



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

DATE OF LAST REVISION: 05-22-96

CHEMICAL IDENTITY

LABEL IDENTITY		BISMUTH TITANIUM OXIDE		
FORMULA		Bi₄Ti₃ Oxide		
CHEMICAL FAMILY		N/A		
HAZARDOUS INGREDIENTS				
BiO₃	79.55%	5.0g/Kg Toxicity	NE OSHA PEL	NE ACGIH TLV
TiO₂	20.45%	N/A	10.0 mg/m³	10.0 mg/m³

Carcinogen defined with no further catagorization, carcinogenic by RECTS criteria.

PHYSICAL AND CHEMICAL PROPERTIES

COLOR, FORM AND ODOR	Odorless white powder
BOILING POINT	Not Determined
VAPOR DENSITY	No inform
VAPOR PRESSURE	No inform
% VOLATILE BY VOLUME (%)	NA
SPECIFIC GRAVITY	Not Determined
EVAPORATION RATE (H20=1)	None
SOLUBILITY IN WATER	Mineral Acids
MELTING POINT	N/A

FIRE AND EXPLOSION HAZARD DATA

FLASH POINT	None
FLAMMABLE LIMITS	None
EXTINGUISHING MEDIA	Use suitable means for extinguishing surrounding fire
SPECIAL FIRE FIGHTING PROCEDURES	Use full protective clothing and NIOSH approved self-contained breathing apparatus
UNUSUAL FIRE & EXPLOSION HAZARDS	None



BISMUTH TITANIUM OXIDE MATERIAL SAFETY DATA SHEET

HEALTH HAZARD INFORMATION

TOXICITY DATA

R&D material, limits not established

ROUTES OF ENTRY

INHALATION: **Remove to fresh air**
SKIN: **Wash thoroughly with soap and water**
INGESTION: **Seek immediate medical attention**
Seek immediate medical attention in all cases

MEDICAL CONDITIONS AGGRAVATED BY OVEREXPOSURE: **No Data**

EFFECTS OF OVEREXPOSURE (acute and chronic):
R&D material, effects not established

CARCINOGENICITY: **None** NTP: **No** IARC MONOGRAPHS: **NO** OSHA REGULATE: **NO**

EMERGENCY FIRST AID PROCEDURES:

INGESTION: **Seek immediate medical attention.**
INHALATION: **Remove to fresh air**
SKIN CONTACT: **Wash thoroughly with soap and water.**
Seek immediate medical attention in all cases.

REACTIVITY DATA

STABILITY

Stable

CONDITIONS TO AVOID

Damp and hot

INCOMPATIBILITY (MATERIALS TO AVOID)

Mineral Acids

HAZARDOUS DECOMPOSITION PRODUCTS

None

HAZARDOUS POLYMERIZATION

None

CONDITIONS TO AVOID

None known



BISMUTH TITANIUM OXIDE MATERIAL SAFETY DATA SHEET

SAFE HANDLING AND USE

STEPS TO BE TAKEN IN CASE MATERIAL IS RELEASED OR SPILLED: **Pick up and place in a suitable container for reclamation or disposal in a method that does not generate dust.**

WASTE DISPOSAL METHOD: **Consult local, state and federal authorities for proper disposal.**

SPECIAL PROTECTIVE INFORMATION

RESPIRATORY PROTECTION	(NIOSH Approved) Consult supplier for limitations
LOCAL EXHAUST MECHANICAL (general)	Preferred, NA
SPECIAL	NA
OTHER	NA
PROTECTIVE GLOVES	Rubber Gloves
EYE PROTECTION	Safety goggles
OTHER PROTECTIVE EQUIPMENT	Lab coat or apron

SPECIAL PRECAUTIONS

PRECAUTIONS TO BE TAKEN IN HANDLING/STORAGE:

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

TRANSPORTATION REQUIREMENTS	DOT CLASS:	Not Classified
	UN NUMBER:	NC
	IMCO CLASS:	NC
	OTHER:	---

PRECAUTIONARY LABELING **NONE**

SPECIAL PRECAUTIONS

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

THE ABOVE INFORMATION IS ACCURATE TO THE BEST OF OUR KNOWLEDGE. HOWEVER, SINCE DATA, SAFETY STANDARDS AND GOVERNMENT REGULATIONS ARE SUBJECT TO CHANGE THE CONDITIONS OF HANDLING AND USE, OR MISUSE ARE BEYOND OUR CONTROL, **ANGSTROM SCIENCES** MAKE NO WARRANTY, EITHER EXPRESSED OR IMPLIED, WITH RESPECT TO THE COMPLETENESS OR CONTINUING ACCURACY OF THE INFORMATION CONTAINED HEREIN AND DISCLAIMS ALL LIABILITY FOR THE RELIANCE THEREON. USER SHOULD SATISFY HIMSELF THAT HE HAS ALL CURRENT DATA RELEVANT TO HIS PARTICULAR USE.

NA = NOT APPLICABLE

ND = NO DATA

NC = NOT CLASSIFIED