

Creation Date 17-Jan-2011

Revision Date 17-Jul-2017

Revision Number 5

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

1.1. Product identification

| | |
|----------------------------------|--|
| Product Description: | Magnesium |
| Cat No. : | 413380000; 413380250; 413381000 |
| Synonyms | Magnesium metal (ribbons/turnings) |
| CAS-No | 7439-95-4 |
| EC-No. | 231-104-6 |
| Molecular Formula | Mg |
| Reach Registration Number | 01-2119537203-49 |

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

| | |
|---------------------------------------|---|
| Recommended Use | Laboratory chemicals. |
| Sector of use | SU3 - Industrial uses: Uses of substances as such or in preparations at industrial sites |
| Product category | PC21 - Laboratory chemicals |
| Process categories | PROC15 - Use as a laboratory reagent |
| Environmental release category | ERC6a - Industrial use resulting in manufacture of another substance (use of intermediates) |
| Uses advised against | No Information available |

1.3. Details of the supplier of the safety data sheet

| | |
|-----------------------|--|
| Company | Acros Organics BVBA Janssen Pharmaceuticaaan 3a 2440 Geel, Belgium |
| E-mail address | begel.sdsdesk@thermofisher.com |

1.4. Emergency telephone number

For information **US** call: 001-800-ACROS-01 / **Europe** call: +32 14 57 52 11
 Emergency Number **US**:001-201-796-7100 / **Europe**: +32 14 57 52 99
CHEMTREC Tel. No.**US**:001-800-424-9300 / **Europe**:001-703-527-3887

SECTION 2: HAZARDS IDENTIFICATION

2.1. Classification of the substance or mixture

CLP Classification - Regulation (EC) No 1272/2008

Physical hazards

| | |
|--|-------------------|
| Flammable solids | Category 1 (H228) |
| Self-heating substances/mixtures | Category 2 (H252) |
| Substances/mixtures which, in contact with water, emit flammable gases | Category 2 (H261) |

Health hazards

Based on available data, the classification criteria are not met

Environmental hazards

Based on available data, the classification criteria are not met

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2.2. Label elements



Signal Word

Danger

Hazard Statements

- H228 - Flammable solid
- H252 - Self-heating in large quantities; may catch fire
- H261 - In contact with water releases flammable gases
- May form combustible dust concentrations in air

Precautionary Statements

- P210 - Keep away from heat/sparks/open flames/hot surfaces. - No smoking
- P223 - Keep away from any possible contact with water, because of violent reaction and possible flash fire

2.3. Other hazards

No information available

SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS

3.1. Substances

| Component | CAS-No | EC-No. | Weight % | CLP Classification - Regulation (EC) No 1272/2008 |
|-----------|-----------|-------------------|----------|---|
| Magnesium | 7439-95-4 | EEC No. 231-104-6 | >95 | Flam. Sol. 1 (H228) Water-react. 2 (H261) Self-heat. 2 (H252) |

| | |
|---------------------------|------------------|
| Reach Registration Number | 01-2119537203-49 |
|---------------------------|------------------|

Full text of Hazard Statements: see section 16

SECTION 4: FIRST AID MEASURES

4.1. Description of first aid measures

| | |
|--------------|--|
| Eye Contact | Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. Obtain medical attention. |
| Skin Contact | Wash off immediately with plenty of water for at least 15 minutes. Obtain medical attention. |
| Ingestion | Do not induce vomiting. Get medical attention. |

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| | |
|-----------------------------------|--|
| Inhalation | Remove from exposure, lie down. Move to fresh air. If not breathing, give artificial respiration. |
| Protection of First-aiders | Ensure that medical personnel are aware of the material(s) involved, take precautions to protect themselves and prevent spread of contamination. |

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

No information available.

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

Notes to Physician Treat symptomatically.

SECTION 5: FIREFIGHTING MEASURES

5.1. Extinguishing media

Suitable Extinguishing Media

Dry chemical. approved class D extinguishers. clay. sodium carbonate. Do not use a solid water stream as it may scatter and spread fire.

Extinguishing media which must not be used for safety reasons

Carbon dioxide (CO₂).

5.2. Special hazards arising from the substance or mixture

Water reactive. Produce flammable gases on contact with water. Flammable.

Hazardous Combustion Products

Magnesium oxides.

5.3. Advice for firefighters

As in any fire, wear self-contained breathing apparatus pressure-demand, MSHA/NIOSH (approved or equivalent) and full protective gear.

SECTION 6: ACCIDENTAL RELEASE MEASURES

6.1. Personal precautions, protective equipment and emergency procedures

Use personal protective equipment. Ensure adequate ventilation. Avoid dust formation. Remove all sources of ignition.

6.2. Environmental precautions

See Section 12 for additional ecological information.

6.3. Methods and material for containment and cleaning up

Pick up and transfer to properly labelled containers. Remove all sources of ignition. Do not expose spill to water.

6.4. Reference to other sections

Refer to protective measures listed in Sections 8 and 13.

SECTION 7: HANDLING AND STORAGE

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7.1. Precautions for safe handling

Protect from moisture. Avoid contact with skin and eyes. Wash hands before breaks and immediately after handling the product. Ensure adequate ventilation. Wear personal protective equipment.

Hygiene Measures

Handle in accordance with good industrial hygiene and safety practice. Keep away from food, drink and animal feeding stuffs. Do not eat, drink or smoke when using this product. Remove and wash contaminated clothing before re-use. Wash hands before breaks and at the end of workday.

7.2. Conditions for safe storage, including any incompatibilities

Keep in a dry, cool and well-ventilated place. Keep container tightly closed. Keep away from heat and sources of ignition. Never allow product to get in contact with water during storage. Store under an inert atmosphere.

7.3. Specific end use(s)

Use in laboratories

SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1. Control parameters

Exposure limits

This product, as supplied, does not contain any hazardous materials with occupational exposure limits established by the region specific regulatory bodies

Biological limit values

This product, as supplied, does not contain any hazardous materials with biological limits established by the region specific regulatory bodies.

Monitoring methods

BS EN 14042:2003 Title Identifier: Workplace atmospheres. Guide for the application and use of procedures for the assessment of exposure to chemical and biological agents.

Derived No Effect Level (DNEL) No information available

| <u>Route of exposure</u> | Acute effects (local) | Acute effects (systemic) | Chronic effects (local) | Chronic effects (systemic) |
|--------------------------|------------------------------|---------------------------------|--------------------------------|-----------------------------------|
| Oral | | | | |
| Dermal | | | | |
| Inhalation | | | | |

Predicted No Effect Concentration (PNEC) No information available.

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8.2. Exposure controls

Engineering Measures

Ensure adequate ventilation, especially in confined areas. Use explosion-proof electrical/ventilating/lighting/equipment. Ensure that eyewash stations and safety showers are close to the workstation location.

Wherever possible, engineering control measures such as the isolation or enclosure of the process, the introduction of process or equipment changes to minimise release or contact, and the use of properly designed ventilation systems, should be adopted to control hazardous materials at source

Personal protective equipment

Eye Protection

Goggles (European standard - EN 166)

Hand Protection

Protective gloves

| Glove material | Breakthrough time | Glove thickness | EU standard | Glove comments |
|---|--------------------------------------|-----------------|-------------|-----------------------|
| Natural rubber Nitrile rubber Neoprene PVC | See manufacturers recommendations | - | EN 374 | (minimum requirement) |

Skin and body protection

Wear appropriate protective gloves and clothing to prevent skin exposure

Inspect gloves before use.

Please observe the instructions regarding permeability and breakthrough time which are provided by the supplier of the gloves. (Refer to manufacturer/supplier for information)

Ensure gloves are suitable for the task: Chemical compatability, Dexterity, Operational conditions, User susceptibility, e.g. sensitisation effects, also take into consideration the specific local conditions under which the product is used, such as the danger of cuts, abrasion.

Remove gloves with care avoiding skin contamination.

Respiratory Protection

No special protective equipment required.

Large scale/emergency use

No protective equipment is needed under normal use conditions. If exposure limits are exceeded or irritation is experienced, ventilation and evacuation may be required

Small scale/Laboratory use

No personal respiratory protective equipment normally required

Environmental exposure controls

No information available.

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

9.1. Information on basic physical and chemical properties

| | | |
|----------------------------|--------------------------|-----------------------------------|
| Appearance | Silver | |
| Physical State | Solid | |
| Odor | Odorless | |
| Odor Threshold | No data available | |
| pH | 7 | |
| Melting Point/Range | 651 °C / 1203.8 °F | |
| Softening Point | No data available | |
| Boiling Point/Range | 1107 °C / 2024.6 °F | |
| Flash Point | 500 °C / 932 °F | |
| Evaporation Rate | Not applicable | Method - No information available |
| Flammability (solid,gas) | No information available | Solid |
| Explosion Limits | No data available | |
| Vapor Pressure | negligible | |
| Vapor Density | Not applicable | Solid |
| Specific Gravity / Density | No data available | |

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| | | |
|---|--------------------------|-------|
| Bulk Density | No data available | |
| Water Solubility | Insoluble | |
| Solubility in other solvents | No information available | |
| Partition Coefficient (n-octanol/water) | | |
| Autoignition Temperature | 472.8 °C / 883 °F | |
| Decomposition Temperature | No data available | |
| Viscosity | Not applicable | Solid |
| Explosive Properties | No information available | |
| Oxidizing Properties | No information available | |

9.2. Other information

| | |
|-------------------|------|
| Molecular Formula | Mg |
| Molecular Weight | 24.3 |

SECTION 10: STABILITY AND REACTIVITY

10.1. Reactivity

Yes

10.2. Chemical stability

Stable under normal conditions, Air sensitive, Water reactive.

10.3. Possibility of hazardous reactions

| | |
|--------------------------|--|
| Hazardous Polymerization | Hazardous polymerization does not occur. |
| Hazardous Reactions | No information available. |

10.4. Conditions to avoid

Protect from water. Exposure to air. Incompatible products. Exposure to moist air or water.

10.5. Incompatible materials

Acids. Strong oxidizing agents. Halogens. Acid chlorides.

10.6. Hazardous decomposition products

Magnesium oxides.

SECTION 11: TOXICOLOGICAL INFORMATION

11.1. Information on toxicological effects

Product Information

(a) acute toxicity;

| | |
|------------|--|
| Oral | Based on available data, the classification criteria are not met |
| Dermal | Based on available data, the classification criteria are not met |
| Inhalation | Based on available data, the classification criteria are not met |

| Component | LD50 Oral | LD50 Dermal | LC50 Inhalation |
|-----------|--------------------------|-------------|-----------------|
| Magnesium | LD50 = 230 mg/kg (Rat) | | |

(b) skin corrosion/irritation; Based on available data, the classification criteria are not met

(c) serious eye damage/irritation; Based on available data, the classification criteria are not met

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(d) respiratory or skin sensitization;

Respiratory

Based on available data, the classification criteria are not met

Skin

Based on available data, the classification criteria are not met

(e) germ cell mutagenicity;

Based on available data, the classification criteria are not met

(f) carcinogenicity;

Based on available data, the classification criteria are not met

There are no known carcinogenic chemicals in this product

(g) reproductive toxicity;

Based on available data, the classification criteria are not met

(h) STOT-single exposure;

Based on available data, the classification criteria are not met

(i) STOT-repeated exposure;

Based on available data, the classification criteria are not met

Target Organs

None known.

(j) aspiration hazard;

Not applicable

Solid

Symptoms / effects, both acute and delayed No information available

SECTION 12: ECOLOGICAL INFORMATION

12.1. Toxicity

Ecotoxicity effects

Contains no substances known to be hazardous to the environment or that are not degradable in waste water treatment plants.

12.2. Persistence and degradability

Persistence

Insoluble in water.

Degradability

Not relevant for inorganic substances.

12.3. Bioaccumulative potential

May have some potential to bioaccumulate

12.4. Mobility in soil

Spillage unlikely to penetrate soil Is not likely mobile in the environment due its low water solubility.

12.5. Results of PBT and vPvB assessment

No data available for assessment.

12.6. Other adverse effects

Endocrine Disruptor Information

This product does not contain any known or suspected endocrine disruptors

Persistent Organic Pollutant

This product does not contain any known or suspected substance

Ozone Depletion Potential

This product does not contain any known or suspected substance

SECTION 13: DISPOSAL CONSIDERATIONS

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13.1. Waste treatment methods

Waste from Residues / Unused Products

Waste is classified as hazardous. Dispose of in accordance with the European Directives on waste and hazardous waste. Dispose of in accordance with local regulations.

Contaminated Packaging

Dispose of this container to hazardous or special waste collection point. Empty containers retain product residue, (liquid and/or vapor), and can be dangerous. Keep product and empty container away from heat and sources of ignition.

European Waste Catalogue (EWC)

According to the European Waste Catalogue, Waste Codes are not product specific, but application specific.

Other Information

Waste codes should be assigned by the user based on the application for which the product was used. Do not dispose of waste into sewer. Can be incinerated, when in compliance with local regulations.

SECTION 14: TRANSPORT INFORMATION

IMDG/IMO

| | |
|---|-----------|
| <u>14.1. UN number</u> | UN1869 |
| <u>14.2. UN proper shipping name</u> | MAGNESIUM |
| <u>14.3. Transport hazard class(es)</u> | 4.1 |
| <u>14.4. Packing group</u> | III |

ADR

| | |
|---|-----------|
| <u>14.1. UN number</u> | UN1869 |
| <u>14.2. UN proper shipping name</u> | MAGNESIUM |
| <u>14.3. Transport hazard class(es)</u> | 4.1 |
| <u>14.4. Packing group</u> | III |

IATA

| | |
|---|-----------|
| <u>14.1. UN number</u> | UN1869 |
| <u>14.2. UN proper shipping name</u> | MAGNESIUM |
| <u>14.3. Transport hazard class(es)</u> | 4.1 |
| <u>14.4. Packing group</u> | III |

14.5. Environmental hazards No hazards identified

14.6. Special precautions for user No special precautions required

14.7. Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code Not applicable, packaged goods

SECTION 15: REGULATORY INFORMATION

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

International Inventories X = listed

| Component | EINECS | ELINCS | NLP | TSCA | DSL | NDSL | PICCS | ENCS | IECSC | AICS | KECL |
|-----------|-----------|--------|-----|------|-----|------|-------|------|-------|------|------|
| Magnesium | 231-104-6 | - | | X | X | - | X | - | X | X | X |

National Regulations

ACR41338

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| Component | Germany - Water Classification (VwVwS) | Germany - TA-Luft Class |
|-----------|--|-------------------------|
| Magnesium | nwg - nicht wassergefährdend (non-hazardous to waters) | |

Take note of Control of Substances Hazardous to Health Regulations (COSHH) 2002 and 2005 Amendment.

15.2. Chemical safety assessment

A Chemical Safety Assessment/Report (CSA/CSR) has not been conducted

SECTION 16: OTHER INFORMATION

Full text of H-Statements referred to under sections 2 and 3

H228 - Flammable solid

H252 - Self-heating in large quantities; may catch fire

H261 - In contact with water releases flammable gases

Legend

CAS - Chemical Abstracts Service

EINECS/ELINCS - European Inventory of Existing Commercial Chemical Substances/EU List of Notified Chemical Substances

PICCS - Philippines Inventory of Chemicals and Chemical Substances

IECSC - Chinese Inventory of Existing Chemical Substances

KECL - Korean Existing and Evaluated Chemical Substances

TSCA - United States Toxic Substances Control Act Section 8(b) Inventory

DSL/NDL - Canadian Domestic Substances List/Non-Domestic Substances List

ENCS - Japanese Existing and New Chemical Substances

AICS - Australian Inventory of Chemical Substances

NZIoC - New Zealand Inventory of Chemicals

WEL - Workplace Exposure Limit

ACGIH - American Conference of Governmental Industrial Hygienists

DNEL - Derived No Effect Level

RPE - Respiratory Protective Equipment

LC50 - Lethal Concentration 50%

NOEC - No Observed Effect Concentration

PBT - Persistent, Bioaccumulative, Toxic

TWA - Time Weighted Average

IARC - International Agency for Research on Cancer

PNEC - Predicted No Effect Concentration

LD50 - Lethal Dose 50%

EC50 - Effective Concentration 50%

POW - Partition coefficient Octanol:Water

vPvB - very Persistent, very Bioaccumulative

ADR - European Agreement Concerning the International Carriage of Dangerous Goods by Road

IMO/IMDG - International Maritime Organization/International Maritime Dangerous Goods Code

OECD - Organisation for Economic Co-operation and Development

BCF - Bioconcentration factor

ICAO/IATA - International Civil Aviation Organization/International Air Transport Association

MARPOL - International Convention for the Prevention of Pollution from Ships

ATE - Acute Toxicity Estimate

VOC - Volatile Organic Compounds

Key literature references and sources for data

Suppliers safety data sheet, Chemadvisor - LOLI, Merck index, RTECS

Training Advice

Chemical hazard awareness training, incorporating labelling, Safety Data Sheets (SDS), Personal Protective Equipment (PPE) and hygiene.

Use of personal protective equipment, covering appropriate selection, compatibility, breakthrough thresholds, care, maintenance, fit and standards.

First aid for chemical exposure, including the use of eye wash and safety showers.

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Revision Summary

Update to Format.

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

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materials or in any process, unless specified in the text

End of Safety Data Sheet