



INDUSTRIES 3R

# MATERIAL SAFETY DATA SHEET

## IDENTITY

Part Number: **3R 3003**  
 Identity: Graphite Flake No 3  
 Description: Natural Graphite

## SUPPLIER

Industries 3R inc.  
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## INGREDIENTS AND HAZARDS      #CAS      % Weight

### Hazardous Components

<u>INGREDIENTS AND HAZARDS</u>	#CAS	% Weight
Natural Graphite	7782-42-5	100%

## HMIS

Health	1
Flammability	1
Reactivity	0
Personal Protection	E

## GHS Classification

Health	Environmental	Physical
Acute Toxicity – Not Classified Eye corrosion-Sub-category 2A Skin corrosion-Not Classified Skin Sensitization-Category 3 Mutagenicity-Not Classified Reproductive/ Development – Not Classified Target Organ Toxicity- Not Classified	Natural graphite is an insoluble, inorganic substance and is not expected to present any environmental hazards other than those expected for an insoluble particulate.	Solid material which poses no physical hazard according to GHS classification.

Hazard Statements/ Precautionary Statements: Natural graphite may contain crystalline silica, variety quartz. This substance is not admixed with the graphite, but is a naturally occurring material impurity that is intimately associated with the graphite. In most cases this silica is not in respirable form unless the graphite is very finely divided. IARC Monograph Vol 68, 1997 Concludes That There Is Sufficient Evidence That Inhaled Crystalline Silica Causes Cancer In Humans. IARC Classification: Group 1.

## PHYSICAL/CHEMICAL DATA

Appearance:	Grey to black
Odor:	None
Material State:	Solide, granular or powder
Boiling Point:	n/a
Melting Point:	Sublimates at 3652 deg. C
Specific gravity:	2.26
Vapor pressure (mm Hg):	n/a

Water solubility:	Insoluble
pH:	n/a
Decomposition Temp	Oxidizes above 400 deg. C
Flash Point:	Not available. Solid substance with very high melting point.
Vapor density:	n/a
% Volatile (By Wt.)	0-4%
Evaporation Rate:	n/a
Auto Ignition:	Above 500 deg. C
Dust Explosion Class:	ST1=KST>0-200 bar m/s

### **FIRE AND EXPLOSION DATA**

Suitable extinguishing media:	Dry chemical extinguisher, water, sand, limestone powder
Protective Equipment:	Self contained air pack, gloves, safety goggles.
Special hazards:	At temperatures above 1500 deg. C, graphite reacts with substances containing oxygen, including water and carbon dioxide. In case of intensely hot fire events, use sand to cover and isolate graphite.
NFP Rating:	110
Products of Combustion:	Carbon dioxide, CO <sub>2</sub> , carbon monoxide, CO.

### **REACTIVITY DATA**

Stability:	Stable. Will not polymerize
Conditions to avoid:	Avoid contact with oxidizing agents
Incompatibility (Materials to avoid):	oxidizing agents
Hazardous decomposition or byproducts:	Carbon Dioxide (CO <sub>2</sub> ), Carbon Monoxide (CO)
Flammable Limits (% by Vol.)	LEL and UEL values not available: Minimum Ignition Energy (MIE) greater than 10 joules. When exposed to extremely high energy ignition sources very finely divided graphite powder can form explosive mixtures with air. Avoid contact between graphite dust clouds and high energy ignition sources. Classified as not flammable.

### **FIRST AID MEASURES**

Ingestion:	Keep respiratory tract clear. Do NOT induce vomiting unless directed by medical personnel. Natural graphite is not known to be toxic by ingestion. However, ingestion may cause digestive system blockage.
Skin contact:	Wash with mild soap and water: Natural graphite is non-staining to skin.
Eye contact:	Rinse eyes with tepid water until eyes are clear of particles. If eye irritation persists, seek medical attention.
Inhalation:	Remove patient to particulate-free environment. Wear approved dust mask to avoid breathing dust. Seek medical attention if irritation persists.

### **HANDLING & STORAGE**

Handling:	Conventional means to avoid dusting conditions. Keep powder from contacting eyes. Natural graphite is a good conductor of electricity. Avoid contact between natural graphite and electrical circuitry.
Slip Hazard:	Graphite is a highly lubricious material and may present a slip hazard if spilled on pedestrian surfaces.
Storage & Incompatibilities:	Store all carbonaceous material in a dry location. Natural graphite is incompatible with all oxidizing agents.

**ACCIDENTAL RELEASE MEASURES**

Personal Precautions: Wear approved dust mask, safety goggles, and conventional work gloves.  
Methods for cleaning up: Conventional Sweep or vacuum. Avoid creating dusting conditions.  
Environmental Precautions: Natural graphite is inert and insoluble and will not pose any soluble ion hazards to the environment. However, good housekeeping practices should be followed and spilled material should be cleaned up, and disposed of in an appropriate manner.

**EXPOSURE CONTROLS / PERSONAL PROTECTION MEASURES**

Ingredients with control parameters / occupational exposure limits

Component	#CAS	% Weight	ACGIH TWA	Control Ref
Natural Graphite	7782-42-5	100%	2.0 mg/m <sup>3</sup>	3 mg/m <sup>3</sup> for nuisance dust
Silica, var Quartz	14808-60-7	0.1-4%	0.025 mg/m <sup>3</sup> Respirable dust	2011 ACGIH TLV Handbook

Engineering Measures: Use adequate dust collection to maintain dust levels below the control or recommended values.  
Respiratory Protection: Approved dust mask, type N95 recommended.  
Eye protection: Conventional safety glasses or goggles.  
Skin protection: Conventional work gloves and clothing.  
Additional: None.

**TOXICOLOGICAL / ECOLOGICAL INFORMATION**

Toxicological information about natural graphite is not available. Natural graphite is inert, insoluble and is not expected to present an ingestion hazard.

Assessment: Natural graphite is inert and insoluble. To the best of our knowledge, natural graphite should not present any environmental hazards.  
Persistence and degradability: Natural graphite is a reduce form of carbon and will not degrade further under normal conditions. This form of carbon is stable, unreactive in water under ambient conditions, and is insoluble.  
Bioaccumulation: There is no evidence indicating that natural graphite is bioaccumulative.  
Aquatic Toxicity: Data not available.  
Soil Mobility: Not determined, however natural graphite is not expected to have mobility in soil as it is an insoluble, inorganic substance.

**DISPOSAL CONSIDERATIONS:**

Dispose of in a manner which conforms to local, state and Federal regulations.

**TRANSPORT INFORMATION**

Non hazardous. Not classified as a hazardous material. No labels required.

**REGULATORY INFORMATION:**

Inventory Information:  
EEC EINECS #231-955-3|  
US TSCA Yes  
Canada DSL Yes  
Canada NDSL No  
Australian AICS Yes  
Korean ECL Yes  
Asia PAC Yes  
Swiss Giftliste 1 Yes #g8422  
IECSC Yes

PICCS	Yes
New Zealand NZLoC	Yes
REACH:	Natural graphite is exempt from RACH registration.
RoHS:	Natural graphite is compliant with the EU RoHS directive
WEEE:	Natural graphite is compliant with the EU waste electrical and electronic equipment directive.

**OTHER INFORMATION**

HMIS rating 110  
NFP Rating 110

**Abbreviations Used**

ACGIH TWA	American Council of Government and Industrial Hygienists Time Weighted Average value.
CAS	Chemical Abstracts Service
NA	Not applicable
N.O.S.	Not otherwise specified.

**DISCLAIMER**

To the best of our knowledge, the information contained herein is accurate. However, neither the above-named supplier, nor any of its subsidiaries, assumes any liability whatsoever for the accuracy or completeness of the information contained herein. Final determination of suitability of any material is the sole responsibility of the user. All materials may present unknown hazards and should be used with caution. Although certain hazards are described herein, we cannot guarantee that these are the only hazards that exist.