

SAFETY DATA SHEET

Natural graphite

Issued: July 27, 2012

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1. IDENTIFICATION

PRODUCT: Graphite (includes all grades of FLAKE GRAPHITE)

Chemical name (IUPAC): Carbon, Graphite

Molecular formula: C

COMPOSITION: Mono-constituent substance

APPLICATION: In refractories, accumulators, pencil leads, steelmaking, lubricants, etc.

PRODUCER: Taiginsky mining and processing plant LLC

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CHEMICAL CHARACTERIZATION

CAS no.: 7782-42-5

EC no.: 231-955-3

2. HAZARDS IDENTIFICATION

CLASSIFICATION OF THE SUBSTANCE OR MIXTURE: The product does not meet the classification and labelling criteria given in the Regulation (EC) No. 1272/2008 (CLP)

LABEL ELEMENTS/SYMBOLS: Not applicable

CAUTION! Dust may irritate the respiratory tract, skin and eyes

3. EMERGENCY OVERVIEW

POTENTIAL HEALTH EFFECTS

Eyes: May cause eye irritation

Skin: May cause skin irritation. May be harmful if absorbed through the skin

Ingestion: May cause gastrointestinal irritation with nausea, vomiting and diarrhea. May be harmful if swallowed

Inhalation: May cause respiratory tract irritation. May be harmful if inhaled

FIRST AID

Eye contact: Rinse eyes with plenty of clean water for at least 15 minutes. If irritation or redness develops, seek medical attention

Skin contact: No first aid is normally required; wash affected areas with clean water and soap

Inhalation: Move injured person into fresh air and keep person calm under observation. For breathing difficulties, oxygen may be necessary. If breathing difficulties develop, artificial respiration or oxygen mask should be applied by qualified personnel, seek medical attention

Ingestion: May cause irritation, seek medical attention

Most important symptoms and effects (acute and delayed): Dust may irritate the respiratory tract, skin and eyes

4. FIREFIGHTING MEASURES

GENERAL INFORMATION: Combustible, Not flammable, Not explosive

SUITABLE EXTINGUISHER: Foam; Carbon dioxide; Sand; Extinguishing powder; Water spray jet

UNSUITABLE EXTINGUISHING MEANS: High power water jet

SPECIAL HAZARDS ARISING FROM THE SUBSTANCE OR MIXTURE: In the event of fire, the following substances can be released: Carbon monoxide (CO); Carbon dioxide (CO₂)

ADVICE FOR FIREFIGHTERS

Special protective equipment for firefighters: Self-contained breathing apparatus and full protective clothing must be worn in case of fire.

Use standard firefighting procedures and consider the hazards of other involved materials

5. ACCIDENTAL RELEASE MEASURES

PERSONAL PRECAUTIONS, PROTECTIVE EQUIPMENT AND EMERGENCY PROCEDURES

For non-emergency personnel: Refer to protective measures listed in sections 6 and 7. Avoid contact with skin, eyes and clothing. Ensure adequate ventilation. Avoid dust formation. High risk of slipping due to leakage/spillage of product

For emergency responders: Personal protective equipment - see Section 7

ENVIRONMENT'S PROTECTION: Do not discharge into the drains/surface waters/groundwater

METHODS OF CLEANING: Vacuum or sweep up material and place into a suitable disposal container. Clean up spills immediately, observing precautions in the Protective Equipment section. Avoid generating dusty conditions. Provide ventilation

WASTE DISPOSAL METHOD: in accordance with local, state and federal waste disposal regulations

6. STORAGE AND HANDLING

The substance must be disposed in accordance with local/regional/national/international regulation.

HANDLING: Avoid breathing dust. Use ventilation or other engineering controls in order to minimize potential exposure and to maintain air levels below the recommended exposure limit. Avoid contact with eyes. Wash thoroughly after handling. Do not eat or drink while handling the product

STORAGE: Store in a dry place away from direct sunlight, heat and incompatible materials (oxidizing agents, fluorine, halogenated solvents, potassium and potassium oxide); all regular kinds of closed packing can be used. Keep away from sources of heat and ignition

STORAGE CLASS: Not classified

7. EXPOSURE CONTROLS AND PERSONAL PROTECTION

INGREDIENTS WITH OCCUPATIONAL EXPOSURE LIMITS: Graphite dust, AGW, 10 mg/m³ (inhalable) and 3 mg/m³ (alveolic)

DNEL values (worker): inhalable, long-term exposure (chronic) – 1.2 mg/m³

DNEL values (consumer): inhalable, long-term exposure (chronic) – 0.3 mg/m³

DNEL values (consumer): oral, long-term exposure (chronic) – 813 mg/kg bw/day

Other information: The DNEL value (inhalation) is applicable for respirable fractions of graphite dust that can reach the alveolar regions of lungs

Limitation of pollution: Concentration of dust during work should be controlled according to the regional regulations

Technical measures: Suitable ventilation or vacuum pumps should be installed

PERSONAL PROTECTIVE EQUIPMENT

Respiratory protection: when exceeding MAC-values use dust-mask with filter P1

Hand protection: not necessary; workers with dry skin can use a grease paste

Skin protection: PVC gloves with impervious boots, apron or coveralls. Employees should wash their hands and face before eating, drinking or using tobacco products

Eye protection: use safety glasses or goggles, if dust occurs

8. PHYSICAL AND CHEMICAL DATA

Form: flakes, powder material

Colour: silvery grey to black

Odour: odourless

Ignition point in oxygen stream: 700-730 °C

Boiling point: no data available

Melting point: 3845-3890 °C

Viscosity: not applicable

pH value: 6.0 -10.0

9. STABILITY AND REACTIVITY

Stability: Stable under regular conditions of use and storage (at temperature from -200 to +400 °C)

Incompatibilities: Fluorine; Chlorine trifluoride

Decomposition: Decomposition only in the reaction with acids

10. TOXICOLOGICAL INFORMATION

No acute toxic or cancerous growing effects are known, the product is not listed by ACGIH, MIOSH, NTP, IARC or regulated as carcinogen by OSHA.

11. INFORMATION ON ECOLOGICAL EFFECTS

Natural graphite is chemically inert and does not contaminate environment

Other information: Do not discharge product unmonitored into the environment

12. DISPOSAL INFORMATION

Product and packaging must be disposed in accordance with local/regional/national/international regulation

13. TRANSPORT

Product is not a dangerous freight by land, air or sea.

Transport ADR/RID/ADN: The product is not subject to ADR/RID/ADN regulations

Transport IMDG: The product is not subject to IMDG regulations

Transport ICAO-TI / IATA: The product is not subject to ICAO-TI / IATA regulations

Packaging marking: "Keep dry" symbol

14. OTHER INFORMATION

Information in the data sheet is based on our present state of knowledge and experience. MSDS describes products with a view to the security requirements. However, it should not constitute a guarantee for any

specific product properties and shall not establish a legally valid relationship.

Information should not be considered as a specification or any other binding data. Compliance with all applicable federal, state and local laws and regulations is the responsibility of the user.

INFORMATION SOURCES

- REACH Test Methods Regulation (EC) No. 440/2008
- Regulation (EC) No 1272/2008 of the European Parliament and of the Council of 16 December 2008 on classification, labelling and packaging of substances and mixtures, amending and repealing Directives 67/548/EEC and 1999/45/EC, and amending Regulation (EC) No 1907/2006
- The European Chemicals Agency (ECHA) <https://echa.europa.eu/>
- National Russian GOST standards and technical requirements for natural graphite production, handling and packing