

## Material Safety Data Sheet

### Section 1. Product and Company Identification

Product Identification: TMFM-BeO Set  
MSDS Number: Round Robin  
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
Beryllium Oxide BeO	1304-56-9/ 215-133-1	<0.1% (as Be)	0.05 µg/m <sup>3</sup>	0.002 mg/m <sup>3</sup>
Nitrocellulose (Pyroxylin)	9004-70-0/ Unlisted	40-50	Not Available	Not Available
Cellulose Acetate	9004-35-7/ Unlisted	0-10	Not Available	Not Available
Proprietary Components	N/A	5	Not Available	Not Available
Water, deionized	7732-18-5/ 231-791-2	Balance	Not Available	Not Available

### Section 3. Hazard Identification

Emergency Overview: This substance is a known carcinogen. If ingested, do NOT induce vomiting. Dilute with water and call a physician.

Target Organs: Lungs, eyes, skin, respiratory system, teeth.

Skin/eye Contact: Skin contact can cause irritation. Eyes can be damaged by irritation or mechanical injury from the particulate matter.

Inhalation: Inhalation of beryllium oxide dust is known to cause acute health effects. Short term (acute) exposure to dust may result in cough, shortness of breath and /or sore throat. Symptoms of exposure may be delayed. Long term (chronic) inhalation of beryllium compounds may cause a serious lung disease called Chronic Beryllium Disease the symptoms of which are cough, weight loss and weakness. This substance is a known human carcinogen. No significant amount of particulate beryllium oxide will come off the filters when handled and stored under laboratory conditions.

Ingestion: The health effects of ingestion of beryllium oxide are unknown.

### 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, if conscious rinse mouth. CALL A PHYSICIAN in all cases.

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### Section 5. Fire Fighting Measures

**Fire & Explosion hazards:** The filter is a severe fire hazard. Once ignited, these membranes will burn very rapidly. In case of fire metal oxide fumes may be released.

**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

When intact 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, moisture, ignition, and oxidizing agents. Refer to Section 8 for personal handling instructions.

### Section 8. Exposure Controls and Personal Protection

**Engineering Controls:** Use local exhaust ventilation or other engineering to ensure compliance with applicable exposure limits.

**Respiratory Protection:** Wear suitable respirator.

**Personal Protection:** Wear proper gloves, safety glasses with side shields, lab coat/apron. Do NOT take working clothes home.

### Section 9. Physical and Chemical Properties

**Form:** Solid

**Molecular Weight:** 25.01 (BeO)

**Melting Point:** 2530°C (BeO)

**Boiling Point:** 3900°C (BeO)

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

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

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

**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

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Conditions to Avoid: Temperatures above 55°C, flames, sparks, and other sources of ignition and contact with incompatible materials. Product aeration.

Incompatibles: Strong oxidizing agents, acids.

Hazardous Decomposition Products: Oxides of carbon and nitrogen. Beryllium oxide.

Hazardous Polymerization: Will not occur.

#### **Section 11. Toxicological Information**

Beryllium is investigated for tumorigenic and reproductive effects and is considered a human carcinogen.

Nitrocellulose -RTECS# QW0970000

BeO-RTECS# DS4025000

Toxicity Data:

LD<sub>50</sub> Oral, Rat: (Nitrocellulose) >5 g/kg; LD<sub>50</sub> Oral, Rat: (Cellulose Acetate) >3.2 g/kg; LD<sub>LO</sub>

Oral, Rat: (Be) 0.5 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.

#### **Section 13. Disposal Considerations**

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

#### **Section 14. Transport Information**

D.O.T. Classification: Not regulated as hazardous materials under 49 CFR 172.102©(1) special provision 43 or as dangerous goods by air under IATA Regulations, 4.4 special provision A122.

D.O.T. Shipping Name: Nitrocellulose Membrane Filters

D.O.T. Hazard Class: 4.1

U.N./N.A. Number: 3270

Packing Group: II

D.O.T. Label: Flammable solid

#### **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: R11,R49, 25, 26, 36/37/38, 43, 48/23 Highly flammable, May cause cancer by inhalation, Toxic if swallowed, Very toxic by inhalation, Irritating to eyes, respiratory system and skin, May cause sensitization by skin contact, Toxic: danger of serious damage to health by prolonged exposure through inhalation.

Safety Phrases: S36/37/39, 53,33, 45 Wear suitable protective clothing, gloves and eye/face protection, Take precautionary measures against static discharge, Avoid exposure –

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obtain special instructions before use, In case of accident or if you feel unwell, seek medical advice immediately (show the label where possible).

Note: Restricted to Professional Users.

WHMIS Information (Canada): B4: Flammable solids,

D2B: Toxic Material Causing Other Toxic Effects.

**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 rest 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.