SAFETY DATA SHEET

This safety data sheet complies with the requirements of:
Regulation (EC) No. 1907/2006 and Regulation (EC) No. 1272/2008

Issuing Date 11-Nov-2016 **Revision Date** 11-Nov-2016 **Revision Number** 1
ENG

Section 1: IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND OF THE COMPANY/UNDERTAKING

1.1. Product identifier

Product Code(s) LK1-00260702-IMP

Product Name Iron 10 mg/L in 2% HNO3, 250 mL

REACH registration number Not applicable

CAS No. Not applicable

Contains Nitric Acid

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

Recommended Use Laboratory chemicals
Production of chemical substance

Uses advised against Not for human consumption

1.3. Details of the supplier of the safety data sheet

Manufacturer
LabKings B.V
Utrechtseweg 5, 1213TK Hilversum, The Netherlands
+31 84 875 63 44
www.labkings.com

1.4. Emergency telephone number

Emergency Telephone Chemtrec, Inside the USA: 1-800-424-9300
Chemtrec, Outside the USA: 001-703-527-3887

Europe	**112**

Section 2: HAZARDS IDENTIFICATION

2.1. Classification of the substance or mixture

Regulation (EC) No 1272/2008

Acute toxicity - Inhalation (Vapors)	Category 3 - (H331)
Serious eye damage/eye irritation	Category 1 - (H318)

2.2. Label elements

Regulation (EC) No 1272/2008
Contains Nitric Acid

Signal word
Danger

Hazard statements
H318 - Causes serious eye damage
H331 - Toxic if inhaled

Precautionary Statements - EU (§28, 1272/2008)
P321 - Specific treatment (see supplemental first aid instructions on this label)
P403 + P233 - Store in a well-ventilated place. Keep container tightly closed
P280 - Wear eye protection/ face protection
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 or doctor

2.3. Other hazards
No information available

Section 3: COMPOSITION/INFORMATION ON INGREDIENTS

3.1 Substances

The exact concentration of each component can be found on the Certificate of Analysis

Chemical name	CAS No.	Weight-%
Water	7732-18-5	97.999
Nitric Acid	7697-37-2	2
Iron Metal	7439-89-6	0.001

3.2 Mixtures

Chemical name	CAS No.	Classification according to Regulation (EC) No. 1272/2008 [CLP]
Water	7732-18-5	No data available
Nitric Acid	7697-37-2	Skin Corr. 1A (H314) (EUH071) Ox. Liq. 2 (H272)
Iron Metal	7439-89-6	No data available

Full text of H- and EUH-phrases: see section 16

Section 4: FIRST AID MEASURES

4.1. Description of first aid measures

General advice Immediate medical attention may be required. Show this safety data sheet to the doctor in attendance.

Inhalation IF INHALED: Remove to fresh air and keep at rest in a position comfortable for breathing. Administer oxygen if breathing is difficult. IF exposed or concerned: Get medical

advice/attention.

Eye contact Rinse thoroughly with plenty of water for at least 15 minutes, lifting lower and upper eyelids. Consult a physician.

Skin contact Wash off immediately with plenty of water for at least 15 minutes. Get medical attention immediately if symptoms occur.

Ingestion Do not induce vomiting without medical advice. Rinse mouth thoroughly with water. Get immediate medical advice/attention.

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

Symptoms Skin irritation. Eye irritation.

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

Note to physicians Treat symptomatically.

Section 5: FIRE-FIGHTING MEASURES

5.1. Extinguishing media

Suitable Extinguishing Media Dry chemical, CO2, alcohol-resistant foam or water spray. Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.

Unsuitable extinguishing media No information available.

5.2. Special hazards arising from the substance or mixture

Specific hazards arising from the chemical No information available.

5.3. Advice for firefighters

Special protective equipment for fire-fighters Firefighters should wear self-contained breathing apparatus and full firefighting turnout gear. Use personal protection equipment.

Section 6: ACCIDENTAL RELEASE MEASURES

6.1. Personal precautions, protective equipment and emergency procedures

Personal precautions Ensure adequate ventilation. Avoid breathing dust/fume/gas/mist/vapors/spray. Avoid contact with skin, eyes or clothing. Wear protective gloves/protective clothing and eye/face protection. Handle within a fume cupboard or implement suitable equivalent methods to minimize exposure.

For emergency responders Use personal protection recommended in Section 8.

6.2. Environmental precautions

Environmental precautions See Section 12 for additional Ecological Information.

6.3. Methods and material for containment and cleaning up

Methods for containment Prevent further leakage or spillage if safe to do so.

Methods for cleaning up Soak up with inert absorbent material (e.g. sand, silica gel, acid binder, universal binder, sawdust). Place in appropriate chemical waste container.

Prevention of secondary hazards Clean contaminated objects and areas thoroughly observing environmental regulations.

6.4. Reference to other sections

Reference to other sections See section 8 for more information. See section 13 for more information.

Section 7: HANDLING AND STORAGE

7.1. Precautions for safe handling

Advice on safe handling Avoid contact with skin, eyes or clothing. Do not breathe dust/fume/gas/mist/vapors/spray. Ensure adequate ventilation. Use personal protection equipment. Handle in a fume cupboard.

General hygiene considerations Handle in accordance with good industrial hygiene and safety practice.

7.2. Conditions for safe storage, including any incompatibilities

Storage Conditions Keep containers tightly closed in a dry, cool and well-ventilated place. For more information, see product label and/or certificate of analysis.

7.3. Specific end use(s)

Risk Management Methods (RMM) The information required is contained in this Material Safety Data Sheet.

Section 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1. Control parameters

Exposure Limits .

Chemical name	European Union	United Kingdom	France	Spain	Germany
Nitric Acid 7697-37-2	-	STEL: 1 ppm STEL: 2.6 mg/m³	STEL: 1 ppm STEL: 2.6 mg/m³	STEL: 1 ppm STEL: 2.6 mg/m³	TWA: 1 ppm TWA: 2.6 mg/m³
Chemical name	Italy	Portugal	Netherlands	Finland	Denmark
Nitric Acid 7697-37-2	STEL: 1 ppm STEL: 2.6 mg/m³	TWA: 2 ppm STEL: 4 ppm	STEL: 1.3 mg/m³	TWA: 0.5 ppm TWA: 1.3 mg/m³ STEL: 1 ppm STEL: 2.6 mg/m³	-
Chemical name	Austria	Switzerland	Poland	Norway	Ireland
Nitric Acid 7697-37-2	STEL 1 ppm STEL 2.6 mg/m³	TWA: 2 ppm TWA: 5 mg/m³ STEL: 2 ppm STEL: 5 mg/m³	STEL: 2.6 mg/m³ TWA: 1.4 mg/m³	TWA: 2 ppm TWA: 5 mg/m³ STEL: 2 ppm STEL: 5 mg/m³	STEL: 1 ppm STEL: 2.6 mg/m³

Derived No Effect Level (DNEL) No information available.

Predicted No Effect Concentration (PNEC) No information available.

8.2. Exposure controls

Engineering controls Apply technical measures to comply with the occupational exposure limits. Showers, eyewash stations, and ventilation systems. Ensure that eyewash stations and safety showers are close to the workstation location.

Personal protective equipment

Eye/face protection	Wear safety glasses with side shields (or goggles). Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166(EU).
Hand Protection	Protective gloves. Ensure that the breakthrough time of the glove material is not exceeded. Refer to glove supplier for information on breakthrough time for specific gloves. Wash hands thoroughly after handling.
Skin and body protection	Wear suitable protective clothing. Chemical resistant apron. Wear impervious protective clothing, including boots, gloves, lab coat, apron or coveralls, as appropriate, to prevent skin contact.
Respiratory protection	Follow the OSHA respirator regulations found in 29 CFR 1910.134 or European Standard EN 149. Use NIOSH/MSHA or European Standard EN 149 approved respirator if exposure limits are exceeded or if irritation or other symptoms are experienced.
General hygiene considerations	Handle in accordance with good industrial hygiene and safety practice.
Environmental exposure controls	No information available.

Section 9: PHYSICAL AND CHEMICAL PROPERTIES

9.1. Information on basic physical and chemical properties

Physical state	Liquid
Appearance	May vary
Odor	May vary.
Color	May vary
Odor threshold	No information available

Property	**Values**	**Remarks • Method**
pH	No data available	None known
Melting point / freezing point	0°C	None known
Boiling point / boiling range	100° C	None known
Flash point	No data available	None known
Evaporation rate	No data available	None known
Flammability (solid, gas)	No data available	None known
Flammability Limit in Air		None known
Upper flammability limit:	No data available	
Lower flammability limit:	No data available	
Vapor pressure	23 hPa (17 mm Hg)	None known
Vapor density	No data available	None known
Relative density	No data available	None known
Water solubility	Miscible in water	None known
Solubility(ies)	No data available	None known
Partition coefficient	No data available	None known
Autoignition temperature	No data available	None known
Decomposition temperature	No data available	None known
Kinematic viscosity	No data available	None known
Dynamic viscosity	No data available	None known
Explosive properties	No information available	
Oxidizing properties	No information available	

9.2. Other information

Softening point	No information available
Molecular weight (g/mol)	No information available
VOC Content (%)	No information available
Liquid Density	No information available
Bulk density	No information available

Particle Size No information available
Particle Size Distribution No information available

Section 10: STABILITY AND REACTIVITY

10.1. Reactivity

Reactivity Stable under normal conditions.

10.2. Chemical stability

Stability Stable under normal conditions.

Explosion data
Sensitivity to Mechanical Impact None.
Sensitivity to Static Discharge None.

10.3. Possibility of hazardous reactions

Possibility of hazardous reactions None under normal processing.

10.4. Conditions to avoid

Conditions to avoid None known based on information supplied.

10.5. Incompatible materials

Incompatible materials None known based on information supplied.

10.6. Hazardous decomposition products

Hazardous decomposition products Nitrogen oxides (NOx).

Section 11: TOXICOLOGICAL INFORMATION

11.1. Information on toxicological effects

Information on likely routes of exposure

Product Information

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Inhalation Specific test data for the substance or mixture is not available.

Eye contact Specific test data for the substance or mixture is not available.

Skin contact Specific test data for the substance or mixture is not available.

Ingestion Specific test data for the substance or mixture is not available.

Information on toxicological effects

Symptoms Skin irritation. Eye irritation.

Numerical measures of toxicity

Acute toxicity

The following values are calculated based on chapter 3.1 of the GHS document mg/kg
ATEmix (inhalation-dust/mist) 6.50 mg/l
ATEmix (inhalation-vapor) 8.64 mg/l

Unknown acute toxicity 2 % of the mixture consists of ingredient(s) of unknown toxicity.
2 % of the mixture consists of ingredient(s) of unknown acute oral toxicity.
2 % of the mixture consists of ingredient(s) of unknown acute dermal toxicity.
2 % of the mixture consists of ingredient(s) of unknown acute inhalation toxicity (gas).
0 % of the mixture consists of ingredient(s) of unknown acute inhalation toxicity (vapor).
0 % of the mixture consists of ingredient(s) of unknown acute inhalation toxicity (dust/mist).

Chemical name	Oral LD50	Dermal LD50	Inhalation LC50
Water	> 90 mL/kg (Rat)		
Nitric Acid			= 67 ppm (Rat) 4 h = 130 mg/m^3 (Rat) 4 h
Iron Metal	= 984 mg/kg (Rat)		

Delayed and immediate effects as well as chronic effects from short and long-term exposure

Skin corrosion/irritation Irritating to skin.

Serious eye damage/eye irritation Irritating to eyes. Risk of serious damage to eyes.

Respiratory or skin sensitization No information available.

Germ cell mutagenicity No information available.

Carcinogenicity No information available.

Reproductive toxicity No information available.

STOT - single exposure No information available.

STOT - repeated exposure No information available.

Aspiration hazard No information available.

Section 12: ECOLOGICAL INFORMATION

12.1. Toxicity

Ecotoxicity The environmental impact of this product has not been fully investigated.

Chemical name	Algae/aquatic plants	Fish	Toxicity to microorganisms	Crustacea
Nitric Acid	-	72: 96 h Gambusia affinis mg/L LC50	-	-
Iron Metal	-	13.6: 96 h Morone saxatilis mg/L LC50 static	-	-

12.2. Persistence and degradability

Persistence and degradability This substance is not considered to be very persistent nor very bioaccumulating (vPvB).

12.3. Bioaccumulative potential

Bioaccumulation No information available.

Chemical name	Partition coefficient
Nitric Acid	-2.3

12.4. Mobility in soil

Mobility in soil No information available.

12.5. Results of PBT and vPvB assessment

PBT and vPvB assessment No information available.

12.6. Other adverse effects

Other adverse effects No information available.

Section 13: DISPOSAL CONSIDERATIONS

13.1. Waste treatment methods

Waste from residues/unused products Dispose of in accordance with local regulations. Dispose of waste in accordance with environmental legislation.

Contaminated packaging Do not reuse empty containers.

Section 14: TRANSPORT INFORMATION

IMDG

14.1 UN/ID no.	UN3264
14.2 Proper shipping name	Corrosive liquid, acidic, inorganic, n.o.s.
14.3 Hazard Class	8
14.4 Packing Group	III
14.5 Marine pollutant	No information available
14.6 Special Provisions	No information available
14.7 Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code	No information available

RID

14.1 UN/ID no.	UN3264
14.2 Proper shipping name	Corrosive liquid, acidic, inorganic, n.o.s.
14.3 Hazard Class	8
14.4 Packing Group	III
14.5 Environmental hazard	No information available
14.6 Special Provisions	No information available

ADR

14.1 UN/ID no.	UN3264
14.2 Proper shipping name	Corrosive liquid, acidic, inorganic, n.o.s.
14.3 Hazard Class	8
14.4 Packing Group	III
14.5 Environmental hazard	No information available
14.6 Special Provisions	No information available

IATA

14.1 UN/ID no.	UN3264
14.2 Proper shipping name	Corrosive liquid, acidic, inorganic, n.o.s.
14.3 Hazard Class	8
14.4 Packing Group	III
14.5 Environmental hazard	No information available
14.6 Special Provisions	No information available

Section 15: REGULATORY INFORMATION

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

Chemical name	French RG number	Title
Iron Metal 7439-89-6	RG 44,RG 44bis,RG 94	-

European Union

Take note of Directive 98/24/EC on the protection of the health and safety of workers from the risks related to chemical agents at work

Authorizations and/or restrictions on use:
This product does not contain substances subject to authorization (Regulation (EC) No. 1907/2006 (REACH), Annex XIV) This product does not contain substances subject to restriction (Regulation (EC) No. 1907/2006 (REACH), Annex XVII)

Persistent Organic Pollutants
Not applicable

Ozone-depleting substances (ODS) regulation (EC) 1005/2009 Not applicable

International Inventories

TSCA	Complies
DSL/NDSL	Complies
EINECS/ELINCS	Complies
ENCS	Does not comply
IECSC	Complies
KECL	Complies
PICCS	Complies
AICS	Complies

Legend:
TSCA - United States Toxic Substances Control Act Section 8(b) Inventory
DSL/NDSL - Canadian Domestic Substances List/Non-Domestic Substances List
EINECS/ELINCS - European Inventory of Existing Chemical Substances/European List of Notified Chemical Substances
ENCS - Japan Existing and New Chemical Substances
IECSC - China Inventory of Existing Chemical Substances
KECL - Korean Existing and Evaluated Chemical Substances
PICCS - Philippines Inventory of Chemicals and Chemical Substances
AICS - Australian Inventory of Chemical Substances

15.2. Chemical safety assessment

Chemical Safety Report A Chemical Safety Assessment has not been carried out for this substance

Section 16: OTHER INFORMATION

Key or legend to abbreviations and acronyms used in the safety data sheet

Full text of H-Statements referred to under section 3
H314 - Causes severe skin burns and eye damage
H272 - May intensify fire; oxidizer
EUH071 - Corrosive to the respiratory tract

Legend
SVHC: Substances of Very High Concern for Authorization:

Legend Section 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

TWA	TWA (time-weighted average)	STEL	STEL (Short Term Exposure Limit)
Ceiling	Maximum limit value	*	Skin designation

Prepared By	LabKings B.V.
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This material safety data sheet complies with the requirements of Regulation (EC) No. 1907/2006

Disclaimer
The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text.

End of Safety Data Sheet