

**MATERIAL SAFETY DATA SHEET  
COMPLIES WITH 29 CFR 1910.1200.  
OSHA HAZARD COMMUNICATION RULE**

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**CHEMICAL IDENTITY**

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LABEL IDENTITY	<b>Yttrium Barium Copper Oxide (123)</b>
CHEMICAL NAME/SYNONYMS	<b>123</b>
FORMULA	<b>YBa2Cu3Ox</b>

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**HAZARDOUS INGREDIENTS**

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Primary Components	(%)	Oral Toxicity (LD50)	Airborne Exp. OSHA/PEL (TWA)	Limits ACGIH TLV (TWA)	Carcinogen
<b>Yba2Cu3Ox</b>	<b>99-100</b>	<b>unknown</b>	<b>unknown</b>	<b>unknown</b>	<b>unknown</b>
<b>Soluble Barium Compounds</b>		<b>trace</b>	<b>0.5mg/m3</b>	<b>0.5mg/m3</b>	<b>no</b>
<b>BaCO3</b>	<b>&lt;tr.</b>	<b>418mg/kg</b>	<b>0.5mg/m3v</b>	<b>0.5mg/m3</b>	<b>no</b>
<b>CuO3</b>	<b>&lt;tr.</b>	<b>No data</b>	<b>1mg(Cu)/m3</b>	<b>1mg(Cu)/m3</b>	<b>no</b>
<b>Y2O3</b>	<b>&lt;tr.</b>	<b>500mg/kg</b>	<b>1mg(Y)/m3</b>	<b>1mg(Y)/m3</b>	<b>no</b>

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**PHYSICAL AND CHEMICAL PROPERTIES**

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BOILING POINT	<b>&gt;1100°C</b>	SPECIFIC GRAVITY	<b>6.4</b>
VAPOR PRESSURE	<b>ND</b>	PERCENT VOLATILE	<b>none</b>
VAPOR DENSITY	<b>ND</b>	EVAPORATION RATE	<b>none</b>
SOLUBILITY	<b>mineral acids</b>	ODOR	<b>odorless</b>
APPEARANCE	<b>black powder</b>		

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**FIRE AND EXPLOSION HAZARD DATA**

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FLASH POINT	<b>None</b>
FLAMMABLE LIMITS	<b>None</b>
EXTINGUISHING MEDIA	<b>Use suitable means for extinguishing surrounding fire</b>
SPECIAL FIRE FIGHTING PROCEDURES	<b>Use full protective clothing and NIOSH approved self-contained breathing apparatus</b>
UNUSUAL FIRE AND EXPLOSION HAZARD	<b>None</b>



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### HEALTH HAZARD INFORMATION

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**TLV: R&D material, limits not established, treat as soluble Ba compound, 0.5mg/m<sup>3</sup>**

**EFFECTS OF OVEREXPOSURE: R&D material, effects not established, treat as soluble Ba compound, 0.5mg/m<sup>3</sup>**

#### EMERGENCY FIRST AID PROCEDURES:

INHALATION

**Remove to fresh air**

INGESTION

**Seek immediate medical attention**

SKIN EXPOSURE

**Wash thoroughly with soap and water**

**\*SEEK MEDICAL ATTENTION IMMEDIATELY IN ALL CASES\***

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### REACTIVITY DATA

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STABILITY

**Stable**

CONDITIONS TO AVOID

**Hot, damp conditions**

INCOMPATIBILITY MATERIALS

**Avoid extended exposure to water, may cause decomposition**

HAZARDOUS DECOMP PRODUCTS

**constituent oxides and carbonates, soluble barium**

HAZARDOUS POLYMERIZATION

**None**

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### SAFE HANDLING AND USE

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MATERIAL SPILLS

**Pick up and place in suitable container for reclaim or disposal in a method that does not generate dust**

WASTE DISPOSAL METHOD

**Consult local, state and federal authorities for proper disposal of all waste**

NORMAL HANDLING & STORAGE

**Keep in tightly closed container, store in a cool dry ventilated area, isolate from incompatible substances**



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### SPECIAL PROTECTIVE INFORMATION

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RESPIRATORY PROTECTION	<b>(NIOSH Approved) consult supplier for all limitations</b>
VENTILATION	<b>Local exhaust preferred, consult ACGIH document <i>"Industrial Ventilation, A Manual of Recommended Practices"</i></b>
OTHER PROTECTIVE CLOTHING	<b>Lab coat or apron, and gloves</b>

**\*ALWAYS WEAR EYE PROTECTION\***

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### SPECIAL PRECAUTIONS

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**For laboratory use only. Not for drug, household, or other uses. This is an R&D Material and should be used by qualified staff members only.**

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NA= NOT APPLICABLE

ND= NO DATA FOUND