



LTS RESEARCH LABORATORIES, INC.
MATERIAL SAFETY DATA SHEET
LEAD VANADIUM OXIDE

1. PRODUCT AND COMPANY IDENTIFICATION

TRADE NAME: LEAD VANADIUM OXIDE
CHEMICAL FORMULA: PbO-V₂O₃

MANUFACTURER/SUPPLIER: LTS RESEARCH LABORATORIES, INC.
COMPANY'S STREET: 37 RAMLAND ROAD
COMPANY'S CITY: OANGEBURG
COMPANY'S STATE: NEW YORK
COMPANY'S ZIP CODE: 10962

EMERGENCY CHEMTREC #: 800-262-8200
COMPANY'S EMERGENCY TEL. #: 800-424-9300 (LOCAL)
703-527-3887 (INTERNATIONAL)
COMPANY'S TEL #: 845-494-2940

RECOMMENDED USE: SCIENTIFIC RESEARCH AND DEVELOPMENT

2. HAZARDS IDENTIFICATION

SIGNAL WORD: DANGERWARNING



HAZARD SYMBOLS: HARMFUL IF SWALLOWED OR INHALED
SUSPECTED OF CAUSING GENETIC DEFECTS
MAY DAMAGE FERTILITY OR UNBORN CHILD
DAMAGES ORGANS THROUGH REPEATED OR PROLONGED EXPOSURE
HARMFUL TO AQUATIC ORGANISMS AND ENVIRONMENT

HMS HEALTH RATINGS (0-4):
HEALTH: 2
FLAMMABILITY: 0
REACTIVITY: 1

3. COMPOSITION

CHEMICAL FAMILY: METAL OXIDE
ADDITIONAL NAMES: LEAD VANADATE
LEAD OXIDE (PbO):
PERCENTAGE: 0-100 wt%
CAS #: 1317-36-8
VANADIUM OXIDE (V₂O₃):
PERCENTAGE: 0-100 wt%
CAS #: 1314-62-1

4. FIRST AID PROCEDURES

IMPORTANT SYMPTOMS: NONE
SPECIAL TREATMENT: NONE
GENERAL TREATMENT: SEEK MEDICAL ATTENTION IF SYMPTOMS PERSIST.
INHALATION: REMOVE VICTIM TO FRESH AIR GIVE OXYGEN IF BREATHING IS DIFFICULT.

INGESTION: GIVE 1-2 GLASSES OF MILK OR WATER AND INDUCE VOMITING. NEVER INDUCE VOMITING OR GIVE ANYTHING BY MOUTH TO AN UNCONSCIOUS PERSON.

SKIN: WASH AFFECTED AREA WITH MILD SOAP AND WATER. REMOVE CONTAMINATED CLOTHING.

EYES: FLUSH EYES WITH WATER, LIFTING UPPER AND LOWER EYELIDS, FOR 20 MINUTES.

5. FIRE AND EXPLOSION HAZARDS DATA

FLAMMABILITY: NON-FLAMMABLE

FLASH POINT: N/A

AUTOIGNITION TEMPERATURE: N/A

EXTINGUISHING MEDIA: USE SUITABLE EXTINGUISHING AGENT FOR SURROUNDING MATERIAL AND TYPE OF FIRE.

SPEC. FIRE FIGHTING PROCEDURE: USE FULL-FACE, SELF-CONTAINED BREATHING APPARATUS WITH FULL PROTECTIVE CLOTHING TO PREVENT CONTACT WITH SKIN AND EYES.

UNUSUAL FIRE HAZARDS: WHEN HEATED TO DECOMPOSITION, MAY EMIT TOXIC METAL OXIDE FUMES.

6. ACCIDENTAL RELEASE MEASURES

IF MATERIAL IS RELEASED/ SPILLED: WEAR APPROPRIATE RESPIRATORY AND PROTECTIVE EQUIPMENT SPECIFIED IN SPECIAL PROTECTION INFORMATION. ISOLATE SPILL AREA AND PROVIDE VENTILATION. VACUUM UP SPILL USING A HIGH EFFICIENCY PARTICULATE ABSOLUTE (HEPA) AIR FILTER AND PLACE IN A CLOSED CONTAINER FOR DISPOSAL. TAKE CARE NOT TO RAISE DUST.

ENVIRONMENTAL PRECAUTIONS: ISOLATE RUNOFF TO PREVENT ENVIRONMENTAL POLLUTION.

7. HANDLING AND STORAGE

HANDLING CONDITIONS: WASH THOROUGHLY AFTER HANDLING.

HMS PROTECTIVE EQUIPMENT: GLASSES, GLOVES, APRON, DUST RESPIRATOR

STORAGE CONDITIONS: STORE IN A COOL DRY PLACE IN A TIGHTLY SEALED CONTAINER.

WORK/HYGIENIC MAINTENANCE: DO NOT USE TOBACCO OR FOOD IN WORK AREA. WASH THOROUGHLY BEFORE EATING AND SMOKING. DO NOT BLOW DUST OFF CLOTHING OR SKIN WITH COMPRESSED AIR.

VENTILATION: PROVIDE SUFFICIENT VENTILATION TO MAINTAIN CONCENTRATION AT OR BELOW TLV.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

OSHA PEL: 0.05 mg/m³ AS LEAD

ACGIH TLV: 0.05 mg/m³ AS VANADIUM OXIDE OR LEAD

SPECIAL EQUIPMENT: NONE

RESPIRATORY PROTECTION: NIOSH APPROVED DUST/MIST RESPIRATOR

PROTECTIVE GLOVES: RUBBER GLOVES

EYE PROTECTION: SAFETY GLASSES

BODY PROTECTION: PROTECTIVE WORK CLOTHING. WEAR CLOSE-TOED SHOES AND LONG SLEEVES/PANTS.

OTHER: N/A

9. PHYSICAL AND CHEMICAL CHARACTERISTICS

COLOR	VARIOUS COLORS
FORM:	POWDER, PIECES, PELLETS, GRANULES, SPUTTERING TARGET
ODOR:	ODORLESS
WATER SOLUBILITY:	VANADIUM OXIDE IS SLIGHTLY SOLUBLE IN WATER (8 g/l)
BOILING POINT:	N/A
MELTING POINT:	690 °C AS V ₂ O ₅
DENSITY:	VARIES
MOLECULAR WEIGHT:	VARIES

10. REACTIVITY

STABILITY:	STABLE
INCOMPATIBILITY:	STRONG OXIDIZING AGENTS, ACIDS
HAZ. DECOMPOSITION PRODUCTS:	METAL OXIDE FUME
HAZARDOUS POLYMERIZATION:	WILL NOT OCCUR

11. TOXICOLOGICAL INFORMATION

POTENTIAL HEALTH EFFECTS:	
EXTERNAL CONTACT:	MAY CAUSE ABRASIVE IRRITATION
INTERNAL CONTACT:	HARMFUL BY INGESTION OR INHALATION
CHRONIC EFFECTS:	CAUSES DAMAGE TO THE LUNG, LIVER, HEART, BLOOD TISSUE, BRAIN, ENDOCRINE SYSTEM. SUSPECTED OF CAUSING GENETIC DEFECTS. SUSPECTED OF DAMAGING FERTILITY AND UNBORN CHILD.
ROUTES OF ENTRY:	INHALATION AND INGESTION
SIGNS & SYMPTOMS OF EXPOSURE:	N/A
MEDICAL CONDITIONS AGGRAVATED BY EXPOSURE:	N/A
LD50:	N/A
CARCINOGEN:	
NTP:	YES
IARC MONOGRAPHS:	YES
OSHA REGULATED:	NO

12. ECOLOGICAL INFORMATION

ECOLOGICAL EFFECTS:	DANGER TO DRINKING WATER, EVEN IN EXTREMELY SMALL QUANTITIES. TOXIC TO AQUATIC ORGANISMS.
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13. DISPOSAL CONSIDERATIONS

DISPOSE OF IN ACCORDANCE WITH LOCAL, STATE AND FEDERAL REGULATIONS.

14. TRANSPORTATION DATA



HAZARD CLASS:	6.1 TOXIC SUBSTANCES
PACKING GROUP:	III
UN NUMBER:	UN2862
UN PROPER SHIPPING NAME:	N/A
ROAD ADR/RID CLASS:	6.1 (T5)
AIR IATA CLASS:	6.1
MARITIME IMDG CLASS:	6.1
ENVIRONMENTAL HAZARDS:	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID

15. REGULATORY INFORMATION

SEC.302 (EHS):	NO
SEC.304 RQ:	NO
SEC.313:	YES

16. OTHER INFORMATION

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.

DATE MSDS PREPARED:	07/11/14
DATE LAST REVISED:	N/A