

**Technical Information**  
**Material Safety Data Sheet**

SDT-13\_04E

<b>SECTION 1</b>		<b>CHEMICAL PRODUCT AND COMPANY IDENTIFICATION</b>	
<b>MANUFACTURE'S NAME</b> GASTEC CORPORATION	<b>TELEPHONE NUMBER</b> +81-467-79-3910	<b>FACSIMILE NUMBER</b> +81-467-79-3979	
<b>ADDRESS</b> 6431 Fukaya, Ayase-City, Kanagawa 252-1103, Japan			
<b>REFERENCE NUMBER</b> SDT-13_04E		<b>DATE PREPARED</b> September 19, 2005	
<b>PRODUCT NAME</b>	Gas Detector Tube Carbon Disulfide Detector Tube No.13		
<b>SECTION 2</b>		<b>COMPOSITION/INFORMATION ON INGREDIENTS</b>	
<b>Pretreatment Tube:</b> Porous Silica Gel (0.2g) impregnated with Fuming Sulfuric Acid (15-20%), Chromic Anhydride and Copper Sulfate and 5 hydrate (<5%) in a glass tube. <b>Detector Tube:</b> Porous Silica Gel (0.2g) impregnated with Barium Compound (<5%) in a glass tube.			
<b>SECTION 3</b>		<b>HAZARDOUS IDENTIFICATION</b>	
Not applicable			
<b>SECTION 4</b>		<b>FIRST AID MEASURES</b>	
Eye contact:	Wash eyes immediately with plenty of water for at least 15 minutes and see a doctor.		
Skin contact:	Wash affected area immediately with soap and plenty of water.		
Inhalation:	Not applicable		
Ingestion:	Rinse mouth immediately and see a doctor.		
<b>SECTION 5</b>		<b>FIRE FIGHTING MEASURES</b>	
None			
<b>SECTION 6</b>		<b>ACCIDENTAL RELEASE MEASURES</b>	
Not applicable			
<b>SECTION 7</b>		<b>HANDLING AND STORAGE</b>	
When breaking off the tube ends, keep away from eyes. Broken glass tubes should not be picked up with bare hands. Tubes should be stored in a cool and dark place.			
<b>SECTION 8</b>		<b>EXPOSURE PROTECTION</b>	
Not applicable			
<b>SECTION 9</b>		<b>PHYSICAL AND CHEMICAL PROPERTIES</b>	
Barium Compound, Fuming sulfuric acid, Chromic anhydride, Copper sulfate and 5 hydrate:			
Flash point:	Not available		
Autoignition point:	Not available		

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**SECTION 10 STABILITY AND REACTIVITY**

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Barium Compound:	
Stability:	Stable.
Reactivity:	Heat or contact with acids may emit toxic hydrochloric gas. React with water to generate barium sulfate insoluble in water.
Condition to avoid:	Sunlight, Heat
Hazardous decomposition product:	Halide and barium compounds may be formed.
Fuming sulfuric acid:	
Stability:	White smoke poisonous gas (sulfur trioxide) is emitted in air.
Reactivity:	React violently with water to evolve heat. Diluted sulfuric acid reacts with metals such as iron to form flammable hydrogen gas may cause fire and explosion. May cause ignition in contact with organic materials.
Condition to avoid:	Sunlight, Heat, Moisture
Hazardous decomposition product:	Sulfur oxides may be formed.
Chromic anhydride:	
Stability:	Stable.
Reactivity:	Strong oxidizers. Contact with organic agents or metal powder may cause expose by heat or shock. Contact with organic agents may cause fire.
Condition to avoid:	Sunlight, Heat
Hazardous decomposition product:	Not available
Copper sulfate and 5 hydrate:	
Stability:	Stable. (Gradually decomposed in dry air.)
Reactivity:	Not available
Condition to avoid:	Sunlight, Heat
Hazardous decomposition product:	Copper fumes, sulfur dioxide and sulfur oxide may be formed.

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**SECTION 11 TOXICOLOGICAL INFORMATION**

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Barium Compound:	
Acute toxicity data:	LD50 (orl, rat): 118mg/kg (RTECS) LD50 (iv, rat): 20mg/kg (RTECS) LD50 (orl, mouse): 150mg/kg (RTECS) LD50 (ip, mouse): 56.2mg/kg (RTECS)
Irritation data:	Not available
Chronic toxicity/ Long-term toxicity:	Barium ion irritate to all muscles continuously may cause aberrant muscle contraction or cardiac arrest also cause vomiting, diarrhea and irritate to spinal chord.
Mutagenicity:	Not available
Carcinogen:	Not available
Fuming sulfuric acid:	
Acute toxicity data:	LC50 (ihl, rat): 347ppm/1H (RTECS)
Irritation data:	as Sulfuric acid; Eye; rabbit; 250 $\mu$ g; severe (RTECS)
Mutagenicity:	Not available
Carcinogen:	IARC: Human carcinogen (Group 1) ACGIH: as Sulfuric acid; Suspected human carcinogen (A2)
Chromic anhydride:	
Acute toxicity data:	LD50 (ip, rat): 58400 $\mu$ g/kg (RTECS) LD50 (iv, rat): 9260 $\mu$ g/kg (RTECS) LD50 (orl, mouse): 127mg/kg (RTECS) LD50 (ip, mouse): 14mg/kg (RTECS) LDLo (sc, mouse): 20mg/kg (RTECS) LD50 (iv, mouse): 17100 $\mu$ g/kg (RTECS)

Irritation data: Not available  
Mutagenicity: Not available  
Carcinogen: as Hexavalent chromium;  
NTP: K (Prospective human carcinogen)  
IARC: Group 1 (Human carcinogen)  
ACGIH: A1 (Known to be carcinogen)  
Japan Society for Occupational Health: Group 1 (Human carcinogen)

Copper sulfate and 5 hydrate:

Acute toxicity data: TDLO (orl, human): 272mg/kg  
LDLO (orl, human): 1088mg/kg (RTECS)  
LD50 (orl, rat): 300mg/kg  
LD50 (sc, rat): >2mg/kg (RTECS)  
LD50 (ip, rat): 18.7mg/kg  
LD50 (orl, mouse): 33mg/kg (RTECS)

Irritation data: Not available  
Mutagenicity: Not available  
Carcinogen: Not available

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**SECTION 12** **ECOLOGICAL INFORMATION**

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Barium Compound, Fuming sulfuric acid, Copper sulfate and 5 hydrate:

Not available

Chromic anhydride:

Biodegradability: Not available  
Bioaccumulation Potential: Concentration scale factor (BCF); 4.6-15 (concentration, 100  $\mu$  g/l); 14-21 (concentration, 20  $\mu$  g/l); 11-43 (concentration 5  $\mu$  g/l); 16-72 (concentration 94-242  $\mu$  g/l)  
Aquatic toxicity: LC50 (killifish): 82mg/l/48H

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**SECTION 13** **DISPOSAL CONSIDERATION**

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The pretreatment tube contains 1.65mg of hexavalent chromium.  
Dispose of in accordance with all applicable laws and regulations.  
(Contact local environmental agency for specific rules.)

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**SECTION 14** **TRANSPORT INFORMATION**

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Breakage of tubes caused by drops, high pressure or bends should be avoided.

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**SECTION 15** **REGULATORY INFORMATION**

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Not applicable

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**SECTION 16** **OTHER INFORMATION**

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No specific notes