MATERIAL SAFETY DATA SHEET

Product Name: FR-20/100
Product id: 8815T
Revision: 6
Supersedes: 10/10/2006

1. Identification of the substance & the company

Chemical name: Magnesium hydroxide
Chemical formula: Mg(OH)2
Chemical family: Alkaline earth hydroxide
Molecular weight: 58.32
Type of product and use: A high thermal stability flame retardant and a smoke suppressant.
Supplier: ICL-IP America Inc.,
622 Emerson Road - Suite 500
St Louis, Missouri 63141, USA
Tel: (314)983-7884  Fax: (314)983-7607
Emergency Telephone: Chemtrec (800)424-9300

2. Hazards identification

Emergency overview: White free flowing powder, odourless which is not hazardous

Potential Health Effects:
- Eye Contact: May cause mild irritation to the eyes
- Skin contact: Not irritant
- Inhalation: May cause irritation to mucous membranes and upper respiratory tract. Symptoms include sore throat, coughing, shortness of breath and nasal irritation.
- Ingestion: May cause abdominal pain and/or diarrhea. Acts as a laxative.

3. Composition / information on ingredients

<table>
<thead>
<tr>
<th>Components</th>
<th>CAS No.</th>
<th>Weight %</th>
</tr>
</thead>
<tbody>
<tr>
<td>Magnesium hydroxide</td>
<td>1309-42-8</td>
<td>99.5</td>
</tr>
</tbody>
</table>
4. First-aid measures

Eye contact
Holding the eyelids apart, flush eyes promptly with copious flowing water for at least 20 minutes.
Get medical attention immediately.

Skin contact
Remove contaminated clothing. Wash skin thoroughly with mild soap and plenty of water for at least 15 minutes. Wash clothing before re-use.
Get medical attention if irritation occurs.

Inhalation
In case of dust inhalation or breathing fumes released from heated material, remove person to fresh air. Keep him quiet and warm. Apply artificial respiration if necessary and get medical attention immediately.

Ingestion
If swallowed, wash mouth thoroughly with plenty of water and give water to drink.
Get medical attention immediately.

*****************************************************************************************************************************************
NOTE: Never give an unconscious person anything to drink.
*****************************************************************************************************************************************

Notes to the physician
Material with low toxicity.
Treat symptomatically and supportively. In case of ingestion induce vomiting in alert patient.

5. Fire - fighting measures

Suitable extinguishing media
Material is not combustible. Use extinguishing media appropriate to surrounding fire conditions.

Fire fighting procedure
Cool containers with water spray. In closed stores, provide fire-fighters with self-contained breathing apparatus in positive pressure mode

Unusual fire and explosion hazards
Will decompose above 385°C forming magnesium oxide and water. This reaction does not create fire or explosion hazards.

6. Accidental release measures

Personal precautions
Wear respirator, chemical safety goggles, rubber gloves and boots
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Methods for cleaning up:  
Sweep up, place in a bag and hold for waste disposal or possible re-use.  
Avoid raising dust.  
Ventilate area and wash spill site after material pickup is complete.

7. Handling and storage

Handling:  
Keep containers tightly closed. Avoid bodily contact.

Storage:  
Store in a dry, cool, well-ventilated area away from incompatible materials (see "materials to avoid").

8. Exposure controls / personal protection

Exposure Limits:

<table>
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<tr>
<th>Components</th>
<th>ACGIH-TLV Data</th>
<th>OSHA (PEL) Data</th>
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<tbody>
<tr>
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<td>Not determined</td>
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Ventilation requirements:  
Ventilation must be sufficient to maintain TLV-TWA below 3 mg/m³, respirable particles, and 10 mg/m³, inhalable particles (ACGIH recommendation for Particles (Insoluble or poorly soluble) Not Otherwise Specified (PNOS)).

Personal protective equipment:
- Respiratory protection: Dust respirator
- Hand protection: Protective gloves
- Eye protection: Chemical safety goggles
- Skin and body protection: Body covering clothes and boots

Hygiene measures:  
Do not eat, smoke or drink where material is handled, processed or stored. Wash hands carefully before eating or smoking.
9. Physical and chemical properties

Appearance: White free flowing powder, odourless
Boiling point/range: Not applicable under standard conditions
Melting point/range: 350°C (decomposes)
Flash point: None
Flammable/Explosion limits: Not flammable
Auto-ignition temperature: Not applicable
Vapour pressure: Not applicable under standard conditions
Evaporation rate (ether=1): Not applicable under standard conditions
Vapor density: Not applicable under standard conditions
Solubility:
- Solubility in water: Practically insoluble
- Solubility in other solvents: Soluble in ammonium salts and dilute acids
Bulk density: 0.7-0.85 g/ml
Specific gravity: 2.36
Decomposition temperature: 385°C

10. Stability and reactivity

Stability: Stable under normal conditions.
Materials to avoid: Strong acids and anhydrides
Conditions to avoid: Heating above decomposition temperature
Hazardous decomposition products: None
Hazardous polymerization: Will not occur

11. Toxicological information

Acute toxicity:
- Rat oral LD50: >5000 mg/kg
- Eye irritation (rabbit): Mild irritant
- Dermal irritation (rabbit): Not irritant
Dermal sensitization: Not a sensitizer

Chronic toxicity: No information available
Mutagenicity: Not mutagenic by the Ames Test
12. Ecological information

Information on ecological effects
No information available

13. Disposal considerations

Waste disposal
Observe all federal, state and local environmental regulations when disposing of this material

14. Transportation information

DOT
Not regulated

IMO
Not regulated

ICAO/IATA
Not regulated

15. Regulatory information

USA
Reported in the EPA TSCA Inventory

Canada
Listed in DSL

EU
EC No.
215-170-3

Japanese METI
ENCS No.:1-386

Australia
Listed in AICS

New Zealand Inventory
Listed in NZIoC

China inventory
Listed
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Korea
Listed in ECL (KE-22716)

Philippines
Listed in PICCS

16. Other information

This data sheet contains changes from the previous version in section(s)
1,3,13,15

Health, Safety & Environment Policy
We will strive to ensure that our operations and products meet the needs of the present global community without compromising the ability of future generations to meet their needs
We accept that the success of our business is dependent on the supply of products and services that will benefit society whilst ensuring human safety and protection of the environment and natural resources
Within the framework of our commitment to the Responsible Care program, we will provide a healthy and safe work environment for employees and will responsibly manage our products at all stages of their life cycle in order to protect human health and the environment whilst maintaining high production standards of operation

TO MEET THIS COMMITMENT WE WILL:
Comply with or exceed applicable national and international regulatory requirements and other requirements to which we subscribe
Communicate openly and actively encourage dialogue with employees, customers and community concerning our products and operations
Implement documented management systems consistent with and for promotion of the Responsible Care ethics
Develop and supply products that can be manufactured, transported, used and disposed of safely whilst best meeting the needs of our customers
Regularly assess, continually improve and responsibly manage health, safety and environmental risks associated with products and processes throughout their life-cycles
Share knowledge and expertise with others and seek to learn from and incorporate improved practices into our own operations
Educate and train employees, contractors and customers to improve their HSE performance
Communicate up-to-date information to enable our workers, customers and other interested parties to handle our products in a safe and environmentally responsible manner
Endeavor to work with customers, suppliers, distributors and contractors to foster the safe use, transport and disposal of our chemicals
Support Product Stewardship programs in cooperation with customers, distributors and transporters
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In an event of discrepancy between the contents of this MSDS and the English version of it, the English version shall prevail.

Prepared By

HERA Division in ISRAEL
telephone: +/972-8-6297835
telefax: +/972-8-6297832
www.icl-ip.com
e-mail:msdsinfo@icl-ip.com

End of safety data sheet