



M A T E R I A L S A F E T Y D A T A S H E E T

Section I - IDENTIFICATION

Eutectic Canada Inc.
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Product Name **BoroTec 10009**
AWS Standard Terminology Thermal Spray Powder
WHMIS Classification D-2A Serious Toxic Effects
 D-2B Other Toxic Effects

Transport Of Dangerous Goods Not applicable

Section II - HAZARDOUS INGREDIENTS

Ingredients	Range wt%	CAS number	Exposure Limit (mg/m³)
Nickel, elemental	60-100	7440-02-0	1
Chromium, elemental	10-30	7440-47-3	0.5
Boron, elemental	5-10	7440-42-8	10
Iron, elemental	1-5	7439-89-6	5 (fumes)
Silicon, elemental	1-5	7440-21-3	10

Section III - PHYSICAL / CHEMICAL CHARACTERISTICS

The following data should only be used in the context of the Material Safety Data Sheet.

Physical State Powder
Appearance and odor Dark, grey, odorless powder

Section IV - FIRE AND EXPLOSION DATA

Flammable: No

Section V - REACTIVITY

Unusual Fire and Explosion Hazards: Will not occur
Level of stability: Stable
Hazardous Polymerization: Will not occur

THE BODY CAN BE AFFECTED IF FUMES AND GASES ARE INHALED, AND/OR COME INTO CONTACT WITH EYES.

FUMES AND GASES CAN BE DANGEROUS TO YOUR HEALTH

SHORT TERM (ACUTE) OVER EXPOSURE TO FUMES

May result in discomfort such as dizziness, nausea or irritation of the nose, throat or eyes.

FLUORIDES - Compounds evolved may cause skin and eye burns and/or pulmonary edema.

MANGANESE, MANGANESE DIOXIDE

Toxicity caused by inhalation of dust or fumes. Remove from exposure. Wash eyes and/or skin with water to remove dust.

SILICON, SILICON OXIDE

Possible eye irritant. Remove by washing eyes with lots of water.

CHROMIUM

Inhalation of fume with chromium (VI) compounds can cause irritation of the respiratory system, damage lungs and cause asthma. Swallowing chromium (VI) salts can cause severe injury or death. Dusts on the skin can form ulcers. Eyes can be burned by chromium (VI) compounds.

NICKEL, NICKEL OXIDE

Inhalation of fumes containing nickel compounds may cause metallic taste, nausea, tightness in chest, fever and allergic reactions.

MOLYBDENUM

Trioxide has caused irritation of the eyes, nose and throat, weight loss and digestive disturbances in animals.

BARIUM

Inhalation of fumes with barium compounds may cause aching eyes, rhinitis, frontal headache, wheezing, laryngeal spasms, salivation and anorexia.

COPPER

Metal fume fever can be caused by fresh copper oxide fumes.

LEAD

Inhalation of gases, fumes, dust or compounds (soluble or insoluble) can cause blood and cell problems.

SILVER

Silver salts are corrosive. Ulceration and eye burns are treated by flushing with copious amounts of water.

ZINC

Inhalation of zinc fumes may cause chills, breathing difficulties, fever, cough, muscular pain, nausea and vomiting. Recovery is generally complete.

CADMIUM

Fumes cause irritation of the nose and throat. Sufficient inhalation (after a delay of several hours) may develop coughing, chest pain, sweating, chills, shortness of breath and weakness. Death may occur.

TIN

Eye, skin and respiratory system irritation from fumes.

LONG TERM (CHRONIC) OVER EXPOSURE TO FUMES

May lead to siderosis (iron deposits in lungs), affect pulmonary functions, blood and cell disorders.

FLUORIDES

Repeated exposure to fluorides can cause serious bone erosion.

MANGANESE, MANGANESE DIOXIDE

Long term over exposure to these compounds may affect the central nervous system. Symptoms include muscular weakness, tremors and behavioral and handwriting changes.

SILICON, SILICON OXIDE

Prolonged exposure to dust can cause pulmonary fibrosis (silicosis).

CHROMIUM

Chromium (VI) compounds are considered by OSHA to be carcinogenic. Absorption of chromium (VI) compounds through the skin can cause systemic poisoning primarily affecting the kidneys and liver.

NICKEL, NICKEL OXIDE

Long term over exposure to nickel compounds may cause lung fibrosis or pneumoconiosis. Nickel and its compounds are considered by the OSHA as carcinogenic.

MOLYBDENUM - Not known

BARIUM

Long term exposure to soluble barium compounds may cause nervous disorders and may have deleterious effects on the heart and circulatory systems.

COPPER

No adverse long term effects have been reported.

LEAD

Repeated and prolonged exposures to gases, fumes or dusts are poisonous. This may lead to blood, cell, kidney, liver and/or generic disorders.

SILVER

Silver and its compounds cause pigmentation of the skin, eyes and respiratory tract (argyria).

ZINC

Severe and prolonged over exposure may cause pulmonary edema and pneumonia.

CADMIUM

Repeated and prolonged exposures to fumes may cause loss of smell, ulceration of the nose, shortness of breath (emphysema), kidney damage and mild anemia.

TIN

No significant long term effects.

Section VII - EMERGENCY FIRST AID

Remove victim to well ventilated area. Obtain medical assistance and apply artificial respiration if necessary.

Section VIII - PREVENTIVE MEASURES

Personal protective equipment: Use NIOSH approved respirator for protection against fumes in confined areas or where local exhaust or ventilation does not keep exposure below the recommended exposure limit. Wear protective helmet or use face shield with filter lens. Provide protective screens and flash goggles if necessary. Refer to CSA W117.2 - Safety in Welding and Cutting - for further information.

Storage and handling: Keep in cool dry place.

Steps to be taken if material is released or spilled: Electrodes, themselves are not hazardous.

Waste Disposal Method: Prevent waste from contaminating environment. Disposal should be in accordance with local, provincial and federal regulations.

Section IX - PREPARATION DATE OF MATERIAL SAFETY DATA SHEET

Prepared by	Director of Products and Services
Contact number	514-695-7500
Date prepared	1999/09/30
Date revised	2010/09/30
Expiration Date	2013/09/30