

SAFETY DATA SHEET – Negative Expander

Industrial Grade

1. IDENTIFICATION

REVISION DATE: 2/20/2020

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| Product Name: "Negative Expander Industrial Grade" | Product Use: Electric Storage Battery Manufacturer/Supplier: C&D Technologies, Inc. Address: C&D Technologies, Inc. 1400 Union Meeting Road Blue Bell, PA 19422-0858 Web Sites: www.cdtechno.com North America 24 Hour Emergency Telephone: (CHEM TEL) 1-800-255-3924 International 24 Hour Emergency Telephone: (CHEM TEL) 1-813-248-0585 C&D Technologies Inc. Telephone: 215-619-2700 |
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2. GHS HAZARDS IDENTIFICATION

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| <p>Health</p> <p>Inhalation: inhalation of dust concentrations above the occupational 8 hour TWA may cause upper respiratory tract irritation and discomfort. Barium Sulfate is insoluble in water and is deliberately used as a contrast medium in bronchography. As a result, it is inert in the human lung and not anticipated to create a toxic response. Inhalation of carbon black may cause sneezing, coughing, chest pain, and headache.</p> <p>Eye contact: no significant irritation expected other than possible mechanical irritation.</p> <p>Skin contact: prolonged exposure is unlikely to cause significant skin irritation. Carbon black may cause irritation, follicular blackheads and kurtosis.</p> <p>Ingestion: not an expected route of exposure.</p> <p>Symptoms: Inhalation of carbon black may cause sneezing, coughing, chest pain, and headache. Prolonged and repeated inhalation of barium sulfate may cause the benign pneumoconiosis called baritosis.</p> |
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GHS Label:

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|------------------------|
| Health |
| No Pictograms Required |

3. COMPOSITION / INFORMATION ON INGREDIENTS

| INGREDIENTS (Chemical/Common Names): | CAS No.: | % by Wt: |
|--------------------------------------|-----------|----------|
| Barium Sulfate | 7727-43-7 | 40-90 |
| Carbon Black | 1333-86-4 | 5-40 |
| Sodium Lignosulfonate | 8061-51-6 | 5-35 |

4. FIRST AID MEASURES

INHALATION:

Remove to fresh air. If breathing has stopped, give artificial respiration. Get medical attention immediately. If conscious, have victim clear nasal passages.

INGESTION:

Seek immediate medical attention. Rinse mouth. Drink plenty of water. Induce vomiting, but only if victim is fully conscious.

SKIN:

Wash off immediately with soap and plenty of water. If symptoms persist, call a physician.

EYES:

In case of eye contact, immediately flush with fresh water for at least 15 minutes while holding the eyelids open. Remove contact lenses if worn. Get medical attention if irritation persists.

5. FIRE FIGHTING MEASURES

Suitable Extinguishing Media:

Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.

Specific Hazards arising from the Chemical:

Carbon black and lignin are considered combustible materials. At sufficient concentrations, dusts containing these materials may form explosive mixtures with air if in the presence of a significant energy source. Avoid dust formation and control ignition sources. Employ grounding, venting and explosion relief provisions in

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accordance with acceptable engineering practices in process operations capable of generating dust and/or static electricity.

Explosion Data:

Sensitivity to mechanical impact: none known.

Sensitivity to static discharge: none known.

6: ACCIDENTAL RELEASE MEASURES

Personal Precautions:

Ensure adequate ventilation, especially in confined areas.

Environmental Precautions:

See Section 12 for additional ecological information.

Methods for containment: prevent further leakage or spillage if safe to do so.

Methods for cleanup: pick up and transfer to properly labeled containers.

7. HANDLING AND STORAGE

Handling:

Use personal protective equipment as recommended in Section 8. Avoid generation of dust.

Storage:

Keep containers tightly closed in a dry, cool and well-ventilated area.

Incompatible Conditions:

Avoid strong acids, bases and oxidizing agents.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

Exposure Limits (mg/m³) Note: N.E. = Not Established

| INGREDIENTS (Chemical/Common Names): | OSHA PEL | ACGIH | US NIOSH |
|---|---|---|---|
| Barium Sulfate | TWA: 15 mg/m ³ total dust; 5 mg/m ³ respirable fraction | TWA: 5 mg/m ³ inhalable fraction | TWA: 10 mg/m ³ total dust; 5 mg/m ³ respirable dust |
| Carbon Black | TWA: 3.5 mg/m ³ | TWA: 3 mg/m ³ | TWA: 3.5 mg/m ³ |
| Sodium Lignosulfonate | N/A | N/A | N/A |

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Engineering Controls:

Use contained process enclosures, local exhaust ventilation or other engineering controls to maintain aerosols or dusts below the exposure limits.

Respiratory Protection (NIOSH/MSHA approved):

None required under normal conditions. When concentrations of barium sulfate or carbon black are known to exceed PEL, use NIOSH or MSHA-approved respiratory protection and follow all local regulations.

Skin and Body Protection:

Protective clothing is required if exposure exceeds the PEL or TLV or where possibility of skin or eye irritation exists. Full body cotton or disposable coveralls and disposable gloves should be worn during use and handling. Clothing should be left at work site and be properly disposed of or laundered at site.

Eye Protection:

Use safety glasses with side shields or chemical goggles.

General Hygiene Considerations:

Handle in accordance with good industrial hygiene and safety practice.

9. PHYSICAL AND CHEMICAL PROPERTIES

| | | | |
|----------------------|---------|--|-----------------|
| Boiling Point: | N/A | Specific Gravity (H ₂ O = 1): | Not Established |
| Melting Point: | N/A | Vapor Pressure (mm Hg): | Not Established |
| Solubility in Water: | 5 – 35% | Vapor Density (AIR = 1): | Unknown |
| Evaporation Rate: | N/A | % Volatile by Volume: | Unknown |
| Flash Point | N/A | Physical State | Powder |
| Color | Black | | |

10. STABILITY AND REACTIVITY

Reactivity:

No data available.

Chemical Stability:

Stable under normal conditions.

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Conditions to Avoid:

Avoid excessive exposure to heat or flames.

Incompatibilities: (materials to avoid)

Strong acids, bases, and oxidizing agents.

Hazardous Decomposition Products:

Oxides of carbon, sulfur, barium and sodium.

Hazardous Polymerization:

Will not occur.

11. TOXICOLOGICAL INFORMATION

Inhalation: inhalation of dust concentrations above the occupational 8 hour TWA may cause upper respiratory tract irritation and discomfort.

Barium Sulfate is insoluble in water and is deliberately used as a contrast medium in bronchography. As a result, it is inert in the human lung and not anticipated to create a toxic response.

Inhalation of carbon black may cause sneezing, coughing, chest pain, and headache.

Eye contact: no significant irritation expected other than possible mechanical irritation.

Skin contact: prolonged exposure is unlikely to cause significant skin irritation. Carbon black may cause irritation, follicular blackheads and kurtosis.

Ingestion: not an expected route of exposure.

Oral LD50:

Barium Sulfate: > 300 g/kg (Rat).

Carbon Black: > 15,400 mg/kg (Rat); > 3 g/kg (Rabbit).

Sodium Lignosulfonate: > 40 g/kg (Rat).

Symptoms:

Inhalation of carbon black may cause sneezing, coughing, chest pain, and headache. Prolonged and repeated inhalation of of barium sulfate may cause the benign pneumoconiosis called baritosis.

Effects of Long Term Exposure - Chronic:

Sensitization: Not available.

Germ cell mutagenicity: Not available.

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Carcinogenicity:

Carbon Black carcinogenicity assessment: tumor development in rats caused by lung overload, no epidemiological evidence for lung tumors in humans. Carbon Black is listed by International Agency for Research on Cancer (IARC). ACGIH listed carbon black as A3 ‘confirmed animal carcinogen with unknown relevance to humans.’ Does not contain any substances listed by National Toxicological Program (NTP), OSHA, or European Union. Applying the rules of the Globally Harmonized System of Classification and Labeling under GHS, these results do not lead to classification of carbon black as a carcinogen.

Carbon Black ACGIH Classification: Group A3; IARC Classification: Group 2B

Reproductive Toxicity: not available.

STOT – single exposure: not classified.

STOT – repeated exposure: these effects are the result under overload conditions and the effect on rats is specific to species.

Chronic Toxicity Carbon Black:

Rat, oral, duration: 2 years; effect: no tumors.

Mouse, oral, duration: 2 years; effect: no tumors.

Mouse, dermal, duration: 18 months; effect: no skin tumors.

12. ECOLOGICAL INFORMATION

Ecotoxicity: 100% of the mixture consists of components of unknown hazards to the aquatic environment.
Sodium Lignosulfonate: 7300: 48 h oncorhynchus mykiss mg/l LC50.

Persistence and degradability: not expected to biodegrade.

Bioaccumulation: does not bioaccumulate.

Mobility: because this is in powder form, mobility is limited to the spill unless agitated.

13. DISPOSAL CONSIDERATIONS (UNITED STATES)

Disposal of wastes: re-blend spilled, unused, off-specification materials with other materials where possible in support of waste minimization. Dispose of in accordance with all applicable regional, national, and local laws and regulations. This product may be shipped in paper or nylon bags, steel drums, plastic or steel pails, or intermediate bulk containers. All residual material should be emptied and the containers recycled where possible.

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14. TRANSPORT INFORMATION

DOT: not regulated.

15. REGULATORY INFORMATION

TSCA (U.S. Toxic Substances Control Act): complies.

DSL/NDSL (Canadian Domestic Substance/Non-Domestic Substance List): complies.

ENSC (Japan Existing and New Chemical Substances): complies

IECSC (China Inventory of Existing Chemical Substances): complies.

KECL (Korean Existing and Evaluated Chemical Substances): complies.

PICCS (Philippines Inventory of Chemicals and Chemical Substances): complies.

AICS (Australian Inventory of Chemical Substances): complies.

EINECS/ELINCS (European Inventory of Existing Chemical Substances): does not comply.

SARA 313: This product contains chemicals that are subject to reporting under Section 313 of Title III Superfund Amendments and Reauthorization Act of 1986 (SARA) – Barium Sulfate SARA 313 Threshold Value is 1.0%.

SARA 311/312: these reporting classifications are not applicable to this product.

CLEAN WATER ACT: this product does not contain any substances regulated as pollutants pursuant to the Clean Water Act.

CERCLA: this product does not contain any substances regulated under CERCLA.

CALIFORNIA PROPOSITION 65: carbon black (airborne particles of a respirable size – under 10 microns in diameter) is a California listed substance.

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16. OTHER INFORMATION

Flammability (Red) = 1

Health (Blue) = 1

Reactivity (Yellow) = 0

MSDS Preparation/Review Date: 2/20/2020

Prepared by: W.E. Kozlowski – Director Environment, Health & Safety

Revision: 3