



SAFETY DATA SHEET

Issue Date 08-Jul-2015

Revision Date 30-Jan-2020

Version 3

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

Product identifier

Product Name Magnesium Chloride (from Titanium Production)

Other means of identification

Product Code SAC026

UN/ID No. 2813

Synonyms Magnesium Chloride (from Titanium Production): Kroll reduction salt from Titanium production (Product #106-A)

Recommended use of the chemical and restrictions on use

Recommended Use Chemical intermediate.

Uses advised against

Details of the supplier of the safety data sheet

Manufacturer Address

ATI, 1000 Six PPG Place, Pittsburgh, PA
15222 USA

Emergency telephone number

Emergency Telephone Chemtrec: 1-800-424-9300

2. HAZARDS IDENTIFICATION

Classification

This material is considered hazardous by the 2012 OSHA Hazard Communication Standard (29 CFR 1910.1200)

Substances or mixtures which, in contact with water, emit flammable gases

Category 3

Label elements

Emergency Overview

Warning

Hazard statements

In contact with water releases flammable gases



Appearance Flakes, Chunks, Powder

Physical state Solid

Odor Odorless

Precautionary Statements - Prevention

Wear protective gloves/protective clothing/eye protection

Protect from moisture

Do not breathe resulting gases

Precautionary Statements - Response

In case of fire: Use salt (NaCl) or class D dry powder for extinction

Precautionary Statements - Storage

Store in a dry place

Precautionary Statements - Disposal

Dispose of contents/container to an approved waste disposal plant

Hazards not otherwise classified (HNOC)

Not applicable

Other Information

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3. COMPOSITION/INFORMATION ON INGREDIENTS

Synonyms

Magnesium Chloride (from Titanium Production): Kroll reduction salt from Titanium production, (Product #106-A).

Chemical Name	CAS No.	Weight-%
Magnesium Chloride	7786-30-3	>99
Water	7732-18-5	0-1
Magnesium	7439-95-4	0-0.1
Titanium	7440-32-6	0-0.1

4. FIRST AID MEASURES

First aid measures

Eye contact

In case of contact with eyes, rinse immediately. If eye irritation persists: Get medical advice/attention.

Skin Contact

Wash off immediately with soap and plenty of water.

Inhalation

If fumes from reactions are inhaled, move to fresh air immediately. Call a physician or poison control center immediately.

Ingestion

IF SWALLOWED: Call a POISON CENTER or doctor/physician if you feel unwell.

Most important symptoms and effects, both acute and delayed

Symptoms

None anticipated.

Indication of any immediate medical attention and special treatment needed

Note to physicians

Treat symptomatically.

5. FIRE-FIGHTING MEASURES

Suitable extinguishing media

Non-combustible.

Unsuitable extinguishing media If a fire occurs in the area, avoid water contact with the product to prevent evolution of hazardous gases.

Specific hazards arising from the chemical

Non-combustible.

Hazardous combustion products Not applicable.

Explosion data

Sensitivity to Mechanical Impact None.

Sensitivity to Static Discharge None.

Protective equipment and precautions for firefighters

Firefighters should wear self-contained breathing apparatus and full firefighting turnout gear.

6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures

Personal precautions Use personal protective equipment as required.

For emergency responders Use personal protective equipment as required. Follow Emergency Response Guidebook, Guide No. 138.

Environmental precautions

Environmental precautions Collect spillage to prevent release to the environment.

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 Sweep or shovel material into dry containers. Avoid creating uncontrolled dust. Wash the spill location thoroughly with water - remaining magnesium chloride residue would cause the floor to become slippery.

7. HANDLING AND STORAGE

Precautions for safe handling

Advice on safe handling Handle in accordance with good industrial hygiene and safety practice.

Conditions for safe storage, including any incompatibilities

Storage Conditions Magnesium chloride solutions in uncoated steel tanks may activate the metal surface so that when the tanks are drained the surfaces rust quickly consuming available oxygen. Use safe tank entry procedures with good ventilation and oxygen level monitoring.

Incompatible materials Unintentional contact with water.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Control parameters

Exposure Guidelines

Chemical Name	ACGIH TLV	OSHA PEL
Magnesium Chloride 7786-30-3	-	-
Water 7732-18-5	-	-
Titanium 7440-32-6	-	-
Magnesium 7439-95-4	-	-

Appropriate engineering controls

Engineering Controls Avoid generation of uncontrolled particles.

Individual protection measures, such as personal protective equipment

- Eye/face protection** When airborne particles may be present, appropriate eye protection is recommended. For example, tight-fitting goggles, foam-lined safety glasses or other protective equipment that shield the eyes from particles.
- Skin and body protection** Wear protective gloves.
- Respiratory protection** When particulates/fumes/gases are generated and if exposure limits are exceeded or irritation is experienced, proper approved respiratory protection should be worn. Positive-pressure supplied air respirators may be required for high airborne contaminant concentrations. Respiratory protection must be provided in accordance with current local regulations.

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

9. PHYSICAL AND CHEMICAL PROPERTIES

Information on basic physical and chemical properties

Physical state	Solid	Odor	Odorless
Appearance	Flakes, Chunks, Powder	Odor threshold	Not applicable
Color	Grey silver		

<u>Property</u>	<u>Values</u>	<u>Remarks • Method</u>
pH	-	Not applicable
Melting point / freezing point	710 °C / 1310 °F	
Boiling point / boiling range	-	
Flash point	-	Not applicable
Evaporation rate	-	Not applicable
Flammability (solid, gas)	-	Not flammable
Flammability Limit in Air		
Upper flammability limit:	-	
Lower flammability limit:	-	
Vapor pressure	-	Not applicable
Vapor density	-	Not applicable
Specific Gravity	2.3	
Water solubility	-	
Solubility in other solvents	-	
Partition coefficient	-	Not applicable
Autoignition temperature	-	Not applicable
Decomposition temperature	-	Not applicable
Kinematic viscosity	-	Not applicable
Dynamic viscosity	-	Not applicable
Explosive properties	Not applicable	
Oxidizing properties	Not applicable	

Other Information

Softening point	-
Molecular weight	-
VOC Content (%)	Not applicable
Density	-
Bulk density	100-110 lb/ft3

10. STABILITY AND REACTIVITY

Reactivity

Reacts with water

Chemical stability

Stable under normal conditions.

Possibility of Hazardous Reactions

Reacts with water.

Hazardous polymerization Hazardous polymerization does not occur.

Conditions to avoid

Unintentional contact with water. When mixed with water, heat, steam, and possibly hydrogen and hydrogen sulfide gas may be generated. Do not mix magnesium chloride with water except in a well-ventilated area, under conditions where heat and any gas that may evolve can easily dissipate.

Incompatible materials

Unintentional contact with water.

Hazardous Decomposition Products

None while dry and cool. Magnesium chloride heated above 110°C in the presence of moisture will evolve hydrogen chloride fumes.

11. TOXICOLOGICAL INFORMATION

Information on likely routes of exposure

Product Information

Inhalation Product not classified.
Eye contact Product not classified.
Skin Contact Product not classified.
Ingestion Product not classified.

Chemical Name	Oral LD50	Dermal LD50	Inhalation LC50
Magnesium Chloride 7786-30-3	5000 mg/kg bw	>2000 mg/kg bw	-
Water 7732-18-5	-	-	-
Titanium 7440-32-6	> 5000 mg/kg bw	-	-
Magnesium 7439-95-4	>2000 mg/kg bw	-	-

Information on toxicological effects

Symptoms None known.

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

Acute toxicity Product not classified.
Skin corrosion/irritation Product not classified.
Serious eye damage/eye irritation Product not classified.
Sensitization Product not classified.
Germ cell mutagenicity Product not classified.
Carcinogenicity Product not classified.

Reproductive toxicity Product not classified.

STOT - single exposure Product not classified.
 STOT - repeated exposure Product not classified.
 Aspiration hazard Product not classified.

12. ECOLOGICAL INFORMATION

Ecotoxicity

This product as shipped is not classified for aquatic toxicity.

Chemical Name	Algae/aquatic plants	Fish	Toxicity to microorganisms	Crustacea
Magnesium Chloride 7786-30-3	The 72 h EC50 of magnesium chloride to <i>Desmodesmus subspicatus</i> was greater than 100 mg of MgCl ₂ /L.	The 96 h LC50 of magnesium chloride to <i>Pimephales promelas</i> was 2119.3 mg of MgCl ₂ /L.	The 3 h EC50 of magnesium chloride for activated sludge was greater than 900 mg of MgCl ₂ /L.	The 48 h LC50 of magnesium chloride hexahydrate to <i>Daphnia magna</i> was 548.4 mg of MgCl ₂ /L.
Water 7732-18-5	-	-	-	-
Titanium 7440-32-6	The 72 h EC50 of titanium dioxide to <i>Pseudokirchnerella subcapitata</i> was 61 mg of TiO ₂ /L.	The 96 h LC50 of titanium dioxide to <i>Cyprinodon variegatus</i> was greater than 10,000 mg of TiO ₂ /L. The 96 h LC50 of titanium dioxide to <i>Pimephales promelas</i> was greater than 1,000 mg of TiO ₂ /L .	The 3 h EC50 of titanium dioxide for activated sludge were greater than 1000 mg/L.	The 48 h EC50 of titanium dioxide to <i>Daphnia Magna</i> was greater than 1000 mg of TiO ₂ /L.
Magnesium 7439-95-4	The 72 h EC50 of magnesium chloride hexahydrate to <i>Desmodesmus subspicatus</i> was greater than 12 mg of Mg/L.	The 96 h LC50 of magnesium chloride to <i>Pimephales promelas</i> was 541 mg of Mg/L.	The 3 h EC50 of magnesium chloride hexahydrate for activated sludge was greater than 108 mg of Mg/L.	The 48 h LC50 of magnesium chloride to <i>Ceriodaphnia dubia</i> was 225 mg of Mg/L. The 48 h LC50 of magnesium chloride hexahydrate to <i>Daphnia magna</i> was 322 mg of Mg/L.

Other adverse effects

13. DISPOSAL CONSIDERATIONS

Waste treatment methods

Disposal of wastes Disposal should be in accordance with applicable regional, national and local laws and regulations.

Contaminated packaging Disposal should be in accordance with applicable regional, national and local laws and regulations.

This product contains one or more substances that are listed with the State of California as a hazardous waste.

14. TRANSPORT INFORMATION

DOT Regulated
UN/ID No. 2813
Proper shipping name Water Reactive Solid, n.o.s., (Magnesium Chloride)
Hazard Class 4.3
Packing Group III
Special Provisions IB8, IP4, T1, TP33

Emergency Response Guide Number 138

15. REGULATORY INFORMATION

International Inventories

TSCA Complies
 DSL/NDSL Complies
 EINECS/ELINCS Complies
 ENCS Complies
 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

US Federal Regulations

SARA 313

Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 (SARA). This product does not contain any chemicals which are subject to the reporting requirements of the Act and Title 40 of the Code of Federal Regulations, Part 372

SARA 311/312 Hazard Categories

Acute health hazard No
 Chronic Health Hazard No
 Fire hazard No
 Sudden release of pressure hazard No
 Reactive Hazard Yes

CWA (Clean Water Act)

This product does not contain any substances regulated as pollutants pursuant to the Clean Water Act (40 CFR 122.21 and 40 CFR 122.42)

CERCLA

This material, as supplied, does not contain any substances regulated as hazardous substances under the Comprehensive Environmental Response Compensation and Liability Act (CERCLA) (40 CFR 302) or the Superfund Amendments and Reauthorization Act (SARA) (40 CFR 355). There may be specific reporting requirements at the local, regional, or state level pertaining to releases of this material

US State Regulations

California Proposition 65

This product does not contain any Proposition 65 chemicals

U.S. State Right-to-Know Regulations

Chemical Name	New Jersey	Massachusetts	Pennsylvania
Water 7732-18-5			X

Titanium 7440-32-6	X		
Magnesium 7439-95-4	X	X	X

U.S. EPA Label Information

EPA Pesticide Registration Number Not applicable

16. OTHER INFORMATION

NFPA	Health hazards 0	Flammability 0	Instability 1	Physical and Chemical Properties -
HMIS	Health hazards 0	Flammability 0	Physical hazards 1	Personal protection X
<i>Chronic Hazard Star Legend</i>	<i>* = Chronic Health Hazard</i>			

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Revision Note

SDS sections updated: 2, 3, 4, 5, 6, 9, 10, 12, 14, 16

Note:

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

Additional information available from: Safety data sheets and labels available at ATImetals.com