



# SAFETY DATA SHEET

ANGUS CHEMICAL COMPANY

Product name : Magnesium Sulfate, Anhydrous, USP  
Grade

Issue Date: 11/02/2017  
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ANGUS CHEMICAL COMPANY encourages and expects you to read and understand the entire (M)SDS, as there is important information throughout the document. We expect you to follow the precautions identified in this document unless your use conditions would necessitate other appropriate methods or actions.

## 1. PRODUCT AND COMPANY IDENTIFICATION

Product name Magnesium Sulfate, Anhydrous, USP Grade

### Manufacturer or supplier's details

Company name of supplier ANGUS CHEMICAL COMPANY

Address 1500 E. LAKE COOK ROAD  
Buffalo Grove IL 60089-6553

Customer Information Number +1-847-808-3711

E-mail address NAR\_CC@ANGUS.COM

Emergency telephone number **800-424-9300**

### Recommended use of the chemical and restrictions on use

Recommended use For laboratory use.  
Life sciences research chemical.  
Magnesium Sulfate is not intended for use in preparing parenteral dosage.  
The ANGUS Chemical Company recommends that you use this product in a manner consistent with the listed use. If your intended use is not consistent with the stated use, please contact the Customer Information Group (see Section 1 of this data sheet).

## 2. HAZARDS IDENTIFICATION

GHS Classification

Not a hazardous substance or mixture.

**GHS Label elements, including precautionary statements**

This product is not hazardous per the Globally Harmonized System of Classification and Labelling (GHS).

**Other hazards**

None known.

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### 3. COMPOSITION/INFORMATION ON INGREDIENTS

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This product is a substance.

**Components**

Chemical Name	CAS-No.	Concentration (% w/w)
Magnesium sulfate	7487-88-9	<= 100.0 %

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### 4. FIRST AID MEASURES

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If inhaled	Move person to fresh air; if effects occur, consult a physician.
In case of skin contact	Wash off with plenty of water.
In case of eye contact	Flush eyes thoroughly with water for several minutes. Remove contact lenses after the initial 1-2 minutes and continue flushing for several additional minutes. If effects occur, consult a physician, preferably an ophthalmologist.
If swallowed	If swallowed, seek medical attention. Do not induce vomiting unless directed to do so by medical personnel.
Most important symptoms and effects, both acute and delayed	Aside from the information found under Description of first aid measures (above) and Indication of immediate medical attention and special treatment needed (below), any additional important symptoms and effects are described in Section 11: Toxicology Information.
Protection of first-aiders	If potential for exposure exists refer to Section 8 for specific personal protective equipment.
Notes to physician	Treatment of exposure should be directed at the control of symptoms and the clinical condition of the patient. No specific antidote.

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### 5. FIREFIGHTING MEASURES

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Suitable extinguishing media	This material does not burn. If exposed to fire from another source, use suitable extinguishing agent for that fire.
Specific hazards during firefighting	None known.
Hazardous combustion	Fire conditions may cause this product to decompose. Refer

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products	to section 10 - Thermal Decomposition.
Further information	Keep people away. Isolate fire and deny unnecessary entry. This material does not burn. Fight fire for other material that is burning.
Special protective equipment for firefighters	Wear positive-pressure self-contained breathing apparatus (SCBA) and protective fire fighting clothing (includes fire fighting helmet, coat, trousers, boots, and gloves). If protective equipment is not available or not used, fight fire from a protected location or safe distance.

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## 6. ACCIDENTAL RELEASE MEASURES

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Personal precautions, protective equipment and emergency procedures	Use appropriate safety equipment. For additional information, refer to Section 8, Exposure Controls and Personal Protection.
Environmental precautions	Prevent from entering into soil, ditches, sewers, waterways and/or groundwater. See Section 12, Ecological Information.
Methods and materials for containment and cleaning up	Contain spilled material if possible. Collect in suitable and properly labeled containers. Use care to minimize generation of airborne dust. See Section 13, Disposal Considerations, for additional information.

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## 7. HANDLING AND STORAGE

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Advice on safe handling	Keep container closed. Good housekeeping and controlling of dusts are necessary for safe handling of product. Avoid generating and breathing dust. See Section 8, EXPOSURE CONTROLS AND PERSONAL PROTECTION.
Conditions for safe storage	Avoid temperatures above 40°C (104°F) Keep container tightly closed in a dry and well-ventilated place. Shelf life: Use within 24

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## 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

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### Components with workplace control parameters

Contains no substances with occupational exposure limit values.

**Engineering measures** Local exhaust ventilation may be necessary for some

operations.

Use local exhaust ventilation, or other engineering controls to maintain airborne levels below exposure limit requirements or guidelines. If there are no applicable exposure limit requirements or guidelines, general ventilation should be sufficient for most operations.

### Personal protective equipment

#### Respiratory protection

Respiratory protection should be worn when there is a potential to exceed the exposure limit requirements or guidelines. If there are no applicable exposure limit requirements or guidelines, wear respiratory protection when adverse effects, such as respiratory irritation or discomfort have been experienced, or where indicated by your risk assessment process.

In dusty or misty atmospheres, use an approved particulate respirator.

The following should be effective types of air-purifying respirators:

Particulate filter.

#### Hand protection

Chemical protective gloves should not be needed when handling this material. Consistent with general hygienic practice for any material, skin contact should be minimized.

#### Eye protection

Use safety glasses (with side shields).

#### Skin and body protection

No precautions other than clean body-covering clothing should be needed.

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## 9. PHYSICAL AND CHEMICAL PROPERTIES

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Appearance	Solid.
Color	White
Odor	Odorless
Odor Threshold	Odorless
pH	Method: Supplier Neutral (as aqueous solution)
Freezing point	No test data available
Melting point/range	1,124 °C (2,055 °F) Method: Supplier
Boiling point/boiling range	Decomposes No test data available

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Flash point	Test Type: closed cup No test data available
Evaporation rate	Not applicable to solids
Flammability (solid, gas)	No data available.
Upper explosion limit	No test data available
Lower explosion limit	No test data available
Vapor Pressure	< 0.10 mmHg (25 °C) Method: Supplier
Relative Vapor Density (air = 1)	< 0.1 Method: Supplier
Relative density	2.66 Method: Supplier (water = 1)
Water solubility	360 (20 °C) Method: Supplier
Partition coefficient: n-octanol/water	log Pow: -0.17 Method: Estimated. Bioconcentration potential is low (BCF < 100 or Log Pow < 3).
Auto-ignition temperature	No test data available
Decomposition temperature	No test data available
Viscosity Viscosity, kinematic	No test data available
Explosive properties	No data available.
Oxidizing properties	No data available.
Molecular weight	120.36 g/mol Method: Supplier
Hygroscopic	yes

NOTE: The physical data presented above are typical values and should not be construed as a specification.

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## 10. STABILITY AND REACTIVITY

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Reactivity	No dangerous reaction known under conditions of normal use.
Chemical stability	Hygroscopic

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	Stable under recommended storage conditions. See Storage, Section 7.
Possibility of hazardous reactions	Polymerization will not occur.
Conditions to avoid	Exposure to elevated temperatures can cause product to decompose. Avoid moisture.
Incompatible materials	Avoid contact with: Alcohols. Calcium. Avoid contact with metals such as: Lead.
Hazardous decomposition products	Decomposition products can include and are not limited to: Sulfur oxides. Toxic gases are released during decomposition.

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## 11. TOXICOLOGICAL INFORMATION

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*Toxicological information on this product or its components appear in this section when such data is available.*

### Acute toxicity

#### **Product:**

Acute oral toxicity

Remarks: Small amounts swallowed incidentally as a result of normal handling operations are not likely to cause injury; however, swallowing larger amounts may cause injury.  
Low toxicity if swallowed.

LD50 (Rat, male and female): > 4,000 mg/kg  
Assessment: The substance or mixture has no acute oral toxicity

Acute inhalation toxicity

Remarks: The LC50 has not been determined.

Remarks: Dust may cause irritation to upper respiratory tract (nose and throat).  
Vapors are unlikely due to physical properties.

Acute dermal toxicity

Remarks: Prolonged skin contact is unlikely to result in absorption of harmful amounts.

Remarks: The dermal LD50 has not been determined.

### Skin corrosion/irritation

#### **Product:**

Remarks: Prolonged exposure not likely to cause significant skin irritation.

**Serious eye damage/eye irritation**

**Product:**

Remarks: May cause slight temporary eye irritation.

**Respiratory or skin sensitization**

**Product:**

Remarks: Did not demonstrate the potential for contact allergy in mice.

Remarks: For respiratory sensitization:  
No relevant data found.

**Carcinogenicity**

**Product:**

No relevant data found.

**IARC**

No component of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.

**OSHA**

No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by OSHA.

**NTP**

No component of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP.

**Teratogenicity**

**Product**

Medical use of magnesium sulfate via parenteral route during late pregnancy may be toxic to the fetus. However, exposure to small amounts by routes of exposure relevant to the workplace is not expected to pose a hazard.

**Mutagenicity**

**Product**

Tests on bacterial or mammalian cell cultures did not show mutagenic effects.

**Reproductive toxicity**

**Product:**

No relevant data found.

**STOT - single exposure**

**Product:**

Assessment: Evaluation of available data suggests that this material is not an STOT-SE toxicant.

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### Repeated dose toxicity

**Product:**

Remarks: Serious systemic effects may develop when ingested in medicinal use, especially in individuals with impaired renal function. Such effects would not result from normal industrial handling.

Signs and symptoms of excessive exposure may include:

May cause nausea and vomiting.

May cause abdominal discomfort or diarrhea.

### Aspiration toxicity

**Product:**

Aspiration Hazard

Based on physical properties, not likely to be an aspiration hazard.

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## 12. ECOLOGICAL INFORMATION

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### Ecotoxicity

**Product:**

Toxicity to fish

Remarks: Material is practically non-toxic to aquatic organisms on an acute basis (LC50/EC50/EL50/LL50 >100 mg/L in the most sensitive species tested).

LC50 (Lepomis macrochirus (Bluegill sunfish)): 3,800 mg/l  
Exposure time: 24.0 h  
Test Type: static test  
Method: OECD Test Guideline 203 or Equivalent

LC50 (Gambusia affinis (Mosquito fish)): 3,100 mg/l  
Exposure time: 96.0 h  
Test Type: static test  
Method: OECD Test Guideline 203 or Equivalent

Toxicity to daphnia and other aquatic invertebrates

LC50 (Daphnia magna (Water flea)): 1,860.00 mg/l  
Exposure time: 48.0 h  
Test Type: static test  
Method: OECD Test Guideline 202 or Equivalent

Toxicity to algae

EbC50 (alga Scenedesmus sp.): 2,700 mg/l  
End point: Biomass  
Exposure time: 72 h  
Test Type: static test  
Method: OECD Test Guideline 201 or Equivalent

Toxicity to bacteria

EC50 (activated sludge): > 1,000 mg/l

### Persistence and degradability

**Product:**

Biodegradability

Remarks: Inorganic salt which ionizes in water.



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**Bioaccumulative potential**

**Product:**

Partition coefficient: n-octanol/water

log Pow: -0.17

Method: Estimated.

Remarks: Bioconcentration potential is low (BCF < 100 or Log Pow < 3).

**Mobility in soil**

**Product:**

Distribution among environmental compartments

Remarks: No data available.

**Other adverse effects**

**Product:**

Ozone-Depletion Potential

Regulation: 40 CFR Protection of Environment; Part 82 Protection of Stratospheric Ozone - CAA Section 602 Class I Substances

Remarks: This product neither contains, nor was manufactured with a Class I or Class II ODS as defined by the U.S. Clean Air Act Section 602 (40 CFR 82, Subpt. A, App.A + B).

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**13. DISPOSAL CONSIDERATIONS**

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**Disposal methods**

Waste from residues

DO NOT DUMP INTO ANY SEWERS, ON THE GROUND, OR INTO ANY BODY OF WATER.

All disposal practices must be in compliance with all Federal, State/Provincial and local laws and regulations.

Regulations may vary in different locations.

Waste characterizations and compliance with applicable laws are the responsibility solely of the waste generator.

AS YOUR SUPPLIER, WE HAVE NO CONTROL OVER THE MANAGEMENT PRACTICES OR MANUFACTURING PROCESSES OF PARTIES HANDLING OR USING THIS MATERIAL.

THE INFORMATION PRESENTED HERE PERTAINS ONLY TO THE PRODUCT AS SHIPPED IN ITS INTENDED CONDITION AS DESCRIBED IN MSDS SECTION:

Composition Information.

FOR UNUSED & UNCONTAMINATED PRODUCT, the preferred options include sending to a licensed, permitted: Incinerator or other thermal destruction device.

Landfill.

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## 14. TRANSPORT INFORMATION

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### International Regulation

#### IATA-DGR

Not regulated as a dangerous good

#### IMDG-Code

Not regulated as a dangerous good

#### Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code

Not applicable for product as supplied.

### National Regulations

#### 49 CFR (DOT) – NON BULK

Not regulated as a dangerous good

#### 49 CFR (DOT) - BULK

Not regulated as a dangerous good

*This information is not intended to convey all specific regulatory or operational requirements/information relating to this product. Transportation classifications may vary by container volume and may be influenced by regional or country variations in regulations. Additional transportation system information can be obtained through an authorized sales or customer service representative. It is the responsibility of the transporting organization to follow all applicable laws, regulations and rules relating to the transportation of the material.*

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## 15. REGULATORY INFORMATION

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### OSHA Hazards

This product is not a "Hazardous Chemical" as defined by the OSHA Hazard Communication Standard, 29 CFR 1910.1200.

### EPCRA - Emergency Planning and Community Right-to-Know Act

#### SARA 311/312 Hazards

This product is not a hazardous chemical under 29CFR 1910.1200, and therefore is not covered by Title III of SARA.

#### SARA 302

No chemicals in this material are subject to the reporting requirements of SARA Title III, Section 302.

#### SARA 313

This material does not contain any chemical components with known CAS numbers that exceed the threshold (De Minimis) reporting levels established by SARA Title III, Section 313.

### Clean Air Act

This product neither contains, nor was manufactured with a Class I or Class II ODS as defined by the U.S. Clean Air Act Section 602 (40 CFR 82, Subpt. A, App.A + B).

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This product does not contain any hazardous air pollutants (HAP), as defined by the U.S. Clean Air Act Section 12 (40 CFR 61).

This product does not contain any chemicals listed under the U.S. Clean Air Act Section 112(r) for Accidental Release Prevention (40 CFR 68.130, Subpart F).

This product does not contain any chemicals listed under the U.S. Clean Air Act Section 111 SOCM I Intermediate or Final VOC's (40 CFR 60.489).

**Clean Water Act**

This product does not contain any Hazardous Substances listed under the U.S. CleanWater Act, Section 311, Table 116.4A.

This product does not contain any Hazardous Chemicals listed under the U.S. CleanWater Act, Section 311, Table 117.3.

This product does not contain any toxic pollutants listed under the U.S. Clean Water Act Section 307

**US State Regulations**

**Massachusetts Right To Know**

No components are subject to the Massachusetts Right to Know Act.

**Pennsylvania Right To Know**

The following chemicals are listed because of the additional requirements of Pennsylvania law:

<b>Cas No.</b>	<b>Component</b>
7487-88-9	Magnesium sulfate

**New Jersey Right To Know**

The following chemicals are listed because of the additional requirements of New Jersey law:

<b>Cas No.</b>	<b>Component</b>
7487-88-9	Magnesium sulfate

**California Prop. 65**

This product does not contain any chemicals known to State of California to cause cancer, birth defects, or any other reproductive harm.

**The components of this product are reported in the following inventories:**

United States TSCA Inventory

All components of this product are on the TSCA Inventory or are exempt from TSCA Inventory requirements under 40 CFR 720.30

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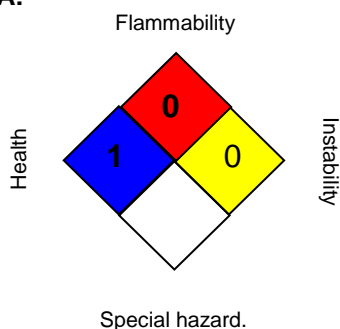
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## 16. OTHER INFORMATION

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### Further information

#### NFPA:



#### HMIS III:

HEALTH	0
FLAMMABILITY	0
PHYSICAL HAZARD	0

0 = not significant, 1 =Slight,  
2 = Moderate, 3 = High  
4 = Extreme, \* = Chronic

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US / EN

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.

#### Full text of other abbreviations

(Q)SAR - (Quantitative) Structure Activity Relationship; ASTM - American Society for the Testing of Materials; bw - Body weight; DIN - Standard of the German Institute for Standardisation; ECx - Concentration associated with x% response; ELx - Loading rate associated with x% response; EmS - Emergency Schedule; ErCx - Concentration associated with x% growth rate response; GHS - Globally Harmonized System; IARC - International Agency for Research on Cancer; IATA - International Air

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Transport Association; IBC - International Code for the Construction and Equipment of Ships carrying Dangerous Chemicals in Bulk; IC50 - Half maximal inhibitory concentration; ICAO - International Civil Aviation Organization; IMDG - International Maritime Dangerous Goods; IMO - International Maritime Organization; ISO - International Organisation for Standardization; LC50 - Lethal Concentration to 50 % of a test population; LD50 - Lethal Dose to 50% of a test population (Median Lethal Dose); MARPOL - International Convention for the Prevention of Pollution from Ships; n.o.s. - Not Otherwise Specified; NO(A)EC - No Observed (Adverse) Effect Concentration; NO(A)EL - No Observed (Adverse) Effect Level; NOELR - No Observable Effect Loading Rate; OECD - Organization for Economic Co-operation and Development; OPPTS - Office of Chemical Safety and Pollution Prevention; PBT - Persistent, Bioaccumulative and Toxic substance; REACH - Regulation (EC) No 1907/2006 of the European Parliament and of the Council concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals; SADT - Self-Accelerating Decomposition Temperature; SDS - Safety Data Sheet; UN - United Nations; vPvB - Very Persistent and Very Bioaccumulative; DSL - Domestic Substances List (Canada); KECI - Korea Existing Chemicals Inventory; TSCA - Toxic Substances Control Act (United States); AICS - Australian Inventory of Chemical Substances; IECSC - Inventory of Existing Chemical Substances in China; ENCS - Existing and New Chemical Substances (Japan); ISHL - Industrial Safety and Health Law (Japan); PICCS - Philippines Inventory of Chemicals and Chemical Substances; NZIoC - New Zealand Inventory of Chemicals; TCSI - Taiwan Chemical Substance Inventory; CERCLA - Comprehensive Environmental Response, Compensation, and Liability Act; DOT - Department of Transportation; EHS - Extremely Hazardous Substance; HMIS - Hazardous Materials Identification System; MSHA - Mine Safety and Health Administration; NFPA - National Fire Protection Association; RCRA - Resource Conservation and Recovery Act; RQ - Reportable Quantity; SARA - Superfund Amendments and Reauthorization Act; CMR - Carcinogen, Mutagen or Reproductive Toxicant; GLP - Good Laboratory Practice; ERG - Emergency Response Guide; NTP - National Toxicology Program; UNRTDG - United Nations Recommendations on the Transport of Dangerous Goods