



SAFETY DATA SHEET

MATERION

SECTION 1: Identification of the substance/mixture and of the company/undertaking

1.1. Product identifier

Name of the substance	Magnesium fluoride (MgF ₂)
Identification number	231-995-1 (EC number)
Registration number	-
Document number	1WW
Synonyms	MAGNESIUM FLUORIDE * Magnesium difluoride * Hydrofluoric acid salts (as F): magnesium fluoride * Magnesium fluoride (MgF ₂)
Materion Code	1WW
Issue date	04-December-2013
Revision date	09-December-2019

1.3. Details of the supplier of the safety data sheet

Supplier

Company name	Materion Advanced Chemicals Inc.
Address	407 N. 13th Street 1316 W. St. Paul Avenue Milwaukee, WI 53233 United States
Division	Milwaukee
Telephone	414.212.0257
e-mail	advancedmaterials@materion.com
Contact person	Laura Hamilton

1.4. Emergency telephone number

Supersedes date	12-January-2018
Version number	10

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

Identified uses	Not available.
Uses advised against	None known.

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

The substance has been assessed and/or tested for its physical, health and environmental hazards and the following classification applies. According to GHS criteria.

Classification according to Regulation (EC) No 1272/2008 as amended

This substance does not meet the criteria for classification according to Regulation (EC) 1272/2008 as amended.

Hazard summary Causes skin irritation. Causes serious eye irritation. May cause irritation to the respiratory system.

2.2. Label elements

Label according to Regulation (EC) No. 1272/2008 as amended

Contains: Magnesium fluoride

Hazard pictograms



Signal word Warning

Hazard statements

H315	Causes skin irritation.
H319	Causes serious eye irritation.
H335	May cause respiratory irritation.

Precautionary statements

Prevention

P260	Do not breathe dust/fume/gas/mist/vapours/spray.
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P264 Wash thoroughly after handling.

Response

P305 + P351 + P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

P304 + P340 + P312 IF INHALED: Remove person to fresh air and keep comfortable for breathing. Get medical assistance if you feel unwell.

P308 + P313 IF exposed or concerned: Get medical advice/attention.

Storage

P403 + P233 Store away from incompatible materials.
Store in a well-ventilated place. Keep container tightly closed.

Disposal

P501 Dispose of contents/container in accordance with local/regional/national/international regulations.

Supplemental label information

For further information, please contact the Product Stewardship Department at +1.800.862.4118.

2.3. Other hazards

Not a PBT or vPvB substance or mixture.

SECTION 3: Composition/information on ingredients

3.1. Substances

General information

Chemical name	%	CAS-No. / EC No.	REACH Registration No.	Index No.	Notes
Magnesium fluoride	100	7783-40-6 231-995-1	-	-	#
Classification:	Skin Irrit. 2;H315, STOT SE 3;H335				

List of abbreviations and symbols that may be used above

DSD: Directive 67/548/EEC.

CLP: Regulation No. 1272/2008.

#: This substance has been assigned Union workplace exposure limit(s).

M: M-factor

PBT: persistent, bioaccumulative and toxic substance.

vPvB: very persistent and very bioaccumulative substance.

All concentrations are in percent by weight unless ingredient is a gas. Gas concentrations are in percent by volume.

SECTION 4: First aid measures

General information

Ensure that medical personnel are aware of the material(s) involved, and take precautions to protect themselves.

4.1. Description of first aid measures

Inhalation

Move to fresh air. Call a physician if symptoms develop or persist.

Skin contact

Wash off with soap and water. Get medical attention if irritation develops and persists.

Eye contact

Rinse with water. Remove contact lenses, if present and easy to do. Get medical attention if irritation develops and persists.

Ingestion

Rinse mouth. Get medical attention if symptoms occur.

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

Severe eye irritation. Symptoms may include stinging, tearing, redness, swelling, and blurred vision. May cause respiratory irritation. Skin irritation.

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

Treat symptomatically.

SECTION 5: Firefighting measures

General fire hazards

No unusual fire or explosion hazards noted.

5.1. Extinguishing media

Suitable extinguishing media

Water fog. Foam. Dry chemical powder. Carbon dioxide (CO₂).

Unsuitable extinguishing media

Do not use water jet as an extinguisher, as this will spread the fire. Use fire-extinguishing media appropriate for surrounding materials.

5.2. Special hazards arising from the substance or mixture

During fire, gases hazardous to health may be formed.

5.3. Advice for firefighters

Special protective equipment for firefighters	Self-contained breathing apparatus and full protective clothing must be worn in case of fire.
Special firefighting procedures	Move containers from fire area if you can do so without risk.

Specific methods Use standard firefighting procedures and consider the hazards of other involved materials.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

For non-emergency personnel	Keep unnecessary personnel away. For personal protection, see section 8 of the SDS.
For emergency responders	Keep unnecessary personnel away.

6.2. Environmental precautions Avoid discharge into drains, water courses or onto the ground.

6.3. Methods and material for containment and cleaning up Stop the flow of material, if this is without risk. Following product recovery, flush area with water.

6.4. Reference to other sections For personal protection, see section 8. For waste disposal, see section 13.

SECTION 7: Handling and storage

7.1. Precautions for safe handling Avoid prolonged exposure. Observe good industrial hygiene practices.

7.2. Conditions for safe storage, including any incompatibilities Store in a closed container away from incompatible materials. Store in tightly closed container. Store away from incompatible materials (see Section 10 of the SDS).

7.3. Specific end use(s) Not available.

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

Occupational exposure limits

Austria. MAK List, OEL Ordinance (GwV), BGBl. II, no. 184/2001

Material	Type	Value	Form
Magnesium fluoride (CAS 7783-40-6)	MAK	2,5 mg/m ³	Inhalable fraction.
	STEL	12,5 mg/m ³	Inhalable fraction.

Belgium. Exposure Limit Values.

Material	Type	Value
Magnesium fluoride (CAS 7783-40-6)	TWA	2,5 mg/m ³

Bulgaria. OELs. Regulation No 13 on protection of workers against risks of exposure to chemical agents at work

Material	Type	Value
Magnesium fluoride (CAS 7783-40-6)	TWA	2,5 mg/m ³

Croatia. Dangerous Substance Exposure Limit Values in the Workplace (ELVs), Annexes 1 and 2, Narodne Novine, 13/09

Material	Type	Value
Magnesium fluoride (CAS 7783-40-6)	MAC	2,5 mg/m ³

Czech Republic. OELs. Government Decree 361

Material	Type	Value
Magnesium fluoride (CAS 7783-40-6)	Ceiling	5 mg/m ³
	TWA	2,5 mg/m ³

Denmark. Exposure Limit Values

Material	Type	Value
Magnesium fluoride (CAS 7783-40-6)	TLV	2,5 mg/m ³

Estonia. OELs. Occupational Exposure Limits of Hazardous Substances. (Annex of Regulation No. 293 of 18 September 2001)

Material	Type	Value
Magnesium fluoride (CAS 7783-40-6)	TWA	2,5 mg/m ³

Finland. Workplace Exposure Limits

Material	Type	Value
Magnesium fluoride (CAS 7783-40-6)	TWA	2,5 mg/m ³

France. Threshold Limit Values (VLEP) for Occupational Exposure to Chemicals in France, INRS ED 984

Material	Type	Value
Magnesium fluoride (CAS 7783-40-6)	VME	2,5 mg/m ³

Hungary. OELs. Joint Decree on Chemical Safety of Workplaces

Material	Type	Value
Magnesium fluoride (CAS 7783-40-6)	STEL	10 mg/m ³
	TWA	2,5 mg/m ³

Iceland. OELs. Regulation 154/1999 on occupational exposure limits

Material	Type	Value
Magnesium fluoride (CAS 7783-40-6)	TWA	0,6 mg/m ³

Latvia. OELs. Occupational exposure limit values of chemical substances in work environment

Material	Type	Value
Magnesium fluoride (CAS 7783-40-6)	STEL	2,5 mg/m ³
	TWA	0,5 mg/m ³

Lithuania. OELs. Limit Values for Chemical Substances, General Requirements

Material	Type	Value
Magnesium fluoride (CAS 7783-40-6)	TWA	2,5 mg/m ³

Luxembourg. Binding Occupational exposure limit values (Annex I), Memorial A

Material	Type	Value
Magnesium fluoride (CAS 7783-40-6)	TWA	2,5 mg/m ³

Malta. OELs. Occupational Exposure Limit Values (L.N. 227. of Occupational Health and Safety Authority Act (CAP. 424), Schedules I and V)

Material	Type	Value
Magnesium fluoride (CAS 7783-40-6)	TWA	2,5 mg/m ³

Netherlands. OELs (binding)

Material	Type	Value
Magnesium fluoride (CAS 7783-40-6)	STEL	2 mg/m ³

Norway. Administrative Norms for Contaminants in the Workplace

Material	Type	Value
Magnesium fluoride (CAS 7783-40-6)	TLV	0,5 mg/m ³

Portugal. OELs. Decree-Law n. 290/2001 (Journal of the Republic - 1 Series A, n.266)

Material	Type	Value
Magnesium fluoride (CAS 7783-40-6)	TWA	2,5 mg/m ³

Portugal. VLEs. Norm on occupational exposure to chemical agents (NP 1796)

Material	Type	Value
Magnesium fluoride (CAS 7783-40-6)	TWA	2,5 mg/m ³

Romania. OELs. Protection of workers from exposure to chemical agents at the workplace

Material	Type	Value
Magnesium fluoride (CAS 7783-40-6)	TWA	2,5 mg/m ³

Slovakia. OELs. Regulation No. 300/2007 concerning protection of health in work with chemical agents

Material	Type	Value
Magnesium fluoride (CAS 7783-40-6)	TWA	2,5 mg/m ³

Spain. Occupational Exposure Limits

Material	Type	Value
Magnesium fluoride (CAS 7783-40-6)	TWA	2,5 mg/m ³

Sweden. OELs. Work Environment Authority (AV), Occupational Exposure Limit Values (AFS 2015:7)

Material	Type	Value
Magnesium fluoride (CAS 7783-40-6)	TWA	2 mg/m ³

Switzerland. SUVA Grenzwerte am Arbeitsplatz

Material	Type	Value	Form
Magnesium fluoride (CAS 7783-40-6)	STEL	4 mg/m ³	Inhalable dust.
	TWA	1 mg/m ³	Inhalable dust.

UK. EH40 Workplace Exposure Limits (WELs)

Material	Type	Value
Magnesium fluoride (CAS 7783-40-6)	TWA	2,5 mg/m ³

EU. Indicative Exposure Limit Values in Directives 91/322/EEC, 2000/39/EC, 2006/15/EC, 2009/161/EU

Material	Type	Value
Magnesium fluoride (CAS 7783-40-6)	TWA	2,5 mg/m ³

Biological limit values**Czech Republic. Limit Values for Indicators of Biological Exposure Tests in Urine and Blood, Annex 2, Tables 1 and 2, Government Decree 432/2003 Sb.**

Material	Value	Determinant	Specimen	Sampling Time
Magnesium fluoride (CAS 7783-40-6)	60 µmol/mmol	Fluoride	Creatinine in urine	*
	10 mg/g	Fluoride	Creatinine in urine	*

* - For sampling details, please see the source document.

France. Biological indicators of exposure (IBE) (National Institute for Research and Security (INRS, ND 2065)

Material	Value	Determinant	Specimen	Sampling Time
Magnesium fluoride (CAS 7783-40-6)	3 mg/g	Fluorures	Creatinine in urine	*
	10 mg/g	Fluorures	Creatinine in urine	*

* - For sampling details, please see the source document.

Germany. TRGS 903, BAT List (Biological Limit Values)

Material	Value	Determinant	Specimen	Sampling Time
Magnesium fluoride (CAS 7783-40-6)	7 mg/g	Fluorid	Creatinine in urine	*

Germany. TRGS 903, BAT List (Biological Limit Values)

Material	Value	Determinant	Specimen	Sampling Time
	4 mg/g	Fluorid	Creatinine in urine	*

* - For sampling details, please see the source document.

Hungary. Chemical Safety at Workplace Ordinance Joint Decree No. 25/2000 (Annex 2): Permissible limit values of biological exposure (effect) indices

Material	Value	Determinant	Specimen	Sampling Time
Magnesium fluoride (CAS 7783-40-6)	7 mg/g	fluoride	Creatinine in urine	*
	4 mg/g	fluoride	Creatinine in urine	*
	42 µmol/mmol	fluoride	Creatinine in urine	*
	24 µmol/mmol	fluoride	Creatinine in urine	*

* - For sampling details, please see the source document.

Slovakia. BLVs (Biological Limit Value). Regulation no. 355/2006 concerning protection of workers exposed to chemical agents, Annex 2

Material	Value	Determinant	Specimen	Sampling Time
Magnesium fluoride (CAS 7783-40-6)	7 mg/g	Fluorides	Creatinine in urine	*
	4 mg/g	Fluorides	Creatinine in urine	*

* - For sampling details, please see the source document.

Spain. Biological Limit Values (VLBs), Occupational Exposure Limits for Chemical Agents, Table 4

Material	Value	Determinant	Specimen	Sampling Time
Magnesium fluoride (CAS 7783-40-6)	8 mg/l	Fluoruros	Urine	*

* - For sampling details, please see the source document.

Recommended monitoring procedures Follow standard monitoring procedures.

Derived no effect levels (DNELs) Not available.

Predicted no effect concentrations (PNECs) Not available.

8.2. Exposure controls**Appropriate engineering controls**

Good general ventilation (typically 10 air changes per hour) should be used. Ventilation rates should be matched to conditions. If applicable, use process enclosures, local exhaust ventilation, or other engineering controls to maintain airborne levels below recommended exposure limits. If exposure limits have not been established, maintain airborne levels to an acceptable level. Good general ventilation should be used. Ventilation rates should be matched to conditions. If applicable, use process enclosures, local exhaust ventilation, or other engineering controls to maintain airborne levels below recommended exposure limits. If exposure limits have not been established, maintain airborne levels to an acceptable level. Ensure adequate ventilation, especially in confined areas.

Individual protection measures, such as personal protective equipment

General information Use personal protective equipment as required. Personal protection equipment should be chosen according to the CEN standards and in discussion with the supplier of the personal protective equipment.

Eye/face protection Wear safety glasses with side shields (or goggles).

Skin protection

- Hand protection Wear appropriate chemical resistant gloves.

- Other Wear suitable protective clothing.

Respiratory protection In case of insufficient ventilation, wear suitable respiratory equipment.

Thermal hazards Wear appropriate thermal protective clothing, when necessary.

Hygiene measures When using, do not eat, drink or smoke. Always observe good personal hygiene measures, such as washing after handling the material and before eating, drinking, and/or smoking. Routinely wash work clothing and protective equipment to remove contaminants.

Environmental exposure controls Environmental manager must be informed of all major releases.

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Appearance

Physical state Solid.
Form Solid.
Colour Not available.

Odour Not available.

Odour threshold Not available.

pH Not available.

Melting point/freezing point Not available.

Initial boiling point and boiling range Not available.

Flash point Not available.

Evaporation rate Not available.

Flammability (solid, gas) Not available.

Upper/lower flammability or explosive limits

Flammability limit - lower (%) Not available.

Flammability limit - upper (%) Not available.

Vapour pressure < 0,0000001 kPa at 25 °C

Vapour density Not available.

Relative density Not available.

Solubility(ies)

Solubility (water) Not available.

Partition coefficient (n-octanol/water) Not available.

Auto-ignition temperature Not available.

Decomposition temperature Not available.

Viscosity Not available.

Explosive properties Not explosive.

Oxidising properties Not oxidising.

9.2. Other information

Molecular formula F2Mg

SECTION 10: Stability and reactivity

10.1. Reactivity The product is stable and non-reactive under normal conditions of use, storage and transport.

10.2. Chemical stability Material is stable under normal conditions.

10.3. Possibility of hazardous reactions No dangerous reaction known under conditions of normal use.

10.4. Conditions to avoid Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. Contact with incompatible materials.

10.5. Incompatible materials Strong oxidising agents.

10.6. Hazardous decomposition products No hazardous decomposition products are known.

SECTION 11: Toxicological information

General information Occupational exposure to the substance or mixture may cause adverse effects.

Information on likely routes of exposure

Inhalation May cause irritation to the respiratory system. Prolonged inhalation may be harmful.

Skin contact Causes skin irritation.

Eye contact Causes serious eye irritation. Direct contact with eyes may cause temporary irritation.

Ingestion

However, ingestion is not likely to be a primary route of occupational exposure. May cause discomfort if swallowed. Expected to be a low ingestion hazard.

Symptoms

Exposure may cause temporary irritation, redness, or discomfort.

11.1. Information on toxicological effects

Acute toxicity

No data available.

Skin corrosion/irritation

Due to partial or complete lack of data the classification is not possible.

Serious eye damage/eye irritation

Due to partial or complete lack of data the classification is not possible.

Respiratory sensitisation

Due to partial or complete lack of data the classification is not possible.

Skin sensitisation

This product is not expected to cause skin sensitisation.

Germ cell mutagenicity

Due to partial or complete lack of data the classification is not possible.

Carcinogenicity

Due to partial or complete lack of data the classification is not possible.

Hungary. 26/2000 EüM Ordinance on protection against and preventing risk relating to exposure to carcinogens at work (as amended)

Not listed.

IARC Monographs. Overall Evaluation of Carcinogenicity

Magnesium fluoride (CAS 7783-40-6)

3 Not classifiable as to carcinogenicity to humans.

Reproductive toxicity

Due to partial or complete lack of data the classification is not possible.

Specific target organ toxicity - single exposure

Due to partial or complete lack of data the classification is not possible. May cause respiratory irritation.

Specific target organ toxicity - repeated exposure

Due to partial or complete lack of data the classification is not possible. May cause damage to organs through prolonged or repeated exposure.

Aspiration hazard

Due to partial or complete lack of data the classification is not possible.

Mixture versus substance information

No information available.

Other information

Not available.

SECTION 12: Ecological information

12.1. Toxicity

Not expected to be harmful to aquatic organisms. Due to partial or complete lack of data the classification for hazardous to the aquatic environment, is not possible. The product is not classified as environmentally hazardous. However, this does not exclude the possibility that large or frequent spills can have a harmful or damaging effect on the environment.

12.2. Persistence and degradability

No data is available on the degradability of this product.

12.3. Bioaccumulative potential

No data available.

Partition coefficient n-octanol/water (log Kow)

Not available.

Bioconcentration factor (BCF)

Not available.

12.4. Mobility in soil

No data available.

12.5. Results of PBT and vPvB assessment

Not a PBT or vPvB substance or mixture.

12.6. Other adverse effects

No other adverse environmental effects (e.g. ozone depletion, photochemical ozone creation potential, endocrine disruption, global warming potential) are expected from this component.

12.7. Additional information

Estonia Dangerous substances in groundwater Data

Magnesium fluoride (CAS 7783-40-6)

Fluoride (as F-ion, total) 1500 ug/l

Fluoride (as F-ion, total) 4000 ug/l

Estonia Dangerous substances in soil Data

Magnesium fluoride (CAS 7783-40-6)

Fluoride (as F-ion) 1200 mg/kg

Fluoride (as F-ion) 2000 mg/kg

Fluoride (as F-ion) 450 mg/kg

SECTION 13: Disposal considerations

13.1. Waste treatment methods

Residual waste

Empty containers or liners may retain some product residues. This material and its container must be disposed of in a safe manner (see: Disposal instructions). Dispose of in accordance with local regulations.

Contaminated packaging	Since emptied containers may retain product residue, follow label warnings even after container is emptied. Empty containers should be taken to an approved waste handling site for recycling or disposal.
EU waste code	The Waste code should be assigned in discussion between the user, the producer and the waste disposal company.
Disposal methods/information	Collect and reclaim or dispose in sealed containers at licensed waste disposal site.
Special precautions	Dispose in accordance with all applicable regulations.

SECTION 14: Transport information

ADR

14.1. - 14.6.: Not regulated as dangerous goods.

RID

14.1. - 14.6.: Not regulated as dangerous goods.

ADN

14.1. - 14.6.: Not regulated as dangerous goods.

IATA

14.1. - 14.6.: Not regulated as dangerous goods.

IMDG

14.1. - 14.6.: Not regulated as dangerous goods.

SECTION 15: Regulatory information

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

EU regulations

Regulation (EC) No. 1005/2009 on substances that deplete the ozone layer, Annex I and II, as amended

Not listed.

Regulation (EC) No. 850/2004 On persistent organic pollutants, Annex I as amended

Not listed.

Regulation (EU) No. 649/2012 concerning the export and import of dangerous chemicals, Annex I, Part 1 as amended

Not listed.

Regulation (EU) No. 649/2012 concerning the export and import of dangerous chemicals, Annex I, Part 2 as amended

Not listed.

Regulation (EU) No. 649/2012 concerning the export and import of dangerous chemicals, Annex I, Part 3 as amended

Not listed.

Regulation (EU) No. 649/2012 concerning the export and import of dangerous chemicals, Annex V as amended

Not listed.

Regulation (EC) No. 166/2006 Annex II Pollutant Release and Transfer Registry, as amended

Magnesium fluoride (CAS 7783-40-6)

Regulation (EC) No. 1907/2006, REACH Article 59(10) Candidate List as currently published by ECHA

Not listed.

Authorisations

Regulation (EC) No. 1907/2006, REACH Annex XIV Substances subject to authorization, as amended

Not listed.

Restrictions on use

Regulation (EC) No. 1907/2006, REACH Annex XVII Substances subject to restriction on marketing and use as amended

Not listed.

Directive 2004/37/EC: on the protection of workers from the risks related to exposure to carcinogens and mutagens at work, as amended.

Not listed.

Other EU regulations

Directive 2012/18/EU on major accident hazards involving dangerous substances, as amended

Not listed.

Other regulations

The product is classified and labelled in accordance with Regulation (EC) 1272/2008 (CLP Regulation) as amended. This Safety Data Sheet complies with the requirements of Regulation (EC) No 1907/2006, as amended.

National regulations Follow national regulation for work with chemical agents in accordance with Directive 98/24/EC, as amended.

15.2. Chemical safety assessment No Chemical Safety Assessment has been carried out.

SECTION 16: Other information

List of abbreviations Not available.

References Not available.

Training information Follow training instructions when handling this material.

Disclaimer Materion Advanced Chemicals Inc. cannot anticipate all conditions under which this information and its product, or the products of other manufacturers in combination with its product, may be used. It is the user's responsibility to ensure safe conditions for handling, storage and disposal of the product, and to assume liability for loss, injury, damage or expense due to improper use. This document has been prepared using data from sources considered to be technically reliable and the information is believed to be correct. Materion makes no warranties, expressed or implied, as to the accuracy of the information contained herein. Materion cannot anticipate all conditions under which this information and its products may be used and the actual conditions of use are beyond its control. The user is responsible to evaluate all available information when using this product for any particular use and to comply with all Federal, State, Provincial and Local laws, statutes and regulations.