

## Material Safety Data Sheet

### Section 1. Product and Company Identification

Product Identification: QC-TOXM-B Medium Toxic Metals  
 MSDS Number: QC-TOXM-B Medium Toxic Metals  
 Company Identification: High-Purity Standards  
 P.O. Box 41727  
 Charleston, SC 29423  
 Telephone: (843) 767-7900  
 FAX: (843) 767-7906

In case of emergency call INFOTRAC: 800-535-5053

### Section 2. Chemical Composition

Component	CAS/EINECS Registry #	Percent Concentration	ACGIH TLV	OSHA PEL
Antimony	7440-38-2/ 231-148-6	<0.1	0.01 mg/m <sup>3</sup>	0.5 mg/m <sup>3</sup>
Arsenic	7440-38-2/ 231-146-5	<0.1	0.01 mg/m <sup>3</sup>	10 µg/m <sup>3</sup>
Beryllium Acetate (Be <sub>4</sub> O(C <sub>2</sub> H <sub>3</sub> O <sub>2</sub> ) <sub>6</sub> )	19049-40-2/ 242-785-4	<0.1 (as Be)	0.002 mg/m <sup>3</sup>	0.002 mg/m <sup>3</sup>
Cadmium	7440-43-9/ 231-152-8	<0.1	0.002 mg/m <sup>3</sup> (respirable particulate)	0.005 mg/m <sup>3</sup>
Chromium	7440-47-3/ 231-157-5	<0.1	0.5 mg/m <sup>3</sup>	1 mg/m <sup>3</sup>
Lead	7439-92-1/ 231-100-4	<0.1	0.05 mg/m <sup>3</sup>	0.05 mg/m <sup>3</sup>
Manganese	7439-96-5/ 231-105-1	<0.1	0.2 mg/m <sup>3</sup>	C 5 mg/m <sup>3</sup>
Nickel	7440-02-0/ 231-111-4	<0.1	1.5 mg/m <sup>3</sup>	1 mg/m <sup>3</sup>
Borosilicate	65997-17-3	media	Not Available	Not Available
Nitric Acid	7697-37-2/ 231-714-2	0.1-2	2 mg/kg	5 mg/m <sup>3</sup>
Tartaric Acid	87-69-4	<0.1	Not Available	Not Available

### Section 3. Hazard Identification

**Emergency Overview:** Beryllium, cadmium, and nickel are a probable human carcinogen. Arsenic, cadmium, and lead are highly toxic if ingested or inhaled. If ingested, do NOT induce vomiting. Dilute with water and call a physician.

**Target Organs:** Eyes, skin, respiratory system, immune system, nasal cavities, teeth, blood, bones, kidneys, central nervous system. Increases risk of lung, liver, kidney, and bladder cancer with prolonged exposure.

**Skin/Eye Contact:** Skin contact can cause irritation and/or cracked skin. Eyes can be damaged by irritation or mechanical injury from the particulate matter.

**Inhalation:** May cause irritation and difficult breathing. Toxic if burning.

**Ingestion:** Ingestion of arsenic compounds may be poisonous, leading to death. Animal studies indicate that prolonged ingestion of some soluble nickel compounds may affect the blood, bone marrow, thymus, spleen, kidneys, and immune system. Cadmium is a

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poison that accumulates in the liver and kidneys. May cause digestive tract irritation, central nervous system depression and kidney damage.

#### Section 4. First Aid Measures

**Inhalation:** Remove to fresh air. Give artificial respiration if necessary and seek immediate medical advice.

**Skin/eye Contact:** Remove contaminated shoes and clothing. Flush contaminated area with plenty of water for at least 15 minutes. Call a physician if irritation develops.

**Ingestion:** Rinse mouth with water. If swallowed, do NOT induce vomiting. CALL A PHYSICIAN in all cases.

#### Section 5. Fire Fighting Measures

**Fire & Explosion Hazards:** The filter is a severe fire hazard. Once ignited, membranes will burn very rapidly. May release toxic fumes upon burning.

**Extinguishing Media:** Use any extinguishing media that is suitable for the surrounding area.

**Specific Methods:** Firefighters should wear proper protective equipment and self-contained breathing apparatus with full face piece operated in positive pressure mode. This is especially important if this material becomes airborne.

#### Section 6. Accidental Release Measures

In solid form this material does not represent a health risk. If appropriate, moisten first to prevent dusting. Carefully collect remainder, then remove to safe place. Do NOT let this chemical enter the environment.

#### Section 7. Handling and Storage

Store in a cool, dry, ventilated storage area in a tightly sealed container. Store away from sources of heat, ignition and oxidizing agents. Refer to Section 8 for personal handling instructions.

#### Section 8. Exposure Controls and Personal Protection

**Engineering Controls:** Under normal use conditions no specific controls are needed, normal room ventilation is adequate. Otherwise, use in vent hood.

**Respiratory Protection:** If possibility of material burning, wear suitable respirator.

**Personal Protection:** Wear proper gloves, safety glasses with side shields, lab coat/apron.

#### Section 9. Physical and Chemical Properties

**Form:** Solid

**Molecular Weight:** N/A

**Melting Point:** N/A

**Boiling Point:** N/A

**Vapor Pressure (mm):** N/A

**Vapor Density (air+1):** N/A

**Specific Gravity (H<sub>2</sub>O= 1):** N/A

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Solubility in H<sub>2</sub>O: Insoluble at 20°C

Danger of Explosion: Not Explosive

Autoignition temperature: 130°C minimum, determined on aged membrane.

Appearance: White porous solid disks

Odor: Odorless

pH: N/A

#### Section 10. Stability and Reactivity

Stability Indicator: YES

Conditions to Avoid: Incompatibles

Incompatibles: Strong oxidizing agents, acids.

Hazardous Decomposition Products: Oxides of carbon. NO<sub>x</sub> compounds including nitric oxide (NO), nitrogen dioxide (NO<sub>2</sub>), nitrous oxide (N<sub>2</sub>O) and nitric acid mist or vapor. May release toxic metals upon burning.

Hazardous Polymerization: None expected.

#### Section 11. Toxicological Information

Beryllium, cadmium, and nickel are investigated as a tumorigens. Arsenic and lead are highly toxic.

RTECS#: :

HNO<sub>3</sub>- QU5775000

As- CG0525000

Be<sub>4</sub>O(C<sub>2</sub>H<sub>3</sub>O<sub>2</sub>)<sub>6</sub> -DS29750000

Cd- EU9800000

Cr- GB4200000

Pb- OF7525000

Mn- OO9275000

Ni- QR5950000

Toxicity Data:

LD<sub>LO</sub> Oral, Human: (Nitric Acid) 430 mg/kg; LD<sub>LO</sub> (As) 763 mg/kg; TD<sub>LO</sub> Intratracheal, Rat: (Be<sub>4</sub>O(C<sub>2</sub>H<sub>3</sub>O<sub>2</sub>)<sub>6</sub>) 13 mg/kg; LD<sub>LO</sub> Oral, Human: (Cd) 2330 mg/kg; LD<sub>50</sub> Unreported Route, Rat: (Cr) 27.5 mg/kg; TD<sub>50</sub> Oral, Woman: (Pb) 450 mg/kg/6 year; LD<sub>50</sub> Oral, Rat: (Mn) 9 g/kg; LD<sub>50</sub> Oral, Mouse: (Ni) 50 mg/kg;

#### Section 12. Ecological Information

Ecotoxicological information: Do not allow material to reach ground water, water bodies, or sewage system. Beryllium and its compounds are considered to have high acute and chronic toxicity to aquatic life. Beryllium is more toxic in soft water than in hard water.

#### Section 13. Disposal Considerations

General: Follow federal, state and local regulations for metallic and nitrocellulose compounds.

#### Section 14. Transport Information

D.O.T. Classification: Hazardous by IATA and 49CFR regulations (based on concentration of acid).

D.O.T. Shipping Name: Nitric Acid (0.1-2%)

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D.O.T. Hazard Class: 8  
U.N./N.A. Number: 2031  
Packing Group: II  
D.O.T. Label: Corrosive (8)

#### Section 15. Regulations (Not meant to be all inclusive-selected regulation listed)

TSCA Status: Components of this solution are listed on the TSCA Inventory.

RCRA Status: No

SARA: Subject to the reporting requirements of Section 313 of SARA Title III and of 40 CFR 372

Risk Phrases: R21, R28. Harmful in contact with skin. Very toxic if swallowed.

Safety Phrases: S36/37/39, 41, Wear suitable protective clothing, gloves and eye/face protection.  
In case of fire, do not breathe fumes.

Note: Restricted to Professional Users.

WHMIS Information (Canada): Not regulated

#### Section 16. Other Information

HPS products are intended for laboratory use only. All products should be handled and used by trained professional personnel only. The responsibility for the safe handling and use of these products rests solely with the buyer and/or user. The MSDS was prepared carefully and represents the best data currently available to us; however, HPS does not certify the data on the MSDS. Certified values for this material are given only on the Certificate of Analysis.

Theodore C. Rains, Ph.D.