

LTS RESEARCH LABORATORIES, INC.
MATERIAL SAFETY DATA SHEET
NEODYMIUM TITANATE

1. PRODUCT AND COMPANY IDENTIFICATION

TRADE NAME: NEODYMIUM TITANATE
CHEMICAL FORMULA: $\text{Nd}_2\text{Ti}_2\text{O}_7$

MANUFACTURER/SUPPLIER: LTS RESEARCH LABORATORIES, INC.
COMPANY'S STREET: 37 RAMLAND ROAD
COMPANY'S CITY: ORANGEBURG
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

HAZARD SYMBOLS: NONE
HMIS HEALTH RATINGS (0-4):
HEALTH: 1
FLAMMABILITY: 0
REACTIVITY: 1
CARCINOGEN: N/A

3. COMPOSITION

CHEMICAL FAMILY: METAL OXIDE
ADDITIONAL NAMES: NEODYMIUM (III) TITANATE,
NEODYMIUM TITANIUM OXIDE
NEODYMIUM TITANATE ($\text{Nd}_2\text{Ti}_2\text{O}_7$):
PERCENTAGE: 100 wt%
CAS #: 12058-94-5

4. FIRST AID PROCEDURES

IMPORTANT SYMPTOMS: N/A
SPECIAL TREATMENT: NONE
INHALATION: SUPPLY FRESH AIR. IF REQUIRED, PROVIDE ARTIFICIAL
RESPIRATION. KEEP PATIENT WARM. SEEK IMMEDIATE
MEDICAL ADVICE.
INGESTION: SEEK MEDICAL TREATMENT.
SKIN: IMMEDIATELY WASH WITH WATER AND SOAP AND RINSE
THOROUGHLY. SEEK IMMEDIATE MEDICAL ADVICE.
EYES: RINSE OPENED EYE FOR SEVERAL MINUTES UNDER
RUNNING WATER. THEN CONSULT A DOCTOR.

5. FIRE AND EXPLOSION HAZARDS DATA

FLASH POINT: N/A
AUTOIGNITION TEMPERATURE: N/A
FLAMMABLE LIMITS:
UPPER: N/A
LOWER: N/A
EXTINGUISHING MEDIA: PRODUCT IS NOT FLAMMABLE. USE FIRE FIGHTING MEASURES THAT SUIT THE SURROUNDING FIRE.
UNUSUAL FIRE & EXPLOSION HAZ: IF THIS PRODUCT IS INVOLVED IN A FIRE, THE FOLLOWING CAN BE RELEASED: METAL OXIDE FUME

6. ACCIDENTAL RELEASE MEASURES

IF MATERIAL IS RELEASED/ SPILLED: WEAR PROTECTIVE EQUIPMENT. KEEP UNPROTECTED PERSONS AWAY. ENSURE ADEQUATE VENTILATION.
ENVIRONMENTAL PRECAUTIONS: DO NOT ALLOW MATERIAL TO BE RELEASED TO THE ENVIRONMENT WITHOUT PROPER GOVERNMENTAL PERMITS.
DO NOT ALLOW PRODUCT TO REACH SEWAGE SYSTEM OR ANY WATER COURSE.
DO NOT ALLOW TO PENETRATE THE GROUND/SOIL.
METHODS AND MATERIAL FOR CONTAINMENT AND ENSURE ADEQUATE VENTILATION

7. HANDLING AND STORAGE

HANDLING CONDITIONS: WASH THOROUGHLY AFTER HANDLING.
HMIS PROTECTIVE EQUIPMENT: GLASSES, GLOVES, DUST RESPIRATOR
STORAGE CONDITIONS: STORE IN A COOL DRY PLACE IN A TIGHTLY SEALED CONTAINER.
WORK/HYGIENIC/MAINTENANCE: IMPLEMENT ENGINEERING AND WORK PRACTICE CONTROLS TO REDUCE AND MAINTAIN CONCENTRATION OF EXPOSURE AT LOW LEVELS. USE GOOD HOUSEKEEPING AND SANITATION PRACTICES. 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: TO MAINTAIN CONCENTRATION AT OR BELOW TLV.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

SEC.302 (EHS): NO
SEC.304 (RQ): N/A
SEC.313 (SARA): NO
EXPOSURE LIMITS: NO CONTROLS REQUIRED
CARCINOGEN: N/A
SPECIAL EQUIPMENT: NONE
RESPIRATORY PROTECTION: NIOSH APPROVED DUST, MIST RESPIRATOR.
PROTECTIVE GLOVES: IMPERVIOUS GLOVES
EYE PROTECTION: SAFETY GLASSES

OTHER:

PROPERLY OPERATING CHEMICAL FUME HOOD DESIGNED FOR HAZARDOUS CHEMICALS AND HAVING AN AVERAGE FACE VELOCITY OF AT LEAST 100 FEET PER MINUTE.

9. PHYSICAL AND CHEMICAL CHARACTERISTICS

APPEARANCE AND ODOR:	LIGHT GREY, POWDER, GRANULES, SPUTTERING TARGET
ODOR:	N/A
BOILING POINT:	N/A
MELTING POINT:	N/A
SPECIFIC GRAVITY (H ₂ O=1):	N/A
MOLECULAR WEIGHT:	496.2 g/mol
VAPOR DENSITY (AIR=1):	N/A
VAPOR PRESSURE (Pa):	N/A
EVAPORATION RATE:	N/A
% VOLATILES BY WEIGHT:	N/A
SOLUBILITY IN H ₂ O:	INSOLUBLE

10. REACTIVITY

STABILITY:	STABLE
INCOMPATIBILITY:	OXIDIZING AGENTS
HAZ. DECOMPOSITION PRODUCTS:	NONE KNOWN
HAZARDOUS POLYMERIZATION:	WILL NOT OCCUR

11. TOXICOLOGICAL INFORMATION

ROUTES OF ENTRY:	INHALATION, SKIN, EYES, AND INGESTION.
POTENTIAL HEALTH EFFECTS:	LANTHANONS CAN CAUSE DELAYED BLOOD CLOTTING LEADING TO HEMORRHAGES. EXPOSURE MAY ALSO LEAD TO SENSITIVITY TO HEAT, ITCHING, INCREASED AWARENESS OF ODOR AND TASTE, AND LIVER DAMAGE. TITANIUM COMPOUNDS ARE CONSIDERED PHYSIOLOGICALLY INERT. THERE ARE NO REPORTED CASES IN THE LITERATURE WHERE TITANIUM AS SUCH HAS CAUSED HUMAN INTOXICATION.
TARGET ORGANS:	MAY AFFECT THE RESPIRATORY AND CENTRAL NERVOUS SYSTEMS. MAY CAUSE IRRITATION TO EYES, SKIN, THROAT IF EXPOSED.
MEDICAL CONDITIONS GENERALLY AGGRAVATED BY EXPOSURE:	N/A

12. ECOLOGICAL INFORMATION

ECOLOGICAL DATA IS NOT AVAILABLE.

GENERAL NOTES:	DO NOT ALLOW MATERIAL TO BE RELEASED TO THE ENVIRONMENT WITHOUT PROPER GOVERNMENTAL PERMITS. DO NOT ALLOW UNDILUTED PRODUCT OR LARGE QUANTITIES OF IT TO REACH GROUND WATER, WATER COURSE OR SEWAGE SYSTEM. AVOID TRANSFER INTO THE ENVIRONMENT.
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13. DISPOSAL CONSIDERATIONS

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

14. TRANSPORTATION DATA

UN NUMBER:	N/A
UN PROPER SHIPPING NAME:	N/A
HAZARD CLASS:	N/A
PACKING GROUP:	N/A
ADR//RID CLASS:	N/A
IMDG CLASS:	N/A
AIR TRAN. ICAO/IATA CLASS:	N/A
MARITIME TRAN. IMDG CLASS:	N/A

15. REGULATORY INFORMATION

NO SPECIFIC REGULATIONS ARE IMPOSED ON THIS MATERIAL.

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:	07/27/11
DATE LAST REVISED:	06/04/14