



**ELECTRO-TECHNIC PRODUCTS INC.**

4642 N. RAVENSWOOD, CHICAGO, ILLINOIS 60640-4510

TELEPHONE: 1-773-561-2349

FAX: 1-773-561-3130

**MATERIAL SAFETY DATA SHEET**

IDENTITY: **Spectrum Tube, Bromine Vapor (ETP Product No. 20102)**  
Each tube contains a trace amount of bromine vapor in a gaseous state within a sealed glass tube, at very low pressures below about 0.15 Torr. At these concentrations, and pressures, the bromine vapor is not visibly discernible inside the tube.

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**SECTION 1**

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MANUFACTURER: <b>Electro-Technic Products, Inc.</b>	EMERGENCY TELEPHONE NUMBER <b>1-773-561-2349</b>
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ADDRESS <b>4642 N. Ravenswood Ave. Chicago, IL 60640-4510</b>	TELEPHONE FOR INFORMATION <b>1-773-561-2349</b>
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FAX NUMBER FOR INFORMATION <b>1-773-561-3130</b>
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DATE PREPARED **August 20, 2008**

Information for Sections 2 - 6 derived from MSDS provided by J.T. Baker, the chemical company who supplied the bromine used to make these tubes. Visit their web site [www.mallbaker.com](http://www.mallbaker.com).

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**SECTION 2 - HAZARDOUS INGREDIENTS/IDENTITY INFORMATION**

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HAZARDOUS COMPONENT	OSHA PEL	ACGIH TLV	OTHER LIMITS	% (OPT)
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<b>Bromine (Br<sub>2</sub>)</b>	<b>0.1 ppm</b>	<b>0.1 ppm</b>		
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**SECTION 3 - PHYSICAL AND CHEMICAL CHARACTERISTICS**

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BOILING POINT (°C) <b>58.8 °C</b>	SPECIFIC GRAVITY (H <sub>2</sub> O = 1) <b>3.1</b>
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VAPOR PRESSURE (Torr) <b>100 @ 9.3 °C</b>	MELTING POINT (°C) <b>- 7 °C</b>
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VAPOR DENSITY (AIR=1) <b>5.51 @ 15 °C</b>	EVAPORATION RATE (BUTYL ACETATE=1) <b>Not applicable</b>
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SOLUBILITY IN WATER <b>4 g/100 mL @20 °C</b>	APPEARANCE AND ODOR <b>Dark red liquid, sharp</b>
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**SECTION 4 - FIRE AND EXPLOSION DATA** Bromine Vapor Spectrum Tubes

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FLASH POINT (METHOD USED) FLAMMABLE LIMITS LEL UEL  
**Does not apply**

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EXTINGUISHING MEDIA **Does not apply**

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SPECIAL FIRE FIGHTING PROCEDURES **None**

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UNUSUAL FIRE AND EXPLOSION HAZARDS **None**

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**SECTION 5 - REACTIVITY DATA**

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STABLE (Y/N) **Y** CONDITIONS TO AVOID **Moisture, heat, flames, ignition sources**

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INCOMPATIBILITY (MATERIALS TO AVOID) **Reducing agents**

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HAZARDOUS DECOMPOSITION PRODUCTS **None**

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HAZARDOUS POLYMERIZATION (Y/N) **N** CONDITIONS TO AVOID **None**

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**SECTION 6 - HEALTH HAZARD DATA**

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ROUTES OF ENTRY INHALATION? **Yes** SKIN? **Yes** INGESTION? **Yes**

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HEALTH HAZARDS (ACUTE AND CHRONIC) **None**

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CARCINOGENICITY **No** NTP **No** IARC MONOGRAPHS **No** IARC CATEGORY **None**

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SIGNS AND SYMPTOMS OF EXPOSURE **Odor; eye and throat irritation**

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EMERGENCY AND FIRST AID PROCEDURES **Remove to Fresh Air**

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**SECTION 7 - PRECAUTIONS FOR SAFE HANDLING AND USE**

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STEPS TO BE TAKEN IN CASE MATERIAL IS RELEASED OR SPILLED  
**Clean up broken glass**

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WASTE DISPOSAL METHOD **Standard**

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PRECAUTIONS TO BE TAKEN IN HANDLING/STORING **Sharp glass fragments**

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OTHER PRECAUTIONS **None**

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**SECTION 8 - CONTROL MEASURES**

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RESPIRATORY PROTECTION (TYPE) **None**

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VENTILATION: LOCAL EXH. MECH. **If necessary** SPECIAL OTHER **None**

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PROTECTIVE GLOVES **No** EYE PROTECTION **Safety goggles**

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OTHER PROTECTIVE EQUIPMENT **None**

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WORK/HYGIENIC PRACTICES **Normal laboratory procedures**

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