



## SECTION I: IDENTIFICATION OF PRODUCT

COMPANY: **Diversity Technologies Corp.** DATE: **May 4, 2015**  
**8750 – 53<sup>rd</sup> Ave.** PHONE: **780-440-4923**  
**Edmonton, AB T6E 5G2** FAX: **780-469-1899**

PRODUCT NAME: **Graphite (Natural Graphite)**

PRODUCT USE: Oilwell drilling fluid additive.  
 CHEMICAL FAMILY: Carbon; graphite CAS #: 7782-42-5

## WORKPLACE HAZARDOUS MATERIALS INFORMATION SYSTEM (WHMIS)

WHMIS CLASSIFICATION: D2A  
 WORKPLACE HAZARD: Materials causing other toxic effects; potential carcinogen:  
**Potential combustible dust hazard.**

## TRANSPORTATION OF DANGEROUS GOODS (TDG)

PROPER SHIPPING NAME: Not regulated under TDG  
 TDG CLASSIFICATION: Not applicable  
 UN NUMBER (PIN): Not applicable  
 PACKING GROUP: Not applicable

## SECTION II: HAZARDOUS INGREDIENTS

INGREDIENT	% (w/w)	CAS NUMBER	LD <sub>50</sub> Oral-Rat	LC <sub>50</sub> Inhal-Rat	ACGIH-TLV
Silica, crystalline quartz	1-5	14808-60-7	No information	No information	0.025 mg/m <sup>3</sup>

## SECTION III: HEALTH HAZARDS

ROUTE OF ENTRY:  EYE CONTACT  SKIN CONTACT  INHALATION  INGESTION  
 EYE CONTACT: May cause mechanical irritation.  
 SKIN CONTACT: May dry skin due to absorption of skin oils on fine particulate dust.  
 INGESTION: Not a toxic product.  
 INHALATION: Inhalation may cause irritation of the nose, throat and respiratory passages. Contains silica. Long-term inhalation of silica may cause silicosis, a progressive, disabling and, sometimes, fatal lung disease. Chronic inhalation exposure to crystalline silica quartz has been observed to cause lymph node effects, kidney effects and auto-immune disease.  
 CARCINOGENICITY: Crystalline silica when inhaled in the form of quartz or crystobalite from occupational sources is carcinogenic to humans: IARC has concluded that this chemical is carcinogenic to humans (Group 1). The ACGIH has designated this chemical as a suspected human carcinogen (A2). The US

TERATOGENICITY:	NTP has listed this chemical as a known human carcinogen. No information available.
REPRODUCTIVE TOXICITY:	No information available.
MUTAGENICITY:	Crystalline silica has been shown to cause mutagenic effects in human cells in-vitro.
SYNERGISTIC PRODUCTS:	No information available.

#### **SECTION IV: FIRST AID MEASURES**

SKIN CONTACT:	Wash with soap and water if irritation develops, at breaks and at end of workday. If irritation persists, obtain medical attention.
EYE CONTACT:	Flush with gently flowing warm water until particles are dislodged. If irritation persists, obtain medical attention.
INGESTION:	Do not induce vomiting. Rinse mouth and give one to two glasses of water to drink. If symptoms develop, obtain medical attention. Never give anything by mouth to an unconscious or convulsing victim.
INHALATION:	Move to fresh air. Apply oxygen or artificial respiration if required. If breathing difficulties or distress continues, obtain medical attention.

#### **SECTION V: PHYSICAL DATA**

APPEARANCE AND ODOUR:	Dark gray powder, odourless.
SPECIFIC GRAVITY:	2.25
BOILING POINT (°C):	Not applicable
MELTING POINT (°C):	Not applicable (sublimes at 3652°C)
SOLUBILITY IN WATER:	Insoluble                      pH: Not applicable
PERCENT VOLATILE BY VOLUME:	Not applicable
EVAPORATION RATE:	Not applicable
VAPOUR PRESSURE (mmHg):	Not applicable
VAPOUR DENSITY (air = 1):	Not applicable
BULK DENSITY:	Not available

#### **SECTION VI: FIRE AND EXPLOSION HAZARD DATA**

FLASH POINT:	Not applicable
FLAMMABLE LIMITS:	Not applicable
EXTINGUISHING MEDIA:	Water, carbon dioxide, foam or dry chemical.
SPECIAL FIRE FIGHTING PROCEDURES:	Self-contained breathing apparatus required for fire-fighting personnel.

UNUSUAL FIRE AND EXPLOSION HAZARDS: At temperatures above 1500°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. Powdered material may form explosive dust-air mixture, which can be ignited by a spark heat or flame. Powdered form is self-heating and may catch fire.

HAZARDOUS COMBUSTION PRODUCTS: Oxides of carbon on combustion.

**SECTION VII: REACTIVITY DATA**

STABILITY:  STABLE  UNSTABLE  
INCOMPATIBILITY (CONDITIONS TO AVOID): Strong oxidizers, acids and bases.  
CONDITIONS OF REACTIVITY: Contact with incompatible materials.  
HAZARDOUS DECOMPOSITION PRODUCTS: No information available.  
HAZARDOUS POLYMERIZATION:  WILL NOT OCCUR  MAY OCCUR

**SECTION VIII: PREVENTIVE MEASURES**

**SPECIAL PROTECTION INFORMATION**

RESPIRATORY PROTECTION: Suggest NIOSH/MESA approved dust mask or approved respirator with filters for silica bearing dust.

VENTILATION: Use local exhaust ventilation, process enclosure or other engineering controls to maintain levels of airborne dust below TLV, if necessary.

PROTECTIVE GLOVES: Personal preference to prevent contact.

EYE PROTECTION: Suggest safety glasses or goggles.

OTHER PROTECTIVE EQUIPMENT (SPECIFY): Suggest rubber apron or other impervious clothes. Ensure emergency eye wash station and safety shower are available.

**PRECAUTIONS TO BE TAKEN IN HANDLING AND STORING**

Avoid ingestion. Practice reasonable caution and personal cleanliness. Avoid skin and eye contact. Dust collectors should be used in all work areas to trap airborne dust. Natural graphite is a good conductor of electricity. Avoid contact between natural graphite and electrical circuitry. Wear respiratory protection to prevent inhalation. Store in a cool, dry area away from incompatibles.

**STEPS TO BE TAKEN IN CASE THE MATERIAL IS SPILLED OR RELEASED**

Use appropriate safety equipment including respiratory protection. Contain spill. Sweep up or vacuum to collect. Collect uncontaminated material for repackaging. Collect contaminated material for disposal in an approved container for disposal. Flush area with water.

**WASTE DISPOSAL METHOD**

Dispose in accordance with federal, provincial and local regulations. Landfill is suggested; check with local operator. It is the responsibility of the end-user to determine if material meets the criteria of hazardous waste at the time of disposal.

**SECTION IX: PREPARATION**

The information contains herein is given in good faith, but no warranty, expressed or implied, is made.

DATE ISSUED: **May 4, 2015**  
SUPERSEDES: **May 4, 2012**  
BY: Regulatory Affairs  
PHONE: 780-440-4923