

MILDEX® (MP100)

MATERIAL SAFETY DATA SHEET



1. COMPOSITION / INFORMATION ON INGREDIENTS

Chemical Name	: Homogeneous mixture of Sulfur and Copper Oxychloride
Common Name	: Mildex / MP100
Chemical Formula	: N/A
Molecular Weight Sulfur	: 32.06
Molecular Weight Copper Oxychloride	: 427.13
Composition	: 54.600% Sulfur (s) and 15.90% Cu as copper (Cu)
CAS No Sulfur	: 7704 34 – 9
CAS No Copper Oxichloride	: 1332 – 40 7
UN No	: 3077
Class	: 9

2. HAZARDS IDENTIFICATION

Product hazards classification	: Hazardous to people's health
Effects of acute overexposure (one time only)	: n/a
Inhalation (sulphur powder)	: May cause coughing, tracheal burning sensation & could cause lung edema & breathing distress
Skin Contact	: May cause skin irritation
Eye Contact	: May cause eye irritation resulting in tearing & possible conjunctivitis
Ingestion	: Abdominal pain, nausea, vomiting & diarrhea
Effects of chronic exposure (long-term)	: May result in respiratory & ophthalmologic disorders, in addition to bronchitis & chronic sinusitis

HAZARDS IDENTIFICATION (CONT'D)

Hazards to the environment	: Lengthy exposure of product on soils & vegetation may cause harm. Potential risks due to contamination are low if product is used at recommended doses & properly applied
Product's special hazards	: Hydrogen sulfur may be released from sulfur decomposition & may cause depression of the central nervous system, resulting in headache, nausea, vertigo, salivation, loss of consciousness & death

3. FIRST AID MEASURES

If accidental contact with product occurs, proceed as follows:

Inhalation	: Remove victim from exposure source. If victim is affected by sulfur decomposition products, remove immediately to open air and seek medical attention. If breathing is irregular, apply artificial respiration & administer oxygen at 100%, as needed.
Skin Contact	: Remove contaminated clothes and wash affected area with abundant water and soap. If irritation persists, seek medical attention.
Eye Contact	: Flush eyes thoroughly with abundant water for at least 15 minutes.
Ingestion	: Do NOT GIVE anything by mouth to an unconscious person. Give 200mL of water or milk; do not exceed 15mL / kg of weight in children. Seek medical attention immediately.
Advice to treating physician	: Do NOT induce vomiting. If breathing becomes difficult, administer oxygen at 100%

4. FIRE FIGHTING MEASURES

Extinguishing media	: Choke fire to exclude air containing inert materials (such as water spray, mist or vapor). Apply indirectly to avoid disturbance of bulk product and cause particles to become suspended in the air. In small fires use carbon dioxide or sand.
Special fire fighting procedures	: Precautions should be taken due to the release of toxic fumes (sulfurous anhydride). In case of fire, avoid spreading power material.

FIRE FIGHTING MEASURES (CONT'D)

Personal protection equipment to be used in fire fighting : Use adequate protective clothes and self-contained, positive pressure breathing apparatus, especially in confined areas.

5. ACCIDENTAL RELEASE MEASURES

Emergency measures if material is spilled : Avoid the unnecessary mixture of particulate material by means of cleaning equipment; avoid flattening and dust generation. Remove all material spilled and take to appropriate site for cleaning or disposal. Avoid disposal by means of combustion; avoid all sources of spark ignition.

Emergency Personal protection Equipment : Use adequate protective clothing, safety goggles and mask with filter for dust particles.

6. HANDLING & STORAGE

Technical recommendations : Preventative action fungicide and bactericide to control grapevine oidium and main agents causing acid rotting complex (*Rhizopus stolonifer*, *Cladosporium herbarum* and bacteria in the acetic group: *Acetobacter*, *Gluconobacter*).

Precautions : Product has corrosive properties and, therefore, electrical equipment should be protected.
Do NOT eat or drink while manipulating product; change clothes at the end of the work day, wash with abundant water & soap.

Specific recommendations for safe handling of product : Do NOT expose product to high temperatures and moisture. Do not apply product against the wind.

Storage conditions : Store in a safe, cool, well ventilated place at all times. Rotation of storage place can minimize acidity generated. This acidity may result in corrosion of metals or structural concrete materials.

Recommended packaging : Packaging recommended should maintain product insulated from the environment and moisture. Avoid using metallic materials.

7. EXPOSURE CONTROL / SPECIAL PROTECTION

Measures to reduce exposure possibilities	: Prevent accumulation of powder in the air.
Control Parameters	: LEL (Lower explosive limit) = 35 g/m ³ (*)
Weighted permissible limits (LPP) and absolute permissible limits (LPA)	: Not determined
Breathing protection	: If dust problems are present, use a NIOSH-approved breathing apparatus.
Protective gloves	: Use acid and heat-resistant gloves.
Eye protection	: Use protective goggles against dust, or full-face mask – as needed.
Other protective equipment	: Use adequate clothing as per emergency.
Ventilation	: Natural or forced ventilation should be available at all times.

8. PHYSICAL & CHEMICAL PROPERTIES

Physical state	: Solid.
Appearance and colour	: Olive green micro-granules
Concentration	: 54.60% sulphur and 15.90% Cu as copper oxychloride
pH (10% aqueous solution)	: 8.5 – 9.5.
Decomposition temperature	: Information not available.
Flash point	: None.
Explosive properties	: Not available.
Fire or explosion hazards	: Fire hazards, increased by the presence of small particles in the air.
Flame propagation rate	: Not available
Vapour pressure at 20°C	: Not applicable
Vapour density	: Not applicable

PHYSICAL & CHEMICAL PROPERTIES (CONT'D)

Apparent density	: 0.90 – 1.00 g/cc
Solubility in water and other solvents	: Insoluble in water and most organic solvents known.

9. STABILITY & REACTIVITY

Stability	: Does not produce quick reaction with air or water in absence of initiators, but product is corrosive when moist or wet. Unstable in the presence of strong oxidizing agents forming sulphur dioxide.
Conditions to be avoided	: Moisture, acidic environment and oxidizing agents.
Incompatibilities (materials to be avoided)	: Materials susceptible to corrosion.
Hazardous decomposition products	: Generation of sulfurous anhydride, sulfurous acid, sulfuric acid.
Hazardous combustion products	: Sulfurous anhydride. Under certain conditions, product may generate hydrogen chloride.
Hazardous polymerization	: Does not occur.

10. TOXICOLOGICAL INFORMATION

Acute toxicity	: LD ₅₀ oral rats = 2,000 mg/kg. LD ₅₀ dermal rats = over 2,000 mg/kg (*) Estimated in function of the LD ₅₀ of active ingredients. Data for copper oxychloride.
Chronic or long-term activity	: Chronic exposure may result in respiratory and ophthalmologic disorders, in addition to chronic bronchitis and sinusitis.
Local effects	: Irritant to skin, membranes and eyes.
Allergic sensitization	: Moderate effect when product is formulated.

11. ECOLOGICAL INFORMATION

Instability	: Product does not react quickly in water or air in absence of initiators, but is highly corrosive when moist, due to the formation of acids.
Persistence / Degradability	: Product does not require degradation, since it's elements belong naturally to the environment.
Bio-accumulation	: Plants incorporate sulfur in physiological substances. In animals, copper is eliminated through feces, while small concentrations can be incorporated.
Effects on the environment	: Sulfur is a component of the environment. There is a natural oxide-reduction reaction cycle that transforms sulfur into organic and inorganic compounds. Copper is heavily absorbed by soil particles.

12. CONSIDERATIONS ON FINAL DISPOSAL

Product residue disposal method	: Product should be disposed of in authorized residue deposits, as per legislation in effect.
Disposal of contaminated containers / packaging	: Dispose of containers as per local legislation in force.

13. TRANSPORT INFORMATION

NCh 2190, applicable branding	: Slightly toxic fungicide.
Nu No	: 3077
Class	: 9

14. APPLICABLE STANDARDS

<u>Applicable International Standards</u>	: Food and Agricultural Organisation Regulations.
<u>Applicable Domestic Standards</u>	: 2190, Law Decree No 594
Marking on Label	: Precaution

15. CONTACT INFORMATION

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