



SAFETY DATA SHEET

Issue Date 08-Jul-2015

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Version 3

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

1.1. Product identifier

Product Code SAC026
Product Name Magnesium Chloride (from Titanium Production)

UN/ID no 2813
Synonyms Magnesium Chloride (from Titanium Production): Kroll reduction salt from Titanium production (Product #106-A)

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

Recommended Use Chemical intermediate

Uses advised against

1.3. Details of the supplier of the safety data sheet

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

1.4. Emergency telephone number

Emergency Telephone Chemtrec: +1-703-741-5970

Section 2: HAZARDS IDENTIFICATION

This material is classified per Regulation (EC) No 1272/2008.

2.1. Classification of the substance or mixture *Regulation (EC) No 1272/2008*

Substances or mixtures which, in contact with water, emit flammable gases	Category 3
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2.2. Label elements

Emergency Overview

Warning

Hazard statements

H261 - In contact with water releases flammable gases



Appearance Flakes, Chunks, Powder

Physical state Solid

Odour Odourless

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

2.3 Hazards not otherwise classified (HNOC)

Not applicable

Other Information

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Section 3: COMPOSITION/INFORMATION ON INGREDIENTS

3.1 Substances

Synonyms

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

Chemical Name	EC No	CAS No	Weight-%
Magnesium Chloride	232-094-6	7786-30-3	>99
Water	231-791-2	7732-18-5	0-1
Titanium	231-142-3	7440-32-6	0-0.1
Magnesium	231-104-6	7439-95-4	0-0.1

Section 4: FIRST AID MEASURES

4.1. Description of first aid measures

Inhalation

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

Skin Contact

Wash off immediately with soap and plenty of water.

Eye contact

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

Ingestion

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

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

Symptoms

None anticipated.

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

Note to doctors

Treat symptomatically.

Section 5: FIREFIGHTING MEASURES

5.1. Extinguishing media

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

5.2. Special hazards arising from the substance or mixture

Non-combustible

Hazardous combustion products Not applicable.

5.3. Advice for firefighters

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

Section 6: ACCIDENTAL RELEASE MEASURES

6.1. 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.

6.2. Environmental precautions

Collect spillage to prevent release to the environment.

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

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.

6.4. Reference to other sections

See Section 12: ECOLOGICAL INFORMATION.

Section 7: HANDLING AND STORAGE

7.1. Precautions for safe handling

Advice on safe handling

Handle in accordance with good industrial hygiene and safety practice.

General Hygiene Considerations

Handle in accordance with good industrial hygiene and safety practice.

7.2. 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.

7.3. Specific end use(s)

Risk Management Methods (RMM)

The information required is contained in this Safety Data Sheet.

Section 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1. Control parameters

Chemical Name	European Union	United Kingdom	France	Spain	Germany
Magnesium Chloride 7786-30-3	-	-	-	-	-
Water 7732-18-5	-	-	-	-	-
Titanium 7440-32-6	-	-	-	-	-
Magnesium 7439-95-4	-	-	-	-	-
Chemical Name	Italy	Portugal	Netherlands	Finland	Denmark
Magnesium Chloride 7786-30-3	-	-	-	-	-
Water 7732-18-5	-	-	-	-	-
Titanium 7440-32-6	-	-	-	-	-
Magnesium 7439-95-4	-	-	-	-	-
Chemical Name	Austria	Switzerland	Poland	Norway	Ireland
Magnesium Chloride 7786-30-3	-	-	-	-	-
Water 7732-18-5	-	-	-	-	-
Titanium 7440-32-6	-	-	STEL: 30 mg/m ³ TWA: 10 mg/m ³	-	-
Magnesium 7439-95-4	-	-	-	-	-

Derived No Effect Level (DNEL) No DNELs are available for this product as a whole

Predicted No Effect Concentration (PNEC) No PNECs are available for this product as a whole.

8.2. Exposure controls

Engineering Controls Avoid generation of uncontrolled particles.

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 contaminate concentrations. Respiratory protection must be provided in accordance with current local regulations.

Environmental exposure controls Section 6: ACCIDENTAL RELEASE MEASURES.

Section 9: PHYSICAL AND CHEMICAL PROPERTIES

9.1. Information on basic physical and chemical properties

Physical state	Solid		
Appearance	Flakes, Chunks, Powder	Odour	Odourless
Colour	grey Silver	Odour threshold	Not applicable
<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		-	
Vapour pressure	-	Not applicable	
Vapour density	-	Not applicable	
Specific Gravity	2.3		
Water solubility	-		
Solubility(ies)			
Partition coefficient	-	Not applicable	
Autoignition temperature	-	Not applicable	
Decomposition temperature	-	Not applicable	
Kinematic viscosity	-	Not applicable	
Dynamic viscosity	-	Not applicable	
Explosive properties	Not applicable		
Oxidising properties	Not applicable		

9.2. Other information

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

Section 10: STABILITY AND REACTIVITY

10.1. Reactivity

Reacts with water .

10.2. Chemical stability

Stable under normal conditions.

Explosion data

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

10.3. Possibility of hazardous reactions

Hazardous polymerisation

Hazardous polymerisation does not occur.

Possibility of Hazardous Reactions

Reacts with water.

10.4. 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.

10.5. Incompatible materials

Unintentional contact with water.

10.6. Hazardous decomposition products

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

Section 11: TOXICOLOGICAL INFORMATION

11.1. Information on toxicological effects

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	5000 mg/kg bw	>2000 mg/kg bw	-
Water	-	-	-
Titanium	> 5000 mg/kg bw	-	-
Magnesium	>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.
Sensitisation	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.

Section 12: ECOLOGICAL INFORMATION

12.1. Toxicity

This product as shipped is not classified for aquatic toxicity

Chemical Name	Algae/aquatic plants	Fish	Toxicity to microorganisms	Crustacea
Magnesium Chloride	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	-	-	-	-
Titanium	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	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.

12.2. Persistence and degradability

12.3. Bioaccumulative potential

12.4. Mobility in soil

12.5. Results of PBT and vPvB assessment

The PBT and vPvB criteria do not apply to inorganic substances.

12.6. Other adverse effects

Section 13: DISPOSAL CONSIDERATIONS

13.1. Waste treatment methods

Waste from residues/unused products

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.

Section 14: TRANSPORT INFORMATION

IMDG

14.1 UN/ID no	2813
14.2 Proper shipping name	Water Reactive Solid, n.o.s., (Magnesium Chloride)
14.3 Hazard Class	4.3
14.4 Packing Group	III

14.5 Marine pollutant Not applicable
 14.6 Special Provisions IB8, IP4, T1, TP33
 14.7 Transport in bulk according to Annex II of MARPOL and the IBC Code Not applicable

RID

14.1 UN/ID no 2813
 14.2 Proper shipping name Water Reactive Solid, n.o.s., (Magnesium Chloride)
 14.3 Hazard Class 4.3
 14.4 Packing Group III
 14.5 Environmental hazard Not applicable
 14.6 Special Provisions IB8, IP4, T1, TP33

ADR

14.1 UN/ID no 2813
 14.2 Proper shipping name Water Reactive Solid, n.o.s., (Magnesium Chloride)
 14.3 Hazard Class 4.3
 14.4 Packing Group III
 14.5 Environmental hazard Not applicable
 14.6 Special Provisions IB8, IP4, T1, TP33

ICAO (air)

14.1 UN/ID no 2813
 14.2 Proper shipping name Water reactive solid, n.o.s. (Magnesium Chloride)
 14.3 Hazard Class 4.3
 14.4 Packing Group III
 14.5 Environmental hazard Not applicable
 14.6 Special Provisions IB8, IP4, T1, TP33

IATA

14.1 UN/ID no 2813
 14.2 Proper shipping name Water reactive solid, n.o.s. (Magnesium Chloride)
 14.3 Hazard Class 4.3
 14.4 Packing Group III
 Description Not applicable
 14.5 Environmental hazard Not applicable
 14.6 Special Provisions IB8, IP4, T1, TP33 **ERG** 138
Code

Section 15: REGULATORY INFORMATION

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

Chemical Name	French RG number	Title
Magnesium Chloride 7786-30-3	-	-
Water 7732-18-5	-	-
Titanium 7440-32-6	-	-
Magnesium 7439-95-4	-	-

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

Authorisations and/or restrictions on use:

This product does not contain substances subject to authorisation (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).

International Inventories

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

15.2. Chemical safety assessment

No chemical safety assessment has been performed for this product.

Section 16: OTHER INFORMATION

Issue Date	08-Jul-2015
Revision Date	30-Jan-2020
Revision Note	SDS sections updated: 2, 3, 4, 5, 6, 9, 10, 12, 14, 16.

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

Note:

The information provided in this Material 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