

PCD Woodworking



Materials Safety Data Sheet

SECTION 1 PRODUCT AND COMPANY IDENTIFICATION

Product name: SYNDITE
Product description: POLYCRYSTALLINE DIAMOND PRODUCT
Recommended use: ABRASIVE CUTTING TOOL MATERIAL USED IN NON-FERROUS CUTTING AND MACHINING
Manufacturer: ELEMENT SIX LTD., SHANNON AIRPORT, Co CLARE, IRELAND
Emergency telephone: +353-61-471655
Date prepared: 24/10/2004

SECTION 2 COMPOSITION / INFORMATION ON INGREDIENTS

MATERIAL	CAS No	% BY WEIGHT	OSHA PEL-TWA	ACGIH TLV-TWA
Diamond	7782-40-3	30..100%	15mg/m ³	10mg/m ³
Cobalt	7440-48-4	10..30%	0.1mg/m ³	0.02mg/m ³
Tungsten Carbide	12070-12-1	0..70%	5mg/m ³	5mg/m ³

SECTION 3 HAZARD IDENTIFICATION

Sintered polycrystalline diamond does not in its intact form present a health hazard. Operations such as grinding, cutting, heating or welding will produce dusts, fumes or vapours, which may present a health hazard if the occupational exposure limits are exceeded as detailed in section 2 of this document. Dust, fumes and vapours generated during operations can enter the body through inhalation, ingestion and skin contact. Long term inhalation of cobalt may lead to occupational asthma, permanent respiratory diseases, interstitial pneumonitis, hard metal disease and emphysema. Ingestion of significant amounts of cobalt may cause blood, organ or other effects. Cobalt is listed by IARC as a category 2B-possibly carcinogenic to humans. Cobalt is listed by ACGIH as an animal carcinogen. Cobalt is known to the State of California to cause Cancer.

SECTION 4 FIRST AID MEASURES

Inhalation: If high concentrations are inhaled or if worker exhibits trouble breathing, remove to fresh air. If symptoms persist, seek medical attention.
Skin Contact: Wash affected areas thoroughly with soap and water. Seek medical attention if rash occurs.
Eye Contact: Remove contact lenses. Flush eyes with water for 15 minutes. Seek medical attention if irritation persists.
Ingestion: Seek medical attention.

SECTION 5 FIRE FIGHTING MEASURES

FLASH POINT: n/a, LOWER EXPLOSIVE LIMIT: n/a, UPPER EXPLOSIVE LIMIT: n/a
Polycrystalline Diamond is not a fire hazard and under normal conditions. However dust produced from grinding may be flammable and may pose a fire hazard if allowed to accumulate in the presence of an ignition source.
Extinguishing Media: Dry chemical, CO₂, Foam or water.
Special PPE for Fire Fighters: For a dust fire confined to small area, use approved respirator to avoid inhaling dust and fumes. For large fires, fire fighters should use self-contained breathing apparatus.

SECTION 6 ACCIDENTAL RELEASE MEASURES

Personal Precaution: Clean-up personnel should wear appropriate personal protective equipment as detailed in Section 8 of this document. Respiratory protection should be worn if hazardous components exceed exposure limits listed in Section 2 of this document.

Environmental Precaution: Isolate the area where the spill has occurred,

Method of Cleaning-up: Clean-up spilled material. Avoid generating dust during clean-up operations.

SECTION 7 HANDLING AND STORAGE

Handling: Polycrystalline Diamond products used under normal operating conditions do not require special safety precautions other than the normal safety procedures for handling and using cutting tools, such as safety glasses and gloves. In grinding, cutting burning or welding operations, generated dust or fumes may require special consideration. Wash hands after handling, before eating or smoking. Wash exposed skin. Smoking and consumption of food or drink should be restricted from areas where hazardous components may arise. Maintain good housekeeping procedures to avoid dust accumulation during grinding. Avoid dust inhalation and direct skin contact with dust. Periodic medical monitoring is recommended for individuals regularly exposed to dust or fumes, with particular attention to any potential sensitisation.

Storage: Keep material in a tightly closed containers and store in a cool dry area.

SECTION 8 EXPOSURE CONTROLS / PERSONAL PROTECTION

Engineering Measures: Provide local exhaust ventilation in areas where debris, dust or fumes may be released, to ensure that concentrations do not exceed exposure limits.

Personal Protection Equip.: Wear safety glasses with side shields when grinding or cutting this product. Wear appropriate NIOSH approved respirator of air borne concentrations of hazardous components exceed exposure limits as detailed in Section 2 of this document. Wear protective gloves or barrier cream to avoid irritation and sensitisation. Wear appropriate clothing to avoid skin contact with dust generated during grinding operations.

Hygiene Measures: Wash hands before eating or smoking.

SECTION 9 PHYSICAL AND CHEMICAL PROPERTIES

<i>Appearance:</i> Black layer of polycrystalline diamond on a tungsten carbide back.		
<i>Odour:</i> none	<i>pH:</i> n/a	<i>Boiling point:</i> n/a
<i>Flash point:</i> n/a	<i>Flammability:</i> n/a	<i>Explosive properties:</i> n/a
<i>Vapour Pressure:</i> n/a	<i>Relative density:</i> n/a	<i>Oxidising properties:</i> n/a
<i>Solubility in water:</i> n/a	<i>Partition Coeff:</i> n/a	<i>Viscosity:</i> n/a
<i>Vapour Density:</i> n/a	<i>Partition Coeff:</i> n/a	

SECTION 10 STABILITY AND REACTIVITY

Stability: Stable
Conditions to avoid: None known
Materials to avoid: Contact with strong acids.

SECTION 11 TOXICOLOGICAL INFORMATION

Cobalt: The International Agency for research on Cancer (IARC) lists cobalt and cobalt compounds as a Category 2B carcinogens (possible carcinogenic to humans). Cobalt fumes or dust may cause pulmonary, skin or eye irritation. Cobalt may be a sensitising agent for skin and respiratory systems. Chronic exposure may affect the heart, pancreas, thyroid gland or bone marrow.
Rat Oral LD_{Lo}: 1500mg/kg Rabbit Oral LD_{Lo}: 20 mg/kg
Rat Intraperitoneal LD_{Lo}: 250 mg/kg Rabbit Intratracheal LD_{Lo}: 100mg/kg
Rat Intravenous LD_{Lo}: 100mg/kg
Inhalation exposure to cobalt dust can produce two types of lung condition: Interstitial lung disease (hard metal disease) or occupational asthma (hypersensitivity allergic obstructive airway syndrome).
Skin exposure can result in an allergic red rash (cobalt itch).
Cobalt is an anticipated human carcinogen based on animal studies (IARC Group 2B). Cobalt is listed as an animal carcinogen (A3) by ACGIH and as a possible human carcinogen by IARC (2B).

Medical Restrictions: Persons with a history of allergies should not work with this product.

Tungsten Carbide: Toxicity has not been quantified, may cause pulmonary and skin sensitisation and mucous membrane irritation in dust form.

SECTION 12 ECOLOGICAL INFORMATION

Mobility: Not relevant.
Persistence/Degradability: Not relevant.
Bioaccumulation: Not relevant.
Eco-toxicity: This product is not expected to be toxic to the environment. Adopt sound working practices, so that the product is not released into the environment.

SECTION 13 DISPOSAL CONSIDERATIONS

Dispose of in accordance with appropriate government regulation. May be sold as scrap for reclaim.

SECTION 14 TRANSPORT INFORMATION

ADR: Not regulated. RID: Not regulated. IMDG: Not regulated. ICAO / IATA: Not regulated.

SECTION 15 REGULATORY INFORMATION

Regulations: This MSDS has been prepared according to EU regulation. EC Directives 67/548/EEC & 88/379/EEC

OSHA: This product is not hazardous under normal conditions of use. Dust generated when grinding, cutting, burning or welding this product may be hazardous

TSCA: Components of this product are listed in the TSCA inventory. This product complies with Chemicals substance inventory requirements of the US EPA toxic substance control act.

SARA: Cobalt is subject to the requirements of Section 313 of Title III of Superfund Amendment and Reauthorization Act of 1986.

State Regulatory Information: This product contains cobalt, which is listed in California Proposition 65 as a known cancer causing chemical.

SECTION 16 OTHER INFORMATION

The information contained herein is based on our state of knowledge at the above-specified date. It refers solely to the product indicated and constitutes no guarantee of particular quality. It is the duty of the user that this information is appropriate and complete with respect to the specific use intended. The MSDS cancels and replaces any preceding release.