



SAFETY DATA SHEET

Dosaline Base

Revision Date: January 6, 2023

SECTION 1: IDENTIFICATION OF SUBSTANCE / MIXTURE

Product Name: Dosaline Base

Fertilizer Formula: 12 - 0 - 1

Product Type: Powder

Recommended Use: Hydroponics

Restrictions on use: N / A

Manufacturer: Future Harvest Development LTD.

Emergency Telephone Number: 250-491-0255

24 Hour Emergency Telephone Number: CANUTEC 1-613-996-6666

SECTION 2: HAZARD IDENTIFICATION

2.1 Classification of the substance or mixture

Acute Oral Toxicity - Category 4

Skin corrosion/irritation - Category 3

Eye Irritation - Category 2A

2.2 Label elements

Signal Word: **WARNING**



Hazard Statement(s):

H302 Harmful if swallowed.

H316 Causes mild skin irritation.

H319 Causes serious eye irritation.

Precautionary Statement(s):**Prevention:**

P264 Wash hands thoroughly after handling.

P270 Do not eat, drink, or smoke when using this product.

P280 Wear protective gloves / protective clothing / eye protection / face protection.

Response:

P301+P312 IF SWALLOWED: Call a POISON CENTER or doctor/physician if you feel unwell.

P330 Rinse mouth.

P332+P313 If skin irritation occurs: Get medical advice/attention.

P305+P351+P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

P337+P313 If eye irritation persists: Get medical advice/attention.

SECTION 3: COMPOSITION / IDENTIFICATION ON INGREDIENTS

Chemical Name	CAS No.	Concentration	Other Names
Calcium Nitrate	10124-37-5	60-80%	
Potassium Nitrate	7757-79-1	2-5%	
Magnesium Nitrate	13446-18-9	35-45%	

Note: There are no additional ingredients present which, within the current knowledge of the supplier and in the concentrations applicable, are classified as hazardous to health or the environment and hence require reporting in this section. Occupational exposure limits, if available, are listed in Section 8.

SECTION 4: FIRST-AID MEASURES

4.1 Description of first aid measures

Eye contact: In case of contact with eyes, rinse immediately with plenty of water for at least 15 minutes. Get medical attention if irritation occurs.

Skin contact: Take off contaminated clothing and shoes immediately. Wash off with soap and plenty of water. Get medical attention if irritation occurs.

Inhalation: Remove the victim from site of exposure to fresh air. If breathing is difficult, give oxygen. If not breathing give artificial respiration. Get medical attention.

Ingestion: Do not induce vomiting. If victim is conscious, wash mouth thoroughly with plenty of water. Never give anything by mouth to an unconscious person. Get medical attention.

4.2 Most important symptoms and effects, both acute and delayed

Dusts may cause coughing and sneezing. Ingestion of large quantities may cause gastrointestinal irritation, vomiting and diarrhea.

4.3 Indication of any immediate medical attention and special treatment needed

Treat symptomatically. Clinical findings: The smooth muscle relaxant effect of nitrate salts may lead to headache, dizziness and marked hypotension.

Cyanosis is clinically detectable when approximately 15% of the haemoglobin has been converted to methaemoglobin (ie. ferric iron). Symptoms such as headache, dizziness, weakness and dyspnoea occur when methaemoglobin concentrations are 30% to 40%; at levels of about 60%, stupor, convulsions, coma and respiratory paralysis occur, and the blood is a chocolate brown colour. At higher levels death may result. Spectrophotometric analysis can determine the presence and concentration of methaemoglobin in blood.

Treatment:

1. Give 100% oxygen.
2. In cases of (a) ingestion: use gastric lavage, (b) contamination of skin (unburnt or burnt): continue washing to remove salts.
3. Observe blood pressure and treat hypotension if necessary.

4. When methaemoglobin concentrations exceed 40% or when symptoms are present, give methylene blue 1 to 2 mg/kg body weight in a 1% solution by slow intravenous injection. If cyanosis has not resolved within one hour a second dose of 2 mg/kg body weight may be given. The total dose should not exceed 7 mg/kg body weight as unwanted effects such as dyspnoea, chest pain, vomiting, diarrhoea, mental confusion and cyanosis may occur. Without treatment methaemoglobin levels of 20-30% revert to normal within 3 days.

5. Bed rest is required for methaemoglobin levels more than 40%.

6. Continue monitoring, give oxygen for at least two hours after treatment with methylene blue.

7. Consider transfer to centre where hemoperfusion can be performed to remove the nitrates from the blood if the condition of the patient is unstable.

8. Following inhalation of oxides of nitrogen the patient should be observed in hospital for 24 hours for delayed onset of pulmonary oedema. Further observation for 2-3 weeks may be required to detect the onset of the inflammatory changes of bronchiolitis fibrosa obliterans.

SECTION 5: FIRE-FIGHTING MEASURES

5.1 Extinguishing media

Not combustible, however, if material is involved in a fire use extinguishing media appropriate to surrounding fire conditions.

5.2 Special hazards arising from the substance or mixture

Non-combustible material.

5.3 Advice for firefighters

Decomposes on heating emitting toxic fumes, including those of oxides of nitrogen. If safe to do so, remove containers from path of fire. Keep containers cool with water spray. Fire fighters to wear self-contained breathing apparatus and suitable protective clothing if risk of exposure to products of decomposition.

SECTION 6: ACCIDENTAL RELEASE MEASURES

6.1 Personal precautions, protective equipment, and emergency procedures

Use personal protective equipment. Avoid breathing vapors, mist, or gas.

Ensure adequate ventilation. Ventilate area of spill.

6.2 Environmental precautions

Prevent entry into waterways, sewers, basements, or confined areas.

6.3 Methods and materials for containment and cleaning up

Pick up and place in a suitable container for reclamation or disposal, using a method that does not generate dust.

6.4 Reference to other sections

See Section 1 for emergency contact information.

See Section 13 for additional waste treatment information.

SECTION 7: HANDLING AND STORAGE

7.1 Precautions for safe handling

Minimize dust generation and accumulation. Do not breathe vapour. Avoid contact with skin and eyes. Wash thoroughly after handling. Eating, drinking, and smoking should be prohibited in areas where this material is handled, stored, and processed. Workers should wash hands and face before eating, drinking, and smoking. Remove contaminated clothing and protective equipment before entering eating areas. See also Section 8 for additional information measures.

7.2 Conditions for safe storage, including any incompatibilities

Store and use away from heat, sparks, open flame, or any other ignition source.

Avoid contact with combustible materials. Prevent moisture pick-up in handling and storage.

Packaging Materials Recommended: Use original container.

7.3 Specific use(s):

N / A

SECTION 8: EXPOSURE CONTROLS AND PERSONAL PROTECTION

8.1 Control parameters

N / A

8.2 Appropriate engineering controls

General ventilation is usually adequate.

Use local exhaust ventilation and enclosure, if necessary to control amount in the air.

8.3 Individual protection measures, such as personal protective equipment

General Information: Good general ventilation (typically 10 air changes per hour) should be used. Ventilation rates should be matched to conditions. If applicable, use process enclosures, local exhaust ventilation, or other engineering controls to maintain airborne levels below recommended exposure limits. If exposure limits have not been established, maintain airborne levels to an acceptable level.

Eye / Face Protection: Wear safety glasses with side shields (or goggles).

Skin / Hand Protection: Chemical resistant gloves.

Other: Wear suitable protective clothing.

Respiratory Protection: In case of inadequate ventilation, use respiratory protection.

Hygiene Measures: Provide eyewash station and safety shower. Always observe good personal hygiene measures, such as washing after handling the material and before eating, drinking, and/or smoking. Routinely wash work clothing to remove contaminants. Discard contaminated footwear that cannot be cleaned.

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

9.1 Information on basic physical and chemical properties

Appearance: Light yellow powder.

Odour: Odorless.

Odour Threshold: Odorless.

pH: Unknown.

Initial Boiling Point / Boiling Range: N / A

Flash Point: N / A

Evaporation Rate: Not volatile (butyl acetate=1).

Flammability: Not flammable.

Upper / Lower Flammability or Explosive Limits:

Vapor Pressure: 4.5×10^{-15} Pa at 25°C- Not volatile.

Vapor Density: Not volatile.

Relative Density: 1.0 at $25.1 \pm 0.5^\circ\text{C}$ (water=1).

Solubility(ies):

Water Solubility: Soluble.

Partition Coefficient Octanol / Water: The product is more soluble in water; $\log(\text{octanol/water}) < 1$.

Auto-ignition Temperature: N / A

Decomposition Temperature: N / A

Viscosity: N / A

Explosive Properties: Not explosive.

Oxidizing Properties: Not oxidizer.

9.2 Other information

Melting Point / Freezing Point: N / A

VOC: Not an organic compound.

Specific Gravity: Unknown.

Miscibility: N / A

Fat Solubility: N / A

Gas Group: N / A

SECTION 10: STABILITY AND REACTIVITY

10.1 Reactivity

No information available.

10.2 Chemical stability

The product is stable under normal handling and storage conditions described in Section 7.

Reacts with acids and alkalis.

10.3 Possibility of hazardous reactions

Hazardous reactions are not expected, under normal conditions of storage and use.

10.4 Conditions to avoid

N / A

10.5 Incompatible materials

Incompatible with organic chemicals, ammonia.

10.6 Hazardous decomposition products

Oxides of nitrogen.

SECTION 11: TOXICOLOGICAL INFORMATION

11.1 Information on likely routes of exposure

Ingestion: Irritating. May cause nausea, stomach pain and vomiting.

Inhalation: May cause irritation to the respiratory system.

Skin Contact: Causes mild skin irritation.

Eye Contact: Causes eye irritation.

11.2 Information on toxicological effects

Acute Toxicity (list all possible routes of exposure).

Oral Product: LD 50.

Calcium Nitrate: 302 mg/kg (rat).

Potassium Nitrate: 3750 mg/kg (rat).

Magnesium Nitrate: N / A

Chronic Effects: Ingestion of large quantities will cause methemoglobinemia with headaches, heartbeat irregularities, blood pressure loss, cramps and breathing difficulties.

Cyanosis will occur. Nephritis can result from chronic exposure.

SECTION 12: ECOLOGICAL INFORMATION

12.1 Toxicity

Calcium Nitrate:

Toxicity to Fish: LC50/96h 2400 mg/L (*Lepomis macrochirus*)

Potassium Nitrate:

Toxicity to Crustaceans: (24h) 490 mg/L (*Daphnia magna*)

12.2 Persistence and Degradability

Not applicable, since inorganic substance.

12.3 Bioaccumulative potential

The potential for bioaccumulation considered to be minimal.

12.4 Mobility in soil

Soil / Water Partition Coefficient (Koc): N / A

Mobility: Soluble in water.

12.5 Results of PBT and vPvB assessment

N / A

12.6 Other adverse effects

Substances which have an unfavorable influence on the oxygen balance and can be measured using parameters such as BOD, COD, etc.: Absent

SECTION 13: DISPOSAL CONSIDERTATIONS

13.1 Waste treatment methods

Product: Waste must be disposed of in accordance with federal, state, provincial and local environmental control regulations.

Packing: Empty containers should be taken for local recycling, recovery or waste disposal.

SECTION 14: TRANSPORT INFORMATION

Canadian TDG: Not Regulated.

US DOT: Not Regulated.

Transport in Bulk According to Annex II of MARPOL 73/78 and the IBC Code.

N / A

SECTION 15: REGULATORY INFORMATION

TSCA Inventory: Not listed.

Australia AICS: On or in compliance with the inventory.

Canada DSL Inventory List: On or in compliance with the inventory.

EINECS, ELINCS or NLP: On or in compliance with the inventory.

Japan (ENCS) List: On or in compliance with the inventory.

China Inv. Existing Chemical Substances: Not in compliance with the inventory.

Korea Existing Chemicals Inv. (KECI): On or in compliance with the inventory.

Canada NDSL Inventory: Not in compliance with the inventory.

Philippines PICCS: On or in compliance with the inventory.

US TSCA Inventory: On or in compliance with the inventory.

New Zealand Inventory of Chemicals: On or in compliance with the inventory.

Japan ISHL Listing: On or in compliance with the inventory.

SECTION 16: OTHER INFORMATION

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