

SECTION I: CHEMICAL PRODUCT & COMPANY INFORMATION

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PRODUCT NAME(S): **MagShield UF NB25**

CHEMICAL DESCRIPTION: Magnesium Hydroxide powder with magnesium stearate coating
FORMULA: Mg(OH)₂

SECTION II: HAZARDS IDENTIFICATION

EMERGENCY OVERVIEW: Product contains mechanical irritants to skin, eyes and respiratory tract and may present a nuisance dust hazard. Avoid breathing dust. Avoid contact with skin. Wear protective clothing including gloves, goggles or safety glasses with side shields and an approved dust mask.

Product hazard class: Not classified as hazardous according to GHS criteria.

Label content: *May be irritating to eyes, respiratory system (nasal passages, throat, lungs) and skin.*

Other hazards: None known

SECTION III: COMPOSITION/INFORMATION ON INGREDIENTS

<u>HAZARDOUS COMPONENT</u>	<u>CAS No</u>	<u>Approx Wt %</u>
Magnesium Hydroxide	01309-42-8	>95%
Magnesium Stearate	557-04-0	—approx. 2.5%

SECTION IV: FIRST AID MEASURES

INHALATION: Remove to fresh air immediately. Do not permit exposed person to remain in dusty environment without adequate respiratory protection. Treat metal fume fever with bed rest and treat for fever and pain.

EYE CONTACT: Do not rub eyes. Wash eyes under slowly running water for at least fifteen minutes, making sure eyes are held wide open and moved slowly in every direction. Ensure no solid particles remain in creases of eyelids. If so, continue to wash. If irritation persists, consult an ophthalmologist.

SKIN CONTACT: Remove from source of irritation. Remove contaminated clothing and wash affected area thoroughly with a mild soap and water. Wash contaminated clothing before reusing.

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INGESTION: Treat symptomatically. If bowel obstruction occurs, immediately consult a physician. Do NOT induce vomiting. If conscious and alert, rinse mouth and drink 2-4 cupfuls of milk or water.

MEDICAL CONDITIONS GENERALLY AGGRAVATED BY EXPOSURE: As with exposure to any environment without adequate personal protection, inhalation of magnesium oxide dust or fume may aggravate any pre-existing respiratory disease; prolonged/frequent skin contact may lead to dermatitis.

SECTION V: FIRE FIGHTING MEASURES

FLASH POINT (METHOD): Product is not flammable or combustible.

AUTO-IGNITION TEMP: Not applicable LEL: Not applicable UEL: Not applicable

SENSITIVE TO MECHANICAL IMPACT? No SENSITIVE TO STATIC DISCHARGE? No

FLAMMABILITY CLASSIFICATION: Not flammable CONDITIONS OF FLAMMABILITY: Not flammable

EXTINGUISHING MEDIA: Use media appropriate to primary source of fire. Otherwise, use dry chemical, carbon dioxide, water spray or foam.

SPECIAL FIREFIGHTING PROCEDURES: No special procedures; avoid breathing fumes or dust; keep upwind.

UNUSUAL FIRE & EXPLOSION HAZARDS: None known.

HAZARDOUS COMBUSTION PRODUCTS: None known.

SECTION VI: ACCIDENTAL RELEASE MEASURES

Ventilate enclosed spaces and use appropriate respiratory protection. Sweep or vacuum spilled material in a manner to avoid generation of dust. Reclaim product for re-use, if possible, or collect in containers for disposal in an appropriate manner.

SECTION VII: HANDLING & STORAGE

HANDLING PROCEDURES AND EQUIPMENT: Keep container closed when not in use. Avoid contact with eyes. Avoid breathing dust or fume and only use in a well ventilated area. Consumption of food and beverages should be avoided in work area where product is being used. After handling product, always wash hands and face thoroughly with soap and water before eating, drinking or smoking.

STORAGE REQUIREMENTS: Suitable for any general chemical storage area.

SECTION VIII: EXPOSURE CONTROLS/PERSONAL PROTECTION

SPECIFIC ENGINEERING CONTROLS: Local and general mechanical dust collection and ventilation in accordance with good engineering practices should be provided to maintain dust levels below permissible exposure levels specified in Section VIII.

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PERSONAL PROTECTIVE EQUIPMENT:

GLOVES: Dust impervious gloves during manual handling of product.

EYES: Safety glasses with side-shields or tight fitting goggles.

FOOTWEAR: Steel reinforced shoes when handling pallets of product.

CLOTHING: Long sleeves, buttoned collar, long pants extended over shoes or coveralls.

RESPIRATORY - UP TO 100 MG/M3: Any dust, mist or fume respirator; any air supplied respirator; or, self-contained breathing apparatus.

UP TO 250 MG/M3: Any supplied air respirator operated in a continuous flow mode or any powered air purifying respirator with a dust/mist/fume filter.

UP TO 500 MG/M3: High efficiency particulate filter with full face piece; any powered air supplied respirator with a tight fitting face piece and a high efficiency particulate filter; any self contained breathing apparatus with a full face piece; any supplied air respirator with a full face piece.

UP TO 7500 MG/M3: Any air supplied respirator with full face piece and operated in a pressure demand or other positive pressure mode.

EMERGENCY or ENTRY INTO UNKNOWN CONCENTRATIONS: Self contained breathing apparatus with full face piece and operated in pressure demand mode or air supplied respirator with full face piece operated in a pressure demand or other positive pressure mode in combination with auxiliary self contained breathing apparatus operated in pressure demand or positive pressure mode.

ESCAPE: Any air purifying full face piece respirator with high efficiency particulate filter or any appropriate escape type self contained apparatus.

EXPOSURE LIMITS

Magnesium hydroxide: No exposure limits established by OSHA, ACGIH or NIOSH.

If magnesium hydroxide is heated over 1700°C (in a reducing environment), magnesium oxide fume may be generated. Exposure limits for magnesium oxide fume include:

ACGIH - Time Weighted Averages Magnesium oxide fume 10 mg/m³ TWA

ACGIH - TLV Basis: Critical Effects Magnesium oxide fume irritation; metal fume fever

Australian Exposure Standards Magnesium oxide fume 10 mg/m³ TWA

California - Exposure Limits: PELs Magnesium oxide fume as Mg: 10 mg/m³

Canada - Alberta -

15 Minute Occupational Exposure Limit Magnesium oxide fume 20 mg/m³ STEL

8 Hour Occupational Exposure Limit Magnesium oxide fume as Mg: 10 mg/m³ TWA

Canada - British Columbia -

15 Minute Exposure Limits Magnesium oxide fume 10 mg/m³

8 Hour Exposure Limits Magnesium oxide fume as Mg;

Total dusts: 10 mg/m³ TWA;

Respirable dust and fumes: 3 mg/m³ TWA

Canada - Ontario -

OHSA - TWAEVs Magnesium oxide fume 10 mg/m³ TWAEV

Proposed Occupational STEVs 5 mg/m³ STEV

Canada - Quebec - Magnesium oxide fume

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Time-Weighted Average Exposure Magnesium oxide fume as Mg: 10 mg/m³ TWAEV
German (DFG) -
MAK Values Magnesium oxide fume respirable fraction: 1.5 mg/m³ MAK (includes magnesium oxide fume)
Peak Limitations Magnesium oxide fume 2 x normal MAK (30 min. average value); don't exceed 4 times during shift; half-life <2h
Israel -
Action Levels Magnesium oxide fume 5 mg/m³ AL
Time Weighted Averages Magnesium oxide fume 10 mg/m³ TWA
Mexico - Instruction No. 10 - TWAs Magnesium oxide fume 10 mg/m³ TWA
US - OSHA -
Final PELs: Time Weighted Average Magnesium oxide fume total particulate: 15 mg/m³ TWA
Vacated PELs: Time Weighted Avg Magnesium oxide fume total particulate: 10 mg/m³ TWA
United Kingdom -
Occupational Exposure Standard: STEL Magnesium oxide fume fume and respirable dust, as Mg: 10 mg/m³ STEL
Occupational Exposure Standards: TWA Magnesium oxide fume fume and respirable dust, as Mg: 5 mg/m³ TWA; total inhalable dust, as Mg: 10 mg/m³ TWA

Stearic acid: No exposure limits established by OSHA, ACGIH or NIOSH.

SECTION IX: PHYSICAL & CHEMICAL PROPERTIES

APPEARANCE AND ODOR: White powder; no odor

BOILING POINT (F): Not applicable

FREEZE POINT (F): Not applicable

pH: ~10 saturated sol

VAPOR PRESSURE (mm Hg): Not determined

% VOLATILE (by VOL): Not applicable

SPECIFIC GRAVITY: 2.36

VAPOR DENSITY: Not applicable

EVAPORATION RATE: Not applicable

SOLUBILITY IN WATER: Slightly soluble

ODOR THRESHOLD (ppm): Not determined

PHYSICAL STATE: Solid

OIL/WATER PARTITION COEFFIC: Not applicable

MW: 58.32 MgOH; 591.27 Mag stearate

MELTING POINT: 88.5 (C) (Mag Stearate)

SECTION X: STABILITY & REACTIVITY

STABLE: Yes

CONDITIONS OF REACTIVITY: Will react with incompatibles (see below)

CONDITIONS OF CHEMICAL INSTABILITY: Stable under ambient temperatures and pressures.

INCOMPATIBILITY (MATERIALS TO AVOID): ACID (Strong) - vigorous reaction, heat generated; MALEIC ANHYDRIDE - Alkali and other alkaline earth compounds, including magnesium compounds, will cause explosive decomposition; PHOSPHORUS - when boiled with alkaline hydroxides yields mixed phosphines which may ignite spontaneously in air. Stearic acid is incompatible with oxidizing agents and reducing agents.

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HAZARDOUS DECOMPOSITION PRODUCTS: If magnesium hydroxide is heated to the point of volatilization (i.e., >1700°C), magnesium oxide FUMES may be generated. Stearic acid may form carbon monoxide and/or carbon dioxide during combustion.

IS THIS PRODUCT SUBJECT TO POLYMERIZATION? No

CONDITIONS UNDER WHICH PRODUCT WILL POLYMERIZE: None known.

SECTION XI: TOXICOLOGICAL INFORMATION

EFFECTS OF ACUTE EXPOSURE: Not acutely toxic; Oral LD50 in the rat is 8500 mg/kg; Intraperitoneal LD50 in the rat is 2780 mg/kg
Ingestion generally causes purging of the bowels, however, swallowing large amounts may lead to bowel obstruction. Dust may irritate eyes, skin, nasal passages and respiratory tract.

SIGNS & SYMPTOMS OF EXPOSURE:

INHALED DUST: sneezing, coughing, discolored sputum

INHALED FUME: metal fume fever has influenza-like symptoms including fever, chills, perspiration, cough, nasal irritation, chest pain, nausea, head aches, vomiting and muscular weakness. Symptoms may be delayed 1-3 hours after exposure however no reports of such exposures from industrial contact have been reported.

EYE CONTACT: redness, tearing, conjunctivitis.

SKIN CONTACT: drying, chapping, dermatitis.

EFFECTS OF CHRONIC EXPOSURE: Chemically similar, magnesium oxide is negative in the standard Ames microbial mutagenicity assay both with and without metabolic activation.

Magnesium hydroxide was not carcinogenic when administered in feed over a lifetime to rats.

Magnesium stearate fed to rats for 3 months at extremely high doses in the diet resulted in effects on the liver and kidneys.

ROUTES OF ENTRY - SKIN CONTACT: Yes SKIN ABSORPTION: No
EYE CONTACT: Yes INHALATION: Yes INGESTION: Yes

NAME OF TOXICOLOGICALLY SYNERGISTIC PRODUCTS: None known.

IRRITANCY OF PRODUCT: No data available.

REPRODUCTIVE TOXIN? No TERATOGEN? No MUTAGEN? No SENSITIZER? No

CONSIDERED CARCINOGENIC BY - NTP? No IARC? No OSHA? No

SECTION XII: ECOLOGICAL INFORMATION

No data available. Magnesium hydroxide occurs in nature as the mineral brucite

SECTION XIII: DISPOSAL CONSIDERATIONS

Dispose according to local, state/provincial and federal regulations.

SECTION XIV: TRANSPORT INFORMATION

SHIPPING NAME: Not regulated under DOT TRANSPORTATION CLASS: Not applicable

SPECIAL SHIPPING INFORMATION: No special precautions. For further information, refer to -

- Handling & Storage (Section VII)
- Stability & Reactivity (Section X)

This product does not meet the criteria of any classification under Section 3 nor is specifically listed as dangerous goods in Section 4.2 under IATA *Dangerous Goods Regulations*.

SECTION XV: REGULATORY INFORMATION

All of the ingredient(s) contained in this product are included on the following inventory and/or regulatory lists:

Canada - Domestic Substance List (DSL): Magnesium hydroxide (1309-42-8)

Canada - WHMIS: Ingredient Disclosure List - Magnesium hydroxide (Not listed)

Canada - This product has been classified in accordance with the hazard criteria of the *Controlled Products Regulations* and the MSDS contains all the information required by the *Controlled Products Regulations*.

Australian Inventory of Chemical Substances (ACIS): Magnesium hydroxide (1309-42-8)

European Inventory of Existing Commercial Chemical Substances (EINECS): Magnesium hydroxide (215-170-3)

Japan - Existing and New Chemical Substances (ENCS) - Magnesium hydroxide (1-386)

Not listed under Poisonous and Deleterious Substances Control Law, PRTR Law or Industrial Safety and Health Law

Korea - Existing and Evaluated Chemical Substances (KECL) - Magnesium hydroxide (KE-22716)

Philippines Inventory of Chemicals and Chemical Substances (PICCS) - Magnesium hydroxide (present)

Swiss Giftliste 1 (List of Toxic Substances 1), 31 May 1999 - Magnesium hydroxide (G-8166) Toxic Category 4: Acute oral lethal dose of 500 - 2000 mg/kg.

U.S. Toxic Substances Control Act (TSCA) 8(b)Inventory List: Magnesium hydroxide (1309-42-8)

SECTION XVI: OTHER INFORMATION

SOURCES USED: ACGIH 2000; RTECS June 1998; Sax - 8th Ed.; Ind. Exposure & Control Techn. for OSHA Regulated Substances - MgO (fume), March, 1989, pp. 1181-1184; NIOSH Occupational Health Guide for Chemical Substances - Vol. II, September, 1978. Hazardous Substances Database.

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