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Material Safety Data Sheet

Basic green 4

Section 1: Chemical Product and Company Identification

Product name: Basic green 4

Molecular formula: C₅₂H₅₄N₄O₁₂

CAS No.: 2437-29-8

Synonyms: Basic green 4, Malachite green oxalate

Chemical Name: Basic green 4

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Section 2: Composition and Information on Ingredients

Composition:

Name	CAS #	% by Weight
Basic green 4	2437-29-8	100

Toxicological Data on Ingredients: Basic green 4: ORAL (LD50): Acute: 6900 mg/kg [Rat]. 14000 mg/kg [Mouse]. 5200

mg/kg [Rabbit]. DERMAL (LD50): Acute: 12000 mg/kg [Rabbit].

Section 3: Hazards Identification

Potential Acute Health Effects: Hazardous in case of eye contact (irritant), of ingestion, of inhalation.

Potential Chronic Health Effects:

Hazardous in case of eye contact (irritant), of ingestion, of inhalation. CARCINOGENIC EFFECTS: Not available.

MUTAGENIC EFFECTS: Not available. TERATOGENIC EFFECTS: Not available. DEVELOPMENTAL TOXICITY:

Not available. The substance is toxic to the nervous system. Repeated or prolonged exposure to the substance can produce targetorgans damage.

Section 4: First Aid Measures

Eye Contact:

Check for and remove any contact lenses. In case of contact, immediately flush eyes with plenty of water for at least 15 minutes. Cold water may be used. WARM water MUST be used. Get medical attention if irritation occurs.

Skin Contact: Wash with soap and water. Cover the irritated skin with an emollient. Get medical attention if irritation develops.

Serious Skin Contact: Not available.

Inhalation:

If inhaled, remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical attention.

Serious Inhalation: Not available.

Ingestion:

Do NOT induce vomiting unless directed to do so by medical personnel. Never give anything by mouth to an unconscious person. Loosen tight clothing such as a collar, tie, belt or waistband. Get medical attention if symptoms appear.

Serious Ingestion: Not available.

Section 5: Fire and Explosion Data

Flammability of the Product: May be combustible at high temperature.

Auto-Ignition Temperature: 490°C (914°F)

Flammable Limits: LOWER: 0.9% UPPER: 8.03%

Products of Combustion: These products are carbon oxides (CO, CO₂).

Fire Hazards in Presence of Various Substances: Not available.

Explosion Hazards in Presence of Various Substances:

Risks of explosion of the product in presence of mechanical impact: Not available. Risks of explosion of the product in presence of static discharge: Not available.

Fire Fighting Media and Instructions:

SMALL FIRE: Use DRY chemical powder. LARGE FIRE: Use water spray, fog or foam. Do not use water jet.

Special Remarks on Fire Hazards: Not available.

Special Remarks on Explosion Hazards: Not available.

Section 6: Accidental Release Measures

Small Spill: Absorb with an inert material and put the spilled material in an appropriate waste disposal.

Large Spill:

Absorb with an inert material and put the spilled material in an appropriate waste disposal. Finish cleaning by spreading water on the contaminated surface and allow to evacuate through the sanitary system. Be careful that the product is not present at a concentration level above TLV. Check TLV on the MSDS and with local authorities.

Section 7: Handling and Storage

Precautions:

Keep away from heat. Keep away from sources of ignition. Empty containers pose a fire risk, evaporate the residue under a fume hood. Ground all equipment containing material. Do not ingest. Do not breathe gas/fumes/vapour/spray. Avoid contact with eyes. Wear suitable protective clothing. In case of insufficient ventilation, wear suitable respiratory equipment. If ingested, seek medical advice immediately and show the container or the label.

Storage:

Keep container dry. Keep in a cool place. Ground all equipment containing material. Keep container tightly closed. Keep in a cool, well-ventilated place. Combustible materials should be stored away from extreme heat and away from strong oxidizing agents.

Section 8: Exposure Controls/Personal Protection**Engineering Controls:**

Provide exhaust ventilation or other engineering controls to keep the airborne concentrations of vapors below their respective threshold limit value. Ensure that eyewash stations and safety showers are proximal to the work-station location.

Personal Protection: Splash goggles. Lab coat. Vapor respirator. Be sure to use an approved/certified respirator or equivalent.

Personal Protection in Case of a Large Spill:

Splash goggles. Full suit. Vapor respirator. Boots. Gloves. A self-contained breathing apparatus should be used to avoid inhalation of the product. Suggested protective clothing might not be sufficient; consult a specialist BEFORE handling this product.

Exposure Limits:

TWA: 5 CEIL: 10 (mg/m³) from ACGIH. Consult local authorities for acceptable exposure limits.

Section 9: Physical and Chemical Properties

Physical state and appearance: Green crystals

Taste: Not available.

Color: Green crystals

pH (1% soln/water): Not available.

Critical Temperature: Not available.

Specific Gravity: 1.194 (Water = 1)

Vapor Pressure: 0.002 mm of Hg (@ 20°C)

Vapor Density: 6.7 (Air = 1)

Volatility: 100% (v/v).

Odor Threshold: Not available.

Water/Oil Dist. Coeff.: The product is equally soluble in oil and water; log(oil/water) = 0

Ionicity (in Water): Not available.

Dispersion Properties: See solubility in water, methanol, diethyl ether.

Solubility:

Soluble in methanol, diethyl ether. Very slightly soluble in cold water..

Section 10: Stability and Reactivity Data

Stability: The product is stable.

Instability Temperature: Not available.

Conditions of Instability: Heat, ignition sources, incompatible materials.

Incompatibility with various substances: Reactive with oxidizing agents, acids.

Corrosivity: Non-corrosive in presence of glass.

Special Remarks on Reactivity:

May attack some forms of plastic. Incompatible with permanganates, nitric acid.

Special Remarks on Corrosivity: Not available.

Polymerization: Will not occur.

Section 11: Toxicological Information

Routes of Entry: Absorbed through skin. Eye contact.

Toxicity to Animals: Acute oral toxicity (LD50): 1000 mg/kg [Rabbit].

Chronic Effects on Humans:

CARCINOGENIC EFFECTS: A4 (Not classifiable for human or animal.) by ACGIH. MUTAGENIC EFFECTS: Mutagenic for bacteria and/or yeast. May cause damage to the following organs: liver, central nervous system (CNS).

Other Toxic Effects on Humans: Slightly hazardous in case of skin contact (irritant, permeator), of ingestion, of inhalation.

Special Remarks on Toxicity to Animals: Not available.

Special Remarks on Chronic Effects on Humans:

Passes through the placental barrier in animal. May cause adverse reproductive effects and birth defects (teratogenic) based on animal test data. May affect genetic material (mutagenic). May cause cancer based on animal test data. No human data found.

Special Remarks on other Toxic Effects on Humans:

Acute Potential Health Effects: Skin: May cause skin irritation. May be absorbed through the skin. Eyes: May cause eye irritation. May cause lacrimation. Inhalation: Breathing in mist or vapor may cause respiratory tract (nose, throat) irritation. Symptoms may include coughing and hoarseness, and dyspnea. Contact with mist or vapor may cause lacrimation. Inhalation of high concentrations may affect behavior/central nervous system/nervous system (central nervous system depression, headache, dizziness, polyneuropathy, and pain, numbness, weakness, muscle spasms in the arms and legs) Ingestion: Ingestion of large doses may cause gastrointestinal tract irritation. May affect behavior/central nervous system (somnia, withdrawal and other symptoms similar to that of inhalation), metabolism (weight loss). Chronic Potential Health

Effects: Ingestion: Prolonged or repeated ingestion may affect the liver, metabolism (weight loss), blood (changes in serum composition), urinary system (bladder), behavior (see acute ingestion). May cause pupillary constriction.

Section 12: Ecological Information

Ecotoxicity: Not available.

BOD5 and COD: Not available.

Products of Biodegradation:

Possibly hazardous short term degradation products are not likely. However, long term degradation products may arise.

Toxicity of the Products of Biodegradation: The products of degradation are more toxic.

Special Remarks on the Products of Biodegradation: Not available.

Section 13: Disposal Considerations

Waste Disposal:

Section 14: Transport Information

DOT Classification: Class 6.1 UN 2811

Identification: Not applicable.

Special Provisions for Transport: Reportable Quantity: 1000 lbs./453.6 kg

Section 15: Other Regulatory Information

Other Regulations:

OSHA: Hazardous by definition of Hazard Communication Standard (29 CFR 1910.1200). EINECS: This product is on the European Inventory of Existing Commercial Chemical Substances.

Other Classifications:

WHMIS (Canada): Not controlled under WHMIS (Canada).

DSCL (EEC):

This product is not classified according to the EU regulations. Not applicable.

HMIS (U.S.A.):

Health Hazard: 1

Fire Hazard: 1

Reactivity: 0

Personal Protection: a

National Fire Protection Association (U.S.A.):

Health: 1

Flammability: 1

Reactivity: 0

Specific hazard:

Protective Equipment:

Not applicable. Lab coat. Not applicable. Safety glasses.

Section 16: Other Information

References:

-Manufacturer's Material Safety Data Sheet. -Hazardous Substance Data Bank (HSDB) Registry of Toxic Effects of Chemical Substances (RTECS) -Hazardtext -National Fire Protection Association (NFPA), Fired Protection Guide to Hazardous Materials, 13th ed. p. 6

Other Special Considerations: Not available.

Created: 4/26/2016/2011 14:00 PM

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