



Material Safety Data Sheet **Marigold Extract**

1. Product and Company Identification

Product name: Marigold Extract

Use - for tablets and capsules

- for fortification of foods and beverages

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Company information

2. Hazards identification

Emergency Overview

Form free-flowing particles

Color reddish

Odor none to faint

Hazard Overview - Possible dust explosion hazard based on information on related materials

- Spontaneous ignition may occur when exposed to air

Potential Health Effects - Exposure: Inhalation, Ingestion, Skin contact, Eye contact

- Target Organs: respiratory tract, gastrointestinal system

- Acute Effects: May cause eye irritation., May cause skin irritation.,

May cause gastrointestinal effects., Signs and symptoms may include nausea, vomiting, diarrhea, constipation, cramps, and loss of appetite., May cause respiratory effects., Signs and symptoms may include difficulty in breathing, coughing, wheezing, irritation (inflammation) and respiratory arrest.

- Chronic Effects: No adverse effects known

- Carcinogenicity: formulation not listed by NTP, IARC or OSHA

Additional Health Information - Exposure to large quantities of this material may cause reversible skin discoloration.

3. Composition/Information on ingredients

Characterization Preparation containing Lutein and auxiliary substances; for tablet and capsule production; for fortification of foods and beverages

Lutein

CAS: 127-40-2 Assay 1-20 %

4. First-aid measures

Eye contact - rinse immediately with tap water for 10 minutes - open eyelids forcibly

Skin contact - brush off

Inhalation - remove the casualty to fresh air and keep him/her calm

- in the event of symptoms get medical treatment

Note to physician - treat symptomatically

5. Fire-fighting measures

Suitable extinguishing media - water spray jet, dry powder, foam, carbon dioxide

Flash point (liquid) not applicable

Specific hazards - consider dust explosion hazard

Protection of fire-fighters - precipitate gases/vapours/mists with water spray

6. Accidental release measures

Environmental protection - do not allow to enter drains or waterways

Methods for cleaning up - collect solids (avoid dust formation) and hand over to waste removal

7. Handling and storage

Handling

Technical measures - processing in closed systems, if possible superposed by inert gas (e.g. nitrogen)

- local exhaust ventilation necessary

- take precautionary measures against electrostatic charging

- avoid dust formation; consider dust explosion hazard

Suitable materials - stainless steel, aluminium, glass, polyethylene, enamel

Storage

Storage conditions - below 15 °C

- protected from light and humidity

- keep container tightly closed

Packaging materials - tightly closing; material: stainless steel, aluminium, glass, polyethylene

8. Exposure controls/Personal protection

Engineering Measures - see 7.

Monitoring

Threshold value (USA) air - ACGIH-TLV: 10 mg/m³ (ACGIH)

Personal protective equipment

Respiratory protection - respiratory protection not necessary during normal operations

- in case of very high dust concentrations: particle mask or respirator with independent air supply

Hand protection - protective gloves (eg made of NR Natural Rubber, NBR Acrylnitril-Butadien-Rubber)

Eye protection - safety glasses

9. Physical and chemical properties

Color reddish

Form free-flowing particles

Odor none to faint

10. Stability and reactivity

Stability - stable under the conditions mentioned in chapter 7

Conditions to avoid - warming

- light

- humidity



Materials to avoid - atmospheric oxygen, oxidizing agents, reducing agents

- oxygen

11. Toxicological information

Acute toxicity - LD₅₀ > 2'000 mg/kg (oral, rat)

Subacute toxicity - NOEL 200 mg/kg/d (oral, rat, 28 days)

Local effects - skin: non-irritant (rabbit)

- eye: non-irritant (rabbit)

Subchronic toxicity - NOEL 200 mg/kg/d (oral, rat; 13 weeks)

Chronic toxicity - NOAEL > 20 mg/kg/d (oral, monkey; 52 weeks)

Mutagenicity - not mutagenic (Ames test)

12. Ecological information

Inherent biodegradability - well inherently biodegradable

>82 %, 24 h

(batch-wise test similar to SCAS with adaptation phase)

Air pollution - observe local/national regulations

13. Disposal considerations

Waste from residues - observe local/national regulations regarding waste disposal

- large amounts: incinerate in qualified installation with flue gas scrubbing

RCRA waste - not regulated under RCRA

14. Transport information

DOT/TDG Remark: - Not regulated for transport under DOT, TDG, IATA, or IMDG.

Note - not classified as hazardous under DOT, IATA, IMDG

15. Regulatory information

US Regulations - Law: hazardous chemical reporting: community right-to know

- Common name: SARA title 312

- Agency: Environmental Protection Agency EPA

- Criteria met: acute

US and CAN hazard

classification

- No components are listed in the WHMIS IDL.

- Components of this product are identified on the Canadian Domestic Substance List or the Non-Domestic Substance List.

- This product is considered hazardous under the criteria specifies in 29 CFR 1910.1200 (Hazard Communication Standard) and a controlled product under the Canadian Controlled Products Act.

TSCA Status - All ingredients are on the TSCA Inventory

- FDA Exemption - not on inventory

Reporting Requirements - The United States Environmental Protection Agency (USEPA) has not established a Reportable Quantity (RQ) for releases of this material.

- In New Jersey, report all releases which are likely to endanger the public health, harm the environment or cause a complaint to the NJDEP Hotline (1-877-WARN-DEP) and to local officials.



- State and local regulations vary and may impose additional reporting requirements.

16. Other information

Canada update - This MSDS has been reviewed on 11/16/2006 for compliance with

Canadian regulation

Edition documentation - changes from previous version in sections 2, 7, 8, 10

Definitions: ACGIH = American Conference of Governmental Industrial Hygienists. CERCLA = Comprehensive Environmental Response, Compensation and Liability Act. CFR = Code of Federal Regulations. DSL = Canadian Domestic Substance List. DOT= Department of Transportation. EINECS = European Inventory of New and Existing Chemical Substances. EPA = Environmental Protection Agency. HEPA = High Efficiency Particulate Air. HMIS = Hazardous Material Identification System. IARC = International Agency for Research on Cancer. IATA= International Air Transport Association. IMDG= International Maritime Dangerous Good. IOEL = Roche/ DSM developed Internal Occupational Exposure Limit. NFPA = National Fire Protection Association. NIOSH = National Institute of Occupational Safety and Health. NJTSR = New Jersey Trade Secret Registry. NTP = National Toxicology Program. OSHA = Occupational Safety and Health Administration. NA = Not available or Not Applicable. SARA = Superfund Amendments and Reauthorization Act. TLV = Threshold Limit Value. TSCA = Toxic Substance Control Act. WHMIS = Workplace Hazardous Materials Information System.

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