

Safety Data Sheet

Material Name: ELECTRODES (GRAPHITE & CARBON) FOR
ELECTRIC ARC FURNACES

SDS ID: 00232896

*** Section 4 - FIRST AID MEASURES ***

Inhalation

If adverse effects occur, remove to uncontaminated area. Give artificial respiration if not breathing. Get immediate medical attention.

Skin

Wash skin with soap and water for at least 15 minutes while removing contaminated clothing and shoes. Get medical attention, if needed. Thoroughly clean and dry contaminated clothing and shoes before reuse.

Eyes

Flush eyes with plenty of water for at least 15 minutes. Then get immediate medical attention.

Ingestion

If a large amount is swallowed, get medical attention.

*** Section 5 - FIRE FIGHTING MEASURES ***

See Section 9 for Flammability Properties

NFPA Ratings: Health: 1 Fire: 0 Reactivity: 0

Hazard Scale: 0 = Minimal 1 = Slight 2 = Moderate 3 = Serious 4 = Severe

Flammable Properties

Negligible fire hazard.

Extinguishing Media

dolomite, dry powder for metal fires, dry sand, graphite, soda ash, sodium chloride

Fire Fighting Measures

Move container from fire area if it can be done without risk. Cool containers with water spray until well after the fire is out. Stay away from the ends of tanks. For fires in cargo or storage area: Cool containers with water from unmanned hose holder or monitor nozzles until well after fire is out. If this is impossible then take the following precautions: Keep unnecessary people away, isolate hazard area and deny entry. Let the fire burn. Use extinguishing agents appropriate for surrounding fire. Avoid inhalation of material or combustion by-products.

*** Section 6 - ACCIDENTAL RELEASE MEASURES ***

Occupational spill/release

Collect spilled material in appropriate container for disposal.

*** Section 7 - HANDLING AND STORAGE ***

Storage Procedures

Store and handle in accordance with all current regulations and standards. Avoid contact with water or moisture. Protect from physical damage. Store in a clean, dry place. See original container for storage recommendations. Keep separated from incompatible substances.

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*** Section 8 - EXPOSURE CONTROLS / PERSONAL PROTECTION ***

Component Exposure Limits

CARBON (7440-44-0)

OSHA (US): 15 mg/m3 TWA (total dust); 5 mg/m3 TWA (respirable fraction)

Mexico: 2 mg/m3 TWA (dust)

GRAPHITE, SYNTHETIC (7782-42-5)

ACGIH: 2 mg/m3 TWA (all forms except graphite fibers, respirable fraction)

NIOSH: 2.5 mg/m3 TWA (respirable dust)

1250 mg/m3 IDLH

OSHA (US): 15 mppcf TWA

Mexico: 2 mg/m3 TWA

Ventilation

Provide local exhaust ventilation system. Ensure compliance with applicable exposure limits.

PERSONAL PROTECTIVE EQUIPMENT

Eyes/Face

Eye protection not required under normal conditions.

Protective Clothing

Wear appropriate chemical resistant clothing.

Glove Recommendations

Wear appropriate chemical resistant gloves.

Respiratory Protection

No respirator is required under normal conditions of use.

*** Section 9 - PHYSICAL AND CHEMICAL PROPERTIES ***

Physical State: Solid	Appearance: Not available
Color: black	Physical Form: article containing solids
Odor: odorless	Odor Threshold: Not available
Melting Point: Not available	Boiling Point: Not applicable
Flash Point: not flammable	Vapor Pressure: Not applicable
Vapor Density (air = 1): Not applicable	Bulk Density: 1.58 - 1.63 g/cm3
Density: Not available	Specific Gravity (water = 1): Not available
Water Solubility: insoluble	Coeff. Water/Oil Dist: Not available

*** Section 10 - STABILITY AND REACTIVITY ***

Chemical Stability

Stable at normal temperatures and pressure.

Conditions to Avoid

None reported.

Materials to Avoid

None known.

Decomposition Products

oxides of carbon

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Possibility of Hazardous Reactions

Will not polymerize.

* * * Section 11 - TOXICOLOGICAL INFORMATION * * *

Component Analysis - LD50/LC50

The components of this material have been reviewed in various sources and the following selected endpoints are published:

CARBON (7440-44-0)

Oral LD50 Rat: >10000 mg/kg

RTECS Acute Toxicity (selected)

The components of this material have been reviewed and RTECS publishes no data as of the date on this document.

Component Carcinogenicity

None of this product's components are listed by ACGIH, IARC, NTP, DFG or OSHA.

RTECS Irritation

The components of this material have been reviewed and RTECS publishes no data as of the date on this document.

Medical Conditions Aggravated by Exposure

respiratory disorders, skin disorders

RTECS Reproductive Effects

The components of this material have been reviewed, and RTECS publishes the following endpoints:

CARBON (7440-44-0)

167 mg/kg subcutaneous rat TDLo (pregnant female 8 day(s), continuous)

HEALTH EFFECTS

Inhalation - Acute Exposure

CARBON: Inhalation of dust may cause slight mucous membrane irritation. GRAPHITE, SYNTHETIC: Rats exposed to 500 mg/m³ experienced transient inflammation and alveolar macrophage activation for about 24-48 hours following exposure. Excessive concentrations of nuisance dusts in the workroom may cause unpleasant deposits in the nasal passages.

Inhalation - Chronic Exposure

CARBON: Repeated or prolonged exposure may cause irritation and pulmonary disorders. Lung damage may result if sufficient exposure occurs. GRAPHITE, SYNTHETIC: Some evidence suggests that simple and complicated pneumoconiosis similar to that seen in coal workers may occur with repeated exposure. A worker exposed to synthetic graphite dust for 17 years, developed simple pneumoconiosis with cough, dyspnea, reduced pulmonary function, and X-ray changes. At autopsy, there was emphysema with scattered fine black nodules with some strands of fibrous tissue and ventricle hypertrophy.

Skin Contact - Acute Exposure

CARBON: Contact may cause irritation. GRAPHITE, SYNTHETIC: Allergic dermatitis has been reported. Excessive concentration of nuisance dusts in the workroom may cause unpleasant deposits on the skin and in the ears. Injury to the skin may occur by chemical or mechanical action or by the vigorous skin cleansing procedures necessary for their removal.

Skin Contact - Chronic Exposure

CARBON: Repeated or prolonged contact may cause mechanical irritation. GRAPHITE, SYNTHETIC: No data available.

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Eye Contact - Acute Exposure

CARBON: Contact with dust may cause mechanical irritation. May also cause conjunctivitis. GRAPHITE, SYNTHETIC: Graphite is chemically inert but acts as a superficial foreign body and may cause slight mechanical irritation and discoloration of lids and conjunctivae.

Eye Contact - Chronic Exposure

CARBON: Repeated or prolonged exposure may cause mechanical irritation. GRAPHITE, SYNTHETIC: No data available.

Ingestion - Acute Exposure

CARBON: Extremely large doses may produce gastrointestinal disturbances. GRAPHITE, SYNTHETIC: No data available.

Ingestion - Chronic Exposure

CARBON: No data available. GRAPHITE, SYNTHETIC: No data available.

*** Section 12 - ECOLOGICAL INFORMATION ***
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Component Analysis - Aquatic Toxicity

No LOLI ecotoxicity data are available for this product's components.

*** Section 13 - DISPOSAL CONSIDERATIONS ***

Disposal Methods

Dispose in accordance with all applicable regulations.

Component Waste Numbers

The U.S. EPA has not published waste numbers for this product's components.

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*** Section 14 - TRANSPORT INFORMATION ***

US DOT Information

No Classification assigned.

TDG Information

No Classification assigned.

ADR Information

No Classification assigned.

ADR Tunnel Code Restrictions

This list contains tunnel restriction codes for those substances and/or chemically related entries which are found in chapter 3.2 of the ADR regulations.

CARBON (7440-44-0)

RID Information

No Classification assigned.

IATA Information

No Classification assigned.

ICAO Information

No Classification assigned.

IMDG Information

No Classification assigned.

*** Section 15 - REGULATORY INFORMATION ***

U.S. Federal Regulations

None of this products components are listed under SARA Section 302 (40 CFR 355 Appendix A), SARA Section 311/312 (40 CFR 370.21), SARA Section 313 (40 CFR 372.65), CERCLA (40 CFR 302.4), TSCA 12(b), or require an OSHA process safety plan.

SARA Section 311/312 (40 CFR 370 Subparts B and C)

Acute Health: No Chronic Health: No Fire: No Pressure: No Reactive: No

U.S. State Regulations

The following components appear on one or more of the following state hazardous substances lists:

Component	CAS	CA	MA	MN	NJ	PA	RI
CARBON (related to: Graphite, synthetic)	7440-44-0	No	Yes ¹	No	No	Yes ¹	Yes
GRAPHITE, SYNTHETIC	7782-42-5	Yes	Yes	Yes	Yes	Yes	Yes

Not regulated under California Proposition 65

Canada

Germany Water Classification

CARBON (7440-44-0)

Number 801, not considered hazardous to water

GRAPHITE, SYNTHETIC (7782-42-5)

Number 801, not considered hazardous to water

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EU Marking and Labelling

This material is not classified

Component Analysis - Inventory

Component	CAS	US	CA	EU	AU	PH	JP	KR	CN	NZ
CARBON	7440-44-0	Yes	DSL	EIN	Yes	Yes	No	Yes	Yes	Yes
GRAPHITE, SYNTHETIC	7782-42-5	Yes	DSL	EIN	Yes	Yes	No	Yes	Yes	Yes

* * * Section 16 - OTHER INFORMATION * * *

Key / Legend

ACGIH - American Conference of Governmental Industrial Hygienists; ADR - European Road Transport; AU - Australia; BOD - Biochemical Oxygen Demand; C - Celsius; CA - Canada; CAS - Chemical Abstracts Service; CERCLA - Comprehensive Environmental Response, Compensation, and Liability Act; CN - China; CPR - Controlled Products Regulations; DFG - Deutsche Forschungsgemeinschaft; DOT - Department of Transportation; DSL - Domestic Substances List; EEC - European Economic Community; EINECS - European Inventory of Existing Commercial Chemical Substances; EPA - Environmental Protection Agency; EU - European Union; F - Fahrenheit; IARC - International Agency for Research on Cancer; IATA - International Air Transport Association; ICAO - International Civil Aviation Organization; IDL - Ingredient Disclosure List; IDLH - Immediately Dangerous to Life and Health; IMDG - International Maritime Dangerous Goods; JP - Japan; Kow - Octanol/water partition coefficient; KR - Korea; LEL - Lower Explosive Limit; LOLI - List Of Lists™ - ChemADVISOR's Regulatory Database; MAK - Maximum Concentration Value in the Workplace; MEL - Maximum Exposure Limits; NFPA - National Fire Protection Agency; NIOSH - National Institute for Occupational Safety and Health; NJTSR - New Jersey Trade Secret Registry; NTP - National Toxicology Program; NZ - New Zealand; OSHA - Occupational Safety and Health Administration; PH - Philippines; RCRA - Resource Conservation and Recovery Act; RID - European Rail Transport; RTECS - Registry of Toxic Effects of Chemical Substances®; SARA - Superfund Amendments and Reauthorization Act; STEL - Short-term Exposure Limit; TDG - Transportation of Dangerous Goods; TSCA - Toxic Substances Control Act; TWA - Time Weighted Average; UEL - Upper Explosive Limit; US - United States

Full text of R phrases in Section 3

R11 Highly flammable.

Other Information

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