

Material Safety Data Sheet

Iron Nanopowder, 25 nm

Revision Date: 01/12/2010

Date Issued: 11/24/2006

1 IDENTIFICATION OF THE SUBSTANCE/PREPARATION AND THE COMPANY / UNDERTAKING

Product name	Iron
Product code	NM-0019-HP
Supplier	IoLiTec Ionic Liquids Technologies GmbH Salzstrasse 184 D-74076 Heilbronn Germany
Telephone	+49 (0)7131 – 898390
Fax	+49 (0)7131 – 89839109
Emergency telephone	+49 (0)179 – 5322578
Email	msds@iolitec.de

2 HAZARDS IDENTIFICATION

2.1 Classification of the substance or mixture

Classification (67/548/EEC or 1999/45/EC)

Flammable metal powder

Classification (REGULATION (EC) No 1272/2008)

Flammable solids, Category 2, H228

Serious eye damage/Eye irritation, Category 2, H319

Specific Target Organ Toxicity - Single exposure: Respiratory tract irritation, Category 3, H335

Material Safety Data Sheet

Iron Nanopowder, 25 nm

Revision Date: 01/12/2010

Date Issued: 11/24/2006

2.2 Label elements

Labelling (67/548/EEC or 1999/45/EC)

Hazard description:

Label for supply



F Highly flammable



Xn irritant

Information pertaining to particular dangers for man and environment

Risk phrases

R11: Highly flammable.

R36/37: Irritating to eyes and respiratory system.

Safety phrases

S26: In case of contact with eyes, rinse immediately with plenty of water and seek medical advice.

S36/37/39: Wear suitable protective clothing, gloves and eye/face protection.

Labelling (REGULATION (EC) No 1272/2008, GHS)

Hazard statements



Warning

H-phrases

H228: Flammable solid.

H319: Causes serious eye irritation.

H335: May cause respiratory irritation.

Material Safety Data Sheet

Iron Nanopowder, 25 nm

Revision Date: 01/12/2010

Date Issued: 11/24/2006

Precautionary statements

P-phrases

P210: Keep away from heat/sparks/open flames/hot surfaces . - No smoking.

P261: Avoid breathing dust/fume/gas/mist/vapours/spray .

P280: Wear protectic gloves/protective clothing/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.

P370 + P378: In case of fire: Use sand or fire extinguisher class D for extinction

P422: Store contents under nitrogen or argon.

3 COMPOSITION / INFORMATION ON INGREDIENTS

Ingredient name	Iron
Empirical Formula	Fe (partially passivated w/[O] ~10%)
CAS No.	7439-89-6

4 FIRST AID MEASURES

General	Contaminated clothing should be removed and washed before being reused.
Inhalation	Move the exposed person to fresh air at once. If respiratory problems, artificial respiration/oxygen.
Ingestion	Immediately rinse mouth and provide fresh air. Do not induce vomiting. Get medical attention immediately.
Skin	Wash the skin immediately with soap and water. Get medical attention immediately.

Material Safety Data Sheet

Iron Nanopowder, 25 nm

Revision Date: 01/12/2010

Date Issued: 11/24/2006

Eyes Promptly wash eyes with plenty of water while lifting the eye lids. Continue to rinse for at least 15 minutes. Get medical attention immediately. Continue to rinse.

5 FIRE FIGHTING MEASURES

Extinguishing media Extinguishing powder. DO NOT USE WATER.

Unsuitable extinguishing agents Water, CO₂, halogenated extinguisher

Special fire fighting procedures -

Unusual fire & explosion hazards -

Protective measures in fire Wear self-contained breathing apparatus as combustion may produce hazardous fumes.

6 ACCIDENTAL RELEASE MEASURES

Personal precautions during spill Wear protective clothing and avoid inhalation as well as skin or eye contact. Keep away from ignition sources.

Precautions to protect environment Do not wash into water courses. Do not allow this material to be released to the environment without proper governmental permits.

Spill cleanup methods Avoid contact with skin or inhalation of spillage, dust or vapor, Avoid dust formation. Collect and reclaim or dispose in sealed containers in license waste. Extinguish all ignition sources. Avoid sparks, flames, heat and smoking. Ventilate.

Material Safety Data Sheet

Iron Nanopowder, 25 nm

Revision Date: 01/12/2010

Date Issued: 11/24/2006

7 HANDLING AND STORAGE

Usage precautions

Handle under dry argon.

Keep away from heat, sparks and open flame.

Do not use in confined spaces without adequate ventilation.

Storage precautions

Store in a tightly closed container in a cool, dry, well ventilated area.

Storage criteria

Chemical storage.

Do not store together with oxidizing salts, halogenated organics, other strong oxidants, strong acids and strong bases. Store away from air/water.

Store under dry inert gas.

8 EXPOSURE CONTROLS AND PERSONAL PROTECTION

Protective equipment

Safety goggles. Chemical resistant gloves.

Protective clothing. Respirator when high concentrations are present.

Process control measures

Provide eyewash station and safety shower.

Ventilation

Provide adequate general and local exhaust ventilation.

Exposure Limits

-

9 PHYSICAL AND CHEMICAL PROPERTIES

Appearance

Powder

Color

Black

Material Safety Data Sheet

Iron Nanopowder, 25 nm

Revision Date: 01/12/2010

Date Issued: 11/24/2006

Odor/taste	No characteristic odor.
Boiling Point	3000 °C
Melting Point	1536 °C
Flash Point	N/A
Flammability	Highly Flammable
Autoignition Temp	N/A
Oxidizing Properties	N/A
Explosive Properties	N/A
Explosion Limits	N/A
Vapor Pressure	1.33 hPa at 1787 °C
SG/Density	7.87 g/cm ³ at 20 °C
Partition Coefficient	N/A
Viscosity	N/A
Vapor Density	N/A
Saturated Vapor Conc.	N/A
Evaporation Rate	N/A
Bulk Density	N/A
Decomposition Temp.	N/A
Solvent Content	N/A
Water Content	N/A
Surface Tension	N/A
Conductivity	N/A
Solubility in Water	Insoluble

Material Safety Data Sheet

Iron Nanopowder, 25 nm

Revision Date: 01/12/2010

Date Issued: 11/24/2006

10 STABILITY AND REACTIVITY

Stability	No particular stability concerns.
Conditions to avoid	Oxidizing salts, halogenated organics, other strong oxidants, strong acids and strong bases. Air, water/moisture.

11 TOXICOLOGICAL INFORMATION

Acute toxicity	LD50 oral 20000 mg/kg (gpg) LD50 oral 30000 mg/kg (rat) LDLo 20 mg/kg (rbt)
Ingestion	irritating
Skin	irritating
Eyes	irritating

12 ECOLOGICAL INFORMATION

Environmental hazards	Do not allow material to be released to the environment without proper governmental permits.
------------------------------	--

13 DISPOSAL CONSIDERATIONS

Disposal method	Contact specialist disposal companies. Dispose of in accordance with Local Authority
------------------------	---

Material Safety Data Sheet

Iron Nanopowder, 25 nm

Revision Date: 01/12/2010

Date Issued: 11/24/2006

requirements. Recover and reclaim or recycle, if practical.

14 TRANSPORT INFORMATION

Land transport RID/ADR

UN#: 3089

Class: 4.1

Packing group: III

Item 13c

Danger code (Kemler): 40

Proper Shipping Name: Metal powder,
flammable, n.o.s., iron powder

Maritime transport IMDG

UN#: 3089

Class: 4.1

Packing group: III

Proper Shipping Name: Metal powder,
flammable, n.o.s., iron powder

Air transport IATA

UN#: 3089

Class: 4.1

Packing group: III

Proper Shipping Name: Metal powder,
flammable, n.o.s., iron powder

15 REGULATORY INFORMATION

In accordance with local and national regulations.

Material Safety Data Sheet

Iron Nanopowder, 25 nm

Revision Date: 01/12/2010

Date Issued: 11/24/2006

16 OTHER INFORMATION

DISCLAIMER

THE ABOVE INFORMATION IS BELIEVED TO BE CORRECT BUT DOES NOT PURPOSED TO BE ALL INCLUSIVE AND SHALL BE USED ONLY AS A GUIDE. IOLITEC SHALL NOT BE HELD LIABLE FOR ANY DAMAGE RESULTING FROM HANDLING OR FROM CONTACT WITH THE ABOVE PRODUCT. THIS INFORMATION RELATES ONLY TO THE SPECIFIC MATERIAL DESIGNATED AND MAY NOT BE VALID FOR SUCH MATERIAL USED IN COMBINATION WITH ANY OTHER MATERIALS OR ANY PROCESS. IT IS THE USER'S RESPONSIBILITY TO SATISFY HIMSELF AS TO THE SUITABILITY OF SUCH INFORMATION FOR HIS OWN PARTICULAR USE.

IN NO WAY SHALL IOLITEC BE LIABLE FOR ANY CLAIMS, LOSSES OR DAMAGES OF ANY THIRD PARTY OR FOR THE LOST PROFITS OR ANY SPECIAL, INDIRECT, INCIDENTAL, CONSEQUENTIAL OR EXEMPLARY DAMAGES, HOWSOEVER ARISING, EVEN IF THE COMPANY HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES.