

LTS RESEARCH LABORATORIES, INC.  
MATERIAL SAFETY DATA SHEET  
TIN OXIDE – CADMIUM OXIDE

GENERAL

MANUFACTURER/SUPPLIER: LTS RESEARCH LABORATORIES, INC.

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COMPANY'S CITY: ORANGEBURG  
COMPANY'S STATE: NEW YORK  
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DATE MSDS PREPARED: 02/01/10  
DATE MSDS REVISED: 11/05/12

1. IDENTIFICATION

CHEMICAL NAME: TIN OXIDE – CADMIUM OXIDE  
CHEMICAL FORMULA: SnO<sub>2</sub>/CdO  
CAS NUMBER: 18282-10-5/1306-19-0

2. PHYSICAL AND CHEMICAL CHARACTERISTICS

MELTING POINT: N/A  
BOILING POINT: N/A  
DENSITY: N/A  
VAPOR DENSITY: N/A  
VAPOR PRESSURE: N/A  
% VOLATILES: N/A  
SOLUBILITY: INSOLUBLE  
APPEARANCE AND ODOR: BEIGE TARGET, ODORLESS

3. HAZARD IDENTIFICATION

HAZARD DESCRIPTION:  
TIN OXIDE: N/A  
CADMIUM OXIDE: T+ VERY TOXIC  
N DANGEROUS

RISK PHRASES:  
TIN OXIDE: N/A  
CADMIUM OXIDE: 45 MAY CAUSE CANCER  
26 VERY TOXIC BY INHALATION  
48/23/25 DANGER OF SERIOUS DAMAGE BY PROLONGED EXPOSURE  
THROUGH INHALATION AND IF SWALLOWED  
62 POSSIBLE RISK OF IMPAIRED FERTILITY  
68 POSSIBLE RISK OF IRREVERSIBLE EFFECTS  
50/53 VERY TOXIC TO AQUATIC ORGANISMS. MAY CAUSE LONG-  
TERM ADVERSE EFFECTS IN THE AQUATIC ENVIRONMENT  
63 POSSIBLE RISK OF HARM TO THE UNBORN CHILD

HMIS RATINGS:  
TIN OXIDE:  
HEALTH: 1

FLAMMABILITY: 0  
REACTIVITY: 0  
CADMIUM OXIDE:  
HEALTH: 4  
FLAMMABILITY: 0  
REACTIVITY: 1

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#### 4. FIREFIGHTING MEASURES

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FLASH POINT: N/A  
AUTO-IGNITION TEMPERATURE: N/A  
EXPLOSION LIMITS:  
LOWER: N/A  
UPPER: N/A  
EXTINGUISHING MEDIA: PRODUCT IS NOT FLAMMABLE. USE FIREFIGHTING PROCEDURES THAT SUIT THE SURROUNDING FIRE.  
FIREFIGHTING PROCEDURES: FIREFIGHTERS MUST WEAR NIOSH/MSHA APPROVED SELF-CONTAINED BREATHING APPARATUS, FLAME AND CHEMICAL RESISTANT CLOTHING; HATS, BOOTS AND GLOVES.  
SPECIAL HAZARDS: IN CASE OF FIRE, TOXIC METAL OXIDE FUMES MAY BE RELEASED

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#### 5. HEALTH HAAZARD INFORMATION

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ACUTE EFFECTS:  
SKIN: IRRITANT TO SKIN AND MUCOUS MEMBRANES  
EYES: IRRITANT EFFECT  
CHRONIC EFFECTS:  
TIN OXIDE: TIN METAL DUST/FUMES AND INORGANIC TIN COMPOUNDS MAY CAUSE NAUSEA, VOMITING, DIARRHEA, IRRITATION, AND PNEUMOCONIOSIS. MOST INORGANIC TIN COMPOUNDS ARE POORLY ABSORBED BY THE BODY WHEN INGESTED OR INHALED.  
CADMIUM OXIDE: CADMIUM AND CADMIUM COMPOUNDS ARE HIGHLY TOXIC AND EXPERIMENTAL CARCINOGENS. EXPOSURE AFFECTS THE RESPIRATORY TRACT, KIDNEYS, AND LIVER. INGESTION MAY CAUSE NAUSEA, SALIVATION, VOMITING, AND DIARRHEA. INGESTION OR INHALATION OF CADMIUM/CADMIUM COMPOUNDS MAY BE FATAL.

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#### 6. STABILITY

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STABILITY: STABLE  
CONDITIONS TO AVOID: NONE KNOWN  
MATERIALS TO AVOID: ACIDS, OXIDIZING AGENTS, ALKALI METALS, INERHALOGENS, MAGNESIUM  
DANGEROUS REACTIONS: NONE KNOWN  
DANGEROUS PRODUCTS OF DECOMPOSITION: TOXIC METAL OXIDE FUMES

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#### 7. EMERGENCY AND FIRST AID PROCEDURES

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INHALATION: MOVE THE AFFECTED PERSON AWAY FROM THE CONTAMINATED AREA. SUPPLY FRESH AIR AND PROVIDE ARTIFICIAL RESPIRATION IF NECESSARY. SEEK IMMEDIATE MEDICAL ATTENTION.  
SKIN CONTACT: WASH WITH PLENTY OF SOAP AND WATER. SEEK IMMEDIATE MEDICAL ADVICE.

EYE CONTACT: RINSE WITH PLENTY OF WATER IMMEDIATELY FOR SEVERAL MINUTES. SEEK IMMEDIATE MEDICAL ATTENTION  
INGESTION: SEEK IMMEDIATE MEDICAL ATTENTION

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#### 8. HANDLING AND STORAGE

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HANDLING AND STORAGE: STORE IN A COOL, DRY PLACE IN TIGHTLY CLOSED CONTAINERS. ENSURE GOOD VENTILATION. OPEN AND HANDLE CONTAINER WITH CARE.

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#### 9. ACCIDENTAL RELEASE MEASURES

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RESPIRATORY PROTECTION: RESPIRATORY PROTECTIVE DEVICE WHEN HIGH CONCENTRATIONS ARE PRESENT  
EYE PROTECTION: SAFETY GLASSES  
HAND PROTECTION: IMPERVIOUS GLOVES  
BODY PROTECTION: PROTECTIVE WORK CLOTHING

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#### 10. TOXICOLOGICAL INFORMATION

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LD/LC50 VALUES:

TIN OXIDE: ORAL: LD50 >20000 mg/kg (MOUSE)  
LD50 >20000 mg/kg (RAT)

CADMIUM OXIDE: ORAL: LD50 72 mg/kg (RAT)  
INHALATIVE: LC50/1H 45 mg/m<sup>3</sup>/1H (RAT)

THE REGISTRY OF TOXIC EFFECTS OF CHEMICAL SUBSTANCES REPORTS THE FOLLOWING EFFECTS IN LABORATORY ANIMALS:

CADMIUM OXIDE:



SENSE ORGANS AND SPECIAL SENSES: CHANGE IN SENSATION OF SMELL  
KIDNEY, URETER, BLADDER: PROTEINURIA; OTHER CHANGES; CHANGES IN BLADDER WEIGHT  
BLOOD: PIGMENTED OR NUCLEATED RED BLOOD CELLS; OTHER CHANGES  
BIOCHEMICAL: ENZYME INHIBITION, INDUCTION, OR CHANGE IN BLOOD OR TISSUE LEVELS – PHOSPHATASES  
MUSCULOSKELETAL: OSTEOPOROSIS; OTHER CHANGES  
NUTRITIONAL AND GROSS METABOLIC: CHANGES IN CALCIUM LUNGS, THORAX, OR RESPIRATION: CHANGES IN LUNG WEIGHT; FIBROSIS, FOCAL (PNEUMOCONIOSIS); OTHER CHANGES  
ENDOCRINE: CHANGES IN SPLEEN AND THYMUS WEIGHT  
CARDIAC: CHANGES IN HEART WEIGHT, CHANGE IN WEIGHT  
VASCULAR: BP ELEVATION NOT CHARACTERIZED IN AUTONOMIC SECTION  
TUMORIGENIC: TUMORS AT SITE OF APPLICATION; NEOPLASTIC BY RTECS CRITERIA  
REPRODUCTIVE: EFFECTS ON EMBRYO OR FETUS – FETOTOXICITY; FETAL DEATH; MATERNAL/FETAL EXCHANGE  
REPRODUCTIVE: SPECIFIC DEVELOPMENTAL ABNORMALITIES – CARDIOVASCULAR (CIRCULATORY) SYSTEM  
REPRODUCTIVE: EFFECTS ON NEWBORN – WEANING OR LACTATION INDEX; GROWTH STATISTICS; VIABILITY INDEX; BEHAVIORAL  
REPRODUCTIVE: PATERNAL EFFECTS – SPERMATOGENESIS

REPRODUCTIVE: FERTILITY – PRE-IMPLANTATION MORTALITY;  
MATING PERFORMANCE

CARCINOGENICITY:  
TIN OXIDE:

NO CLASSIFICATION DATA ON CARCINOGENIC PROPERTIES OF THIS MATERIAL IS AVAILABLE FROM THE EPA, IARC, NTP, OSHA, OR ACGIH.

CADMIUM OXIDE:

EPA-B1: PROBABLE HUMAN CARCINOGEN, LIMITED EVIDENCE OF CARCINOGENICITY FROM EPIDEMIOLOGIC STUDIES

IARC-1: CARCINOGENIC TO HUMANS – SUFFICIENT EVIDENCE OF CARCINOGENICITY

NTP-1: KNOWN TO BE A CARCINOGEN – SUFFICIENT EVIDENCE OF CARCINOGENICITY

ACGIH A2: SUSPECTED HUMAN CARCINOGEN – AGENT IS CARCINOGENIC AT DOSE LEVELS, BY ROUTES OF ADMINISTRATION, AS SITES OF HISTOLOGIC TYPES, OR BY MECHANISMS CONSIDERED RELEVANT TO WORKER EXPOSURE. AVAILABLE EPIDEMIOLOGIC STUDIES ARE CONFLICTING OR INSUFFICIENT TO CONFIRM AN

ADDITIONAL INFORMATION:

TO THE BEST OF OUR KNOWLEDGE THE ACUTE AND CHRONIC TOXICITY OF THIS SUBSTANCE IS NOT FULLY KNOWN.

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#### 11. TRANSPORT INFORMATION

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UN NUMBER:	2570
HAZARD CLASS:	6.1
PROPER SHIPPING NAME:	CADMIUM COMPOUND
ADR//RID CLASS:	6.1
IMDG CLASS:	6.1
ICAO/IATA CLASS:	6.1

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#### 12. OTHER INFORMATION

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THIS SAFETY DATA SHEET SHOULD BE USED IN CONJUNCTION WITH TECHNICAL SHEETS. IT DOES NOT REPLACE THEM. THE INFORMATION GIVEN IS BASED ON OUR KNOWLEDGE OF THIS PRODUCT, AT THE TIME OF PUBLICATION. IT IS GIVEN IN GOOD FAITH. THE ATTENTION OF THE USER IS DRAWN TO THE POSSIBLE RISKS INCURRED BY USING THE PRODUCT FOR ANY OTHER PURPOSE OTHER THAN THAT FOR WHICH IT WAS INTENDED. THIS DOES NOT IN ANY WAY EXCUSE THE USER FROM KNOWING AND APPLYING ALL THE REGULATIONS GOVERNING HIS ACTIVITY. IT IS THE SOLE RESPONSIBILITY OF THE USER TO TAKE ALL PRECAUTIONS REQUIRED IN HANDLING THE PRODUCT.

THE AIM OF THE MANDATORY REGULATIONS MENTIONED IS TO HELP THE USER TO FULFILL HIS OBLIGATIONS REGARDING THE USE OF HAZARDOUS PRODUCTS.