



# MATERIAL SAFETY DATA SHEET

## 1. Product and Company Identification

**Material name** LITHIUM PERCHLORATE, BATTERY GRADE  
**Catalog #** 233  
**Version #** 02  
**Revision date** 12-Jun-2008  
**CAS #** 7791-03-9  
**Synonym(s)** Perchloric acid, lithium salt  
**Manufacturer information** GFS Chemicals, Inc.  
P.O. Box 245  
Powell, OH 43065 US  
www.gfschemicals.com  
Fax 740-881-5989  
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Toll Free 800-858-9682  
Emergency Assistance Chemtrec 800-424-8300

## 2. Hazards Identification

**Emergency overview** DANGER -- OXIDIZER  
Contact with combustible material may cause fire.  
  
Irritating to skin. Irritating to eyes. Irritating to respiratory system.

**OSHA regulatory status** This product is considered hazardous under 29 CFR 1910.1200 (Hazard Communication).

**Potential health effects**

**Routes of exposure** Inhalation. Skin contact.

**Eyes** Causes eye irritation.

**Skin** Contact with skin may cause irritation.

**Inhalation** Irritating to respiratory system.

**Ingestion** Do not ingest.

**Potential environmental effects** Ecological injuries are not known or expected under normal use.

## 3. Composition / Information on Ingredients

Components	CAS #	Percent
LITHIUM PERCHLORATE	7791-03-9	90 - 100

## 4. First Aid Measures

**First aid procedures**

**Eye contact** Immediately flush eyes with plenty of water for at least 15 minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If irritation persists get medical attention.

**Skin contact** Remove and isolate contaminated clothing and shoes. Wash off immediately with plenty of water. If skin irritation persists, call a physician.

**Inhalation** Move to fresh air. If breathing is difficult, give oxygen. Call a physician if symptoms develop or persist.

**Ingestion** Have victim rinse mouth thoroughly with water. Do not induce vomiting without advice from poison control center.

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

## 5. Fire Fighting Measures

<b>Flammable properties</b>	May explode from heat or contamination. Containers may explode when heated. Some will react explosively with hydrocarbons (fuels). Some may decompose explosively when heated or involved in a fire. These substances will accelerate burning when involved in a fire. Contact with combustible material may cause fire.
<b>Extinguishing media</b>	
<b>Suitable extinguishing media</b>	Water.
<b>Protection of firefighters</b>	
<b>Protective equipment and precautions for firefighters</b>	Wear full protective clothing, including helmet, self-contained positive pressure or pressure demand breathing apparatus, protective clothing and face mask. Do not move cargo or vehicle if cargo has been exposed to heat. If tank, rail car or tank truck is involved in a fire, ISOLATE for 800 meters (1/2 mile) in all directions; also consider initial evacuation for 800 meters (1/2 mile) in all directions. ALWAYS stay away from tanks engulfed in flame. Fight fire from maximum distance or use unmanned hose holders or monitor nozzles. Move containers from fire area if you can do it without risk. For massive fire, use unmanned hose holders or monitor nozzles; if this is impossible, withdraw from area and let fire burn. Use water spray to cool unopened containers. Cool containers with flooding quantities of water until well after fire is out.
<b>Specific methods</b>	In the event of fire, cool tanks with water spray. Use water spray to cool unopened containers.

## 6. Accidental Release Measures

<b>Personal precautions</b>	Keep people away from and upwind of spill/leak. Do not touch damaged containers or spilled material unless wearing appropriate protective clothing. Ventilate closed spaces before entering. Keep unnecessary personnel away. Isolate spill or leak area immediately for at least 50 to 100 meters (150 to 330 feet) in all directions. Stay upwind. Keep out of low areas.
<b>Environmental precautions</b>	Runoff from fire control or dilution water may cause pollution.
<b>Methods for containment</b>	Stop leak if you can do so without risk. Keep combustibles (wood, paper, oil, etc.) away from spilled material. Prevent entry into waterways, sewers, basements or confined areas.
<b>Methods for cleaning up</b>	Sweep up or gather material and place in appropriate container for disposal. Avoid dust formation. After removal flush contaminated area thoroughly with water.

## 7. Handling and Storage

<b>Handling</b>	Do not handle or store near an open flame, heat or other sources of ignition. Keep away from clothing and other combustible materials. Do not breathe dust/fume/gas/mist/vapors/spray. Avoid contact with skin. Avoid contact with eyes. Use only with adequate ventilation. Wear personal protective equipment. Wash thoroughly after handling.
<b>Storage</b>	Keep container tightly closed. Do not store near combustible materials. Use care in handling/storage.

## 8. Exposure Controls / Personal Protection

<b>Engineering controls</b>	Ensure adequate ventilation, especially in confined areas.
<b>Personal protective equipment</b>	
<b>Respiratory protection</b>	Do not breathe dust/fume/gas/mist/vapors/spray. This material does not have established exposure limits. Use a chemical cartridge respirator for concentrations exceeding the Occupational Exposure Limit.
<b>Hand protection</b>	Protective gloves.
<b>Eye / face protection</b>	Avoid contact with eyes. Wear chemical goggles.
<b>Skin protection</b>	Avoid contact with the skin. Wear appropriate chemical resistant clothing. Protective gloves.
<b>General hygiene considerations</b>	When using do not smoke. Avoid contact with eyes. Avoid contact with skin. Handle in accordance with good industrial hygiene and safety practice.
<b>General</b>	Avoid contact with skin. Avoid contact with eyes.

## 9. Physical & Chemical Properties

<b>Appearance</b>	Granules and powder.
<b>Color</b>	White.

<b>Odor</b>	Odorless.
<b>Odor threshold</b>	Not available.
<b>Physical state</b>	Solid.
<b>Form</b>	Solid.
<b>pH</b>	Not available.
<b>Melting point</b>	456.8 °F (236 °C)
<b>Freezing point</b>	Not available.
<b>Boiling point</b>	Not available.
<b>Flash point</b>	Not available.
<b>Evaporation rate</b>	Not available.
<b>Flammability</b>	Not available.
<b>Flammability limits in air, upper, % by volume</b>	Not available.
<b>Flammability limits in air, lower, % by volume</b>	Not available.
<b>Vapor pressure</b>	Not available.
<b>Vapor density</b>	Not available.
<b>Specific gravity</b>	2.43
<b>Relative density</b>	Not available.
<b>Solubility (water)</b>	Very Soluble
<b>Partition coefficient (n-octanol/water)</b>	Not available.
<b>Auto-ignition temperature</b>	Not available.
<b>Decomposition temperature</b>	< 482 °F (< 250 °C)
<b>Molecular weight</b>	106.5000
<b>Molecular formula</b>	LiClO <sub>4</sub>

## 10. Chemical Stability & Reactivity Information

<b>Incompatible materials</b>	Flammable materials Combustible material.
<b>Hazardous decomposition products</b>	No hazardous decomposition products are known.
<b>Possibility of hazardous reactions</b>	Hazardous polymerization does not occur.

## 11. Toxicological Information

<b>Toxicological information</b>	The toxicological properties have not been fully investigated.
<b>Local effects</b>	Irritating to eyes. Irritating to skin. Irritating to respiratory system.
<b>Carcinogenicity</b>	This product is not considered to be a carcinogen by IARC, ACGIH, NTP, or OSHA.

## 12. Ecological Information

<b>Ecotoxicity</b>	This product has no known eco-toxicological effects.
<b>Persistence and degradability</b>	Not available.

## 13. Disposal Considerations

<b>Disposal instructions</b>	This product, in its present state, when discarded or disposed of, is not a hazardous waste according to Federal regulations (40 CFR 261.4 (b)(4)). Under RCRA, it is the responsibility of the user of the product to determine, at the time of disposal, whether the product meets RCRA criteria for hazardous waste. Dispose in accordance with all applicable regulations.
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## 14. Transport Information

### DOT

#### Basic shipping requirements:

**Proper shipping name** Perchlorates, inorganic, n.o.s.

**Hazard class** 5.1

**UN number** UN1481

**Packing group** II

#### Additional information:

**Special provisions** IB6, IP2, T3, TP33

**Packaging exceptions** 152

**Packaging non bulk** 212

**Packaging bulk** 242

**ERG number** 140



## 15. Regulatory Information

**US federal regulations** This product is a "Hazardous Chemical" as defined by the OSHA Hazard Communication Standard, 29 CFR 1910.1200.  
All components are on the U.S. EPA TSCA Inventory List.

CERCLA/SARA Hazardous Substances - Not applicable.

### CERCLA (Superfund) reportable quantity

None

### Superfund Amendments and Reauthorization Act of 1986 (SARA)

**Hazard categories** Immediate Hazard - Yes  
Delayed Hazard - No  
Fire Hazard - Yes  
Pressure Hazard - No  
Reactivity Hazard - No

**Section 302 extremely hazardous substance** No

**Section 311 hazardous chemical** Yes

### Inventory status

Country(s) or region	Inventory name	On inventory (yes/no)*
Australia	Australian Inventory of Chemical Substances (AICS)	Yes
Canada	Domestic Substances List (DSL)	Yes
Canada	Non-Domestic Substances List (NDSL)	No
China	Inventory of Existing Chemical Substances in China (IECSC)	Yes
Europe	European Inventory of New and Existing Chemicals (EINECS)	Yes
Europe	European List of Notified Chemical Substances (ELINCS)	No
Japan	Inventory of Existing and New Chemical Substances (ENCS)	Yes
Korea	Existing Chemicals List (ECL)	Yes
New Zealand	New Zealand Inventory	Yes
Philippines	Philippine Inventory of Chemicals and Chemical Substances (PICCS)	No
United States & Puerto Rico	Toxic Substances Control Act (TSCA) Inventory	Yes

A "Yes" indicates that all components of this product comply with the inventory requirements administered by the governing country(s)

**State regulations** This product does not contain a chemical known to the State of California to cause cancer, birth defects or other reproductive harm.

## 16. Other Information

**Further information** HMIS® is a registered trade and service mark of the NPCA.

**HMIS® ratings**

Health: 2  
Flammability: 0  
Physical hazard: 2

**NFPA ratings**

Health: 0  
Flammability: 0  
Instability: 0  
Special hazards: OX

**Disclaimer**

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.

**Issue date**

12-Jun-2008

**This data sheet contains changes from the previous version in section(s):**

This document has undergone significant changes and should be reviewed in its entirety.