

SAFETY DATA SHEETS

According to the UN GHS revision 9

Version: 1.1
Creation Date: July 15, 2019
Revision Date: May 17, 2024

SECTION 1: Identification

1.1 GHS Product identifier

Product name Magnesium perchlorate

1.2 Other means of identification

Product number C1003352

Other names Magnesium Perchlorate;anhydrous magnesium perchlorate;magnesium,diperchlorate

1.3 Recommended use of the chemical and restrictions on use

Identified uses For laboratory and Industrial use only.

Uses advised against no data available

1.4 Supplier's details

Company CATO Research Chemicals Inc.

Address 3/F,Building B,No.179 BASIGO, Guangpu Rd East,Huangpu Dist,Guangzhou

Telephone +86-20-81960175

1.5 Emergency phone number

Emergency phone number +86-20-81960175

Service hours 'Monday to Friday, 9am-5pm (Standard time zone: UTC/GMT +8 hours).

SECTION 2: Hazard identification

2.1 Classification of the substance or mixture

Oxidizing solids, Category 1
Acute toxicity - Category 4, Oral
Skin irritation, Category 2
Eye irritation, Category 2

2.2 GHS label elements, including precautionary statements

Pictogram(s)



Signal word

Danger

Hazard statement(s)

H271 May cause fire or explosion; strong oxidizer
H302 Harmful if swallowed
H315 Causes skin irritation
H319 Causes serious eye irritation

Precautionary statement(s)

Prevention

P210 Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.
P220 Keep away from clothing and other combustible materials.
P280 Wear protective gloves/protective clothing/eye protection/face protection/hearing protection/...
P283 Wear fire resistant or flame retardant clothing.
P264 Wash ... thoroughly after handling.
P270 Do not eat, drink or smoke when using this product.

Response	P306+P360 IF ON CLOTHING: Rinse immediately contaminated clothing and skin with plenty of water before removing clothes. P371+P380+P375 In case of major fire and large quantities: Evacuate area. Fight fire remotely due to the risk of explosion. P370+P378 In case of fire: Use ... to extinguish. P301+P317 IF SWALLOWED: Get medical help. P330 Rinse mouth. P302+P352 IF ON SKIN: Wash with plenty of water/... P321 Specific treatment (see ... on this label). P332+P317 If skin irritation occurs: Get medical help. P362+P364 Take off contaminated clothing and wash it before reuse. P305+P351+P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
Storage	P420 Store separately.
Disposal	P501 Dispose of contents/container to an appropriate treatment and disposal facility in accordance with applicable laws and regulations, and product characteristics at time of disposal.

2.3 Other hazards which do not result in classification

no data available

SECTION 3: Composition/information on ingredients

3.1 Substances

Chemical name	Common names and synonyms	CAS number	EC number	Concentration
Magnesium perchlorate	Magnesium perchlorate	10034-81-8	233-108-3	100%

SECTION 4: First-aid measures

4.1 Description of necessary first-aid measures

If inhaled

Move the victim into fresh air. If breathing is difficult, give oxygen. If not breathing, give artificial respiration and consult a doctor immediately. Do not use mouth to mouth resuscitation if the victim ingested or inhaled the chemical.

Following skin contact

Take off contaminated clothing immediately. Wash off with soap and plenty of water. Consult a doctor.

Following eye contact

Rinse with pure water for at least 15 minutes. Consult a doctor.

Following ingestion

Rinse mouth with water. Do not induce vomiting. Never give anything by mouth to an unconscious person. Call a doctor or Poison Control Center immediately.

4.2 Most important symptoms/effects, acute and delayed

Inhalation of dust irritates mucous membranes. Ingestion of large amounts may be fatal; immediate symptoms include abdominal pains, nausea and vomiting, diarrhea, pallor, blueness, shortness of breath, unconsciousness. Contact with eyes or skin causes irritation. (USCG, 1999)

4.3 Indication of immediate medical attention and special treatment needed, if necessary

Basic treatment: Establish a patent airway. Suction if necessary. Watch for signs of respiratory insufficiency and assist ventilations if necessary. Administer oxygen by nonrebreather mask at 10 to 15 L/min. Monitor for pulmonary edema and treat if necessary. Monitor for shock and treat if necessary. For eye contamination, flush eyes immediately with water. Irrigate each eye continuously with normal saline during transport. Do not use emetics. For ingestion, rinse mouth and administer 5 ml/kg up to 200 ml of water for dilution if the patient can swallow, has a strong gag reflex, and does not drool. Magnesium and Related Compounds

SECTION 5: Fire-fighting measures

5.1 Suitable extinguishing media

If material on fire or involved in fire: Flood with water. Cool all affected containers with flooding quantities of water. Apply water from as far a distance as possible.

5.2 Specific hazards arising from the chemical

Behavior in Fire: Can form explosive mixture with combustible material or finely powdered metals. Increases the intensity of fires. (USCG, 1999)

5.3 Special protective actions for fire-fighters

Wear self-contained breathing apparatus for firefighting if necessary.

SECTION 6: Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures

Avoid dust formation. Avoid breathing mist, gas or vapours. Avoid contacting with skin and eye. Use personal protective equipment. Wear chemical impermeable gloves. Ensure adequate ventilation. Remove all sources of ignition. Evacuate personnel to safe areas. Keep people away from and upwind of spill/leak.

6.2 Environmental precautions

Prevent further spillage or leakage if it is safe to do so. Do not let the chemical enter drains. Discharge into the environment must be avoided.

6.3 Methods and materials for containment and cleaning up

Immediately remove & carefully dispose of any spilled perchlorate.

SECTION 7: Handling and storage

7.1 Precautions for safe handling

Handling in a well ventilated place. Wear suitable protective clothing. Avoid contact with skin and eyes. Avoid formation of dust and aerosols. Use non-sparking tools. Prevent fire caused by electrostatic discharge steam.

7.2 Conditions for safe storage, including any incompatibilities

Protect against physical damage. store in dry place of noncombustible construction, separate from combustible, org, readily oxidizable materials, & acids.

SECTION 8: Exposure controls/personal protection

8.1 Control parameters

Occupational Exposure limit values

no data available

Biological limit values

no data available

8.2 Appropriate engineering controls

Ensure adequate ventilation. Handle in accordance with good industrial hygiene and safety practice. Set up emergency exits and the risk-elimination area.

8.3 Individual protection measures, such as personal protective equipment (PPE)

Eye/face protection

Wear tightly fitting safety goggles with side-shields conforming to EN 166(EU) or NIOSH (US).

Skin protection

Wear fire/flammable resistant and impervious clothing. Handle with gloves. Gloves must be inspected prior to use. Wash and dry hands. The selected protective gloves have to satisfy the specifications of EU Directive 89/686/EEC and the standard EN 374 derived from it.

Respiratory protection

If the exposure limits are exceeded, irritation or other symptoms are experienced, use a full-face respirator.

Thermal hazards

no data available

SECTION 9: Physical and chemical properties and safety characteristics

Physical state	Magnesium perchlorate is a white crystalline solid. Strongly absorbs water from air and dissolves in it. Accordingly, used as a regenerable drying agent. May explode under prolonged exposure to heat or fire.
Colour	White, granular, or flaky powder
Odour	Odorless
Melting point/freezing point	251°C
Boiling point or initial boiling point and boiling range	Decomposes above 482.0° F (USCG, 1999)
Flammability	no data available
Lower and upper explosion limit/flammability limit	no data available
Flash point	no data available
Auto-ignition temperature	no data available
Decomposition temperature	no data available
pH	no data available
Kinematic viscosity	no data available
Solubility	99.3 G/100 CC OF H2O & 23.96 G/100 CC OF ALCOHOL, EACH AT 25 DEG C

Partition coefficient n-octanol/water	no data available
Vapour pressure	no data available
Density and/or relative density	2.21 (18 °C)
Relative vapour density	no data available
Particle characteristics	no data available

SECTION 10: Stability and reactivity

10.1 Reactivity

Deliquescent. Water soluble

10.2 Chemical stability

no data available

10.3 Possibility of hazardous reactions

POWERFUL OXIDIZING MATERIAL; MIXTURES WITH COMBUSTIBLE ORG OR OTHER EASILY OXIDIZABLE MATERIALS...ARE IGNITED READILY BY FRICTION OR HEAT.MAGNESIUM PERCHLORATE is a strong oxidizing agent. Decomposes at 185-190°C [Hawley]. Noncombustible but accelerates the burning of combustible materials. If large quantities are involved in the fire or the combustible material is finely divided an explosion may result. Avoid contact with mineral acids because of the danger of explosion. In the preparation of anhydrous dimethyl sulfoxide by vacuum distillation from anhydrous magnesium perchlorate, an explosion occurred [MCA Case History 1187, 1966]. Drying ethylene oxide with magnesium perchlorate resulted in an explosion [NSC Newsletter. Chem. Soc. 1959]. Magnesium perchlorate used in drying hydrocarbons exploded when heated to 220°C [Ind. & Eng. News 17:70. 1939]. As soon as trimethyl phosphite contacted a small amount of magnesium perchlorate in a flask, there was a flash and an explosion that shattered the flask [Allison 1968].

10.4 Conditions to avoid

no data available

10.5 Incompatible materials

The anhydrous salt /of magnesium perchlorate/ which had been used for drying unsaturated hydrocarbons exploded on heating to 220 deg C for reactivation. The need to avoid contact with acidic materials is stressed. Magnesium perchlorate, anhydrous salt

10.6 Hazardous decomposition products

When heated to decomposition it emits toxic fumes of /magnesium oxide and hydrogen chloride/.

SECTION 11: Toxicological information

Acute toxicity

- Oral: no data available
- Inhalation: no data available
- Dermal: no data available

Skin corrosion/irritation

no data available

Serious eye damage/irritation

no data available

Respiratory or skin sensitization

no data available

Germ cell mutagenicity

no data available

Carcinogenicity

no data available

Reproductive toxicity

no data available

STOT-single exposure

no data available

STOT-repeated exposure

no data available

Aspiration hazard

no data available

SECTION 12: Ecological information

12.1 Toxicity

- Toxicity to fish: no data available
- Toxicity to daphnia and other aquatic invertebrates: no data available
- Toxicity to algae: no data available
- Toxicity to microorganisms: no data available

12.2 Persistence and degradability

no data available

12.3 Bioaccumulative potential

no data available

12.4 Mobility in soil

no data available

12.5 Other adverse effects

no data available

SECTION 13: Disposal considerations

13.1 Disposal methods

Product

The material can be disposed of by removal to a licensed chemical destruction plant or by controlled incineration with flue gas scrubbing. Do not contaminate water, foodstuffs, feed or seed by storage or disposal. Do not discharge to sewer systems.

Contaminated packaging

Containers can be triply rinsed (or equivalent) and offered for recycling or reconditioning. Alternatively, the packaging can be punctured to make it unusable for other purposes and then be disposed of in a sanitary landfill. Controlled incineration with flue gas scrubbing is possible for combustible packaging materials.

SECTION 14: Transport information

14.1 UN Number

ADR/RID: UN1475 (For reference only, please check.) IMDG: UN1475 (For reference only, please check.) IATA: UN1475 (For reference only, please check.)

14.2 UN Proper Shipping Name

ADR/RID: MAGNESIUM PERCHLORATE (For reference only, please check.) IMDG: MAGNESIUM PERCHLORATE (For reference only, please check.) IATA: MAGNESIUM PERCHLORATE (For reference only, please check.)

14.3 Transport hazard class(es)

ADR/RID: 5.1 (For reference only, please check.) IMDG: 5.1 (For reference only, please check.) IATA: 5.1 (For reference only, please check.)

14.4 Packing group, if applicable

ADR/RID: II (For reference only, please check.) IMDG: II (For reference only, please check.) IATA: II (For reference only, please check.)

14.5 Environmental hazards

ADR/RID: No IMDG: No IATA: No

14.6 Special precautions for user

no data available

14.7 Transport in bulk according to IMO instruments

no data available

SECTION 15: Regulatory information

15.1 Safety, health and environmental regulations specific for the product in question

Chemical name	Common names and synonyms	CAS number	EC number
Magnesium perchlorate	Magnesium perchlorate	10034-81-8	233-108-3
European Inventory of Existing Commercial Chemical Substances (EINECS)			Listed.
EC Inventory			Listed.
United States Toxic Substances Control Act (TSCA) Inventory			Listed.
China Catalog of Hazardous chemicals 2015			Listed.

New Zealand Inventory of Chemicals (NZIoC)	Listed.
Philippines Inventory of Chemicals and Chemical Substances (PICCS)	Listed.
Vietnam National Chemical Inventory	Listed.
Chinese Chemical Inventory of Existing Chemical Substances (China IECSC)	Listed.
Korea Existing Chemicals List (KECL)	Listed.

SECTION 16: Other information

Information on revision

Creation Date July 15, 2019
Revision Date May 17, 2024

Abbreviations and acronyms

- CAS: Chemical Abstracts Service
- ADR: European Agreement concerning the International Carriage of Dangerous Goods by Road
- RID: Regulation concerning the International Carriage of Dangerous Goods by Rail
- IMDG: International Maritime Dangerous Goods
- IATA: International Air Transportation Association
- TWA: Time Weighted Average
- STEL: Short term exposure limit
- LC50: Lethal Concentration 50%
- LD50: Lethal Dose 50%
- EC50: Effective Concentration 50%

References

- IPCS - The International Chemical Safety Cards (ICSC), website: <http://www.ilo.org/dyn/icsc/showcard.home>
- HSDB - Hazardous Substances Data Bank, website: <https://toxnet.nlm.nih.gov/newtoxnet/hsdb.htm>
- IARC - International Agency for Research on Cancer, website: <http://www.iarc.fr/>
- eChemPortal - The Global Portal to Information on Chemical Substances by OECD, website: http://www.echemportal.org/echemportal/index?pageID=0&request_locale=en
- CAMEO Chemicals, website: <http://cameochemicals.noaa.gov/search/simple>
- ChemIDplus, website: <http://chem.sis.nlm.nih.gov/chemidplus/chemidlite.jsp>
- ERG - Emergency Response Guidebook by U.S. Department of Transportation, website: <http://www.phmsa.dot.gov/hazmat/library/erg>
- Germany GESTIS-database on hazard substance, website: <http://www.dguv.de/ifa/gestis/gestis-stoffdatenbank/index-2.jsp>
- ECHA - European Chemicals Agency, website: <https://echa.europa.eu/>

Any questions regarding this SDS, Please send your inquiry to info@cato-chem.com

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