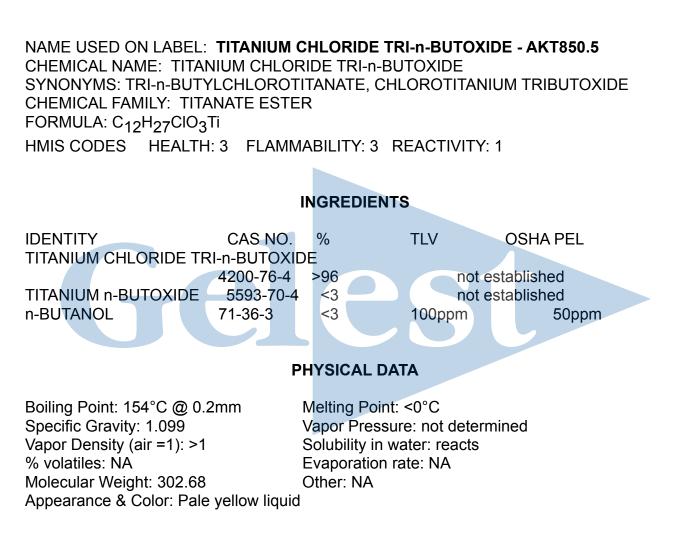
GELEST, INC. 11 East Steel Rd. Morrisville, PA 19067

Phone: (215) 547-1015

MATERIAL SAFETY DATA SHEET EMERGENCY TELEPHONE CHEMTREC: 1-800-424-9300



FIRE & EXPLOSION DATA

Flash Point, COC: >65°C (>150°F) Autoignition Temp.: not determined Flammability Limits- LEL: NA UEL: NA

Extinguishing Media: Water spray or fog, foam, carbon dioxide, dry chemical. Special Fire Fighting Procedures: Avoid eye and skin contact. Do not breathe fumes or inhale vapors.

Unusual Fire and Explosion Hazards: Irritating fumes and organic acid vapors may develop when material is exposed to elevated temperatures or open flame.

Abbreviations: ND: Not Determined, No Data; NA: Not Applicate, KJ.850,5) Dose, LC: Lethal Concentration; H: hour; °: °C unless otherwise stated; mm: millimeters Hg, torr; PEL: permissible exposure level; TWA: time weighted average; TLV: threshold limit value; HMIS: Hazardous Material information System; CAS No.: Chemcial Abstract Service Registration Number Gelest, Inc. © 2008

ENVIRONMENTAL INFORMATION

Spill response: Sweep material and transfer to a suitable container for disposal.

Recommended disposal: Incinerate. Follow all chemical pollution control regulations.

HEALTH HAZARD DATA

Eye Contact: Titanium chloride tri-n-BUToxide will cause immediate or delayed severe eye irritation and may cause corneal ulceration.

Skin contact: May produce irritation or contact dermatitis. Material generates n-butanol on contact with water or moisture in skin, eyes and mucous membranes and has an irritating, dehydrating effect on overexposed tissue. Prompt and thorough washing with soap and water will reduce or eliminate potential dermal effects.

Inhalation: Inhalation may irritate the respiratory tract, cause headache or nausea.

Oral Toxicity: not determined Inhalation Toxicity: not determined Eye Irritation: not determined

SUGGESTED FIRST AID

EYES: In case of contact, immediately flush eyes with flowing water for at least 15 minutes. Get medical attention.

SKIN: Flush with water, then wash with soap and water.

INHALATION: Move exposed individual to fresh air. Administer oxygen if needed. Call a physician.

INGESTION: Never give fluids or induce vomiting if patient is unconscious or having convulsions. To conscious individual give two full cups of water to dilute ingested material. Get medical attention. (*Note to physician: Activated charcoal slurry may be administered. Activated charcoal slurry is prepared by suspending 50 grams of activated charcoal in 400 ml water and mixing thoroughly. Administer 5 ml/kg.*)

REACTIVITY DATA

Stability: Stable

Conditions to avoid: Material decomposes slowly in contact with moist air and rapidly in contact with water liberating n-butanol; TLV(TWA) = 100ppm. Avoid contact with oxidizing agents.

Hazardous decomposition products: n-butanol, hydrogen chloride, organic acid vapors and titanium oxide.

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SPECIAL PROTECTION INFORMATION

Ventilation: Local exhaust is required. Mechanical is recommended. Respiratory Protection: If exposure exceeds TLV, NIOSH approved organic vapor respirator. Eye and Face Protection: Chemical worker's goggles. Do not wear contact lenses. Other Clothing and Equipment: Rubber, neoprene or nitrile gloves. An eyewash and emergency shower should be available. Launder clothing before reuse.

OTHER PRECAUTIONS

For research use only.

Storage and Handling: Store in sealed containers.

TRANSPORTATION	
DOT SHIPPING NAME: CORROSIVE LIQUID, ACIDIC, ORGANIC, N.O.S. (TITANIUM CHLORIDE TRI-n-BUTOXIDE) DOT HAZARD CLASS: 8 DOT LABEL: CORROSIVE DOT ID No: UN3265 PG: III	
Prepared by safety and environmental affairs ISSUE DATE AKT850.5: 4/15/09 SUPERSEDES: none	

The information contained in this document has been gathered from reference materials and/or Gelest, Inc. test data and is to the best knowledge and belief of Gelest, Inc. accurate and reliable. Such information is offered solely for your consideration, investigation and verification. It is not suggested or guaranteed that the hazard precautions or procedures described are the only ones which exist. Gelest, Inc. makes no warranties, express or implied, with respect to the use of such information and assumes no responsibility therefore. Information on this safety data sheet is not intended to constitute a basis for product specifications.

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