out.

SECTION 16: OTHER INFORMATION

Full text of R-, H- and EUH-statements:

| | |
|---|--|
| Sk cor. Cat 1A, H314 | Skin corrosion, Category 1A, Causes seveverskin burns and eye damage. |
| Sk cor. Cat 1B, H314 | Skin corrosion, Category 1B, Causes seveverskin burns and eye damage. |
| Eye dam 1 318; | Eye damage Category 1, Causes serious eye damage. |
| Met.Cor. 1A, H290 | Metal corrosion Category 1A, May cause metal corrosion. |
| Oxid. Liq. Cat 2, H272 | Oxidising liquid, Category 2, May intensify fire-oxidiser. |
| Ac tox Inhal, Cat 3, H331 (Mist/aerosol) | Acute toxicity, Inhalation, Category 3, Toxic if inhaled (mist aerosol). |
| WEL STEL | Workplace Exposure Limit; Short term Exposure Limit |
| TWA | Time weighted average |
| STOT-SE | Specific Target Organ Toxicity- Single Exposure |
| STOT-RE | Specific Target Organ Toxicity- Repeated Exposure |

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| Revision history | Changes | Date |
|------------------|--------------------|------------|
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