

LTS RESEARCH LABORATORIES, INC.
MATERIAL SAFETY DATA SHEET
TANTALUM NICKEL ALLOY

1. PRODUCT AND COMPANY IDENTIFICATION

TRADE NAME: TANTALUM NICKEL ALLOY
CHEMICAL FORMULA: Ta-Ni

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

SIGNAL WORD: DANGER



HAZARD SYMBOLS: (HAZARDOUS ONLY IN POWDER FORM)
TOXIC
HIGHLY FLAMMABLE
CHRONIC HEALTH EFFECTS
HARMFUL TO AQUATIC ORGANISMS/ENVIRONMENT

HMIS HEALTH RATINGS (0-4):
HEALTH: 1
FLAMMABILITY: 3
REACTIVITY: 1
CARCINOGEN: POSSIBLY

3. COMPOSITION

CHEMICAL FAMILY: METAL ALLOY
ADDITIONAL NAMES: N/A

TANTALUM METAL (Ta):
PERCENTAGE: 0-100 wt%
CAS #: 7440-25-7

NICKELMETAL (Ni):
PERCENTAGE: 0-100 wt%
CAS #: 7440-02-0

4. FIRST AID PROCEDURES

IMPORTANT SYMPTOMS: INHALATION: MAY CAUSE A RED, DRY THROAT, COUGHING
AND SHORTNESS OF BREATH
SPECIAL TREATMENT: NONE

INHALATION:	REMOVE VICTIM TO FRESH AIR, KEEP WARM AND QUIET, GIVE OXYGEN IF BREATHING IS DIFFICULT AND SEEK MEDICAL ATTENTION IF SYMPTOMS PERSIST.
INGESTION:	GIVE 1-2 GLASSES OF MILK OR WATER AND INDUCE VOMITING, SEEK MEDICAL ATTENTION IF SYMPTOMS PERSIST. NEVER INDUCE VOMITING OR GIVE ANYTHING BY MOUTH TO AN UNCONSCIOUS PERSON.
SKIN:	REMOVE CONTAMINATED CLOTHING, BRUSH MATERIAL OFF SKIN, WASH AFFECTED AREA WITH MILD SOAP AND WATER, AND SEEK MEDICAL ATTENTION IF SYMPTOMS PERSIST.
EYES:	FLUSH EYES WITH LUKEWARM WATER, LIFTING UPPER AND LOWER EYELIDS, FOR AT LEAST 20 MINUTES. SEEK MEDICAL ATTENTION IF SYMPTOMS PERSIST.

5. FIRE AND EXPLOSION HAZARDS DATA

FLAMMABILITY:	NOT FLAMMABLE EXCEPT AS POWDER
EXTINGUISHING MEDIA:	USE DRY SAND OR OTHER DRY EXTINGUISHING AGENTS SUITABLE FOR METAL FIRES. DO NOT USE WATER OR CARBON DIOXIDE.
SPEC. FIRE FIGHTING PROCEDURE:	USE FULL-FACE, SELF-CONTAINED BREATHING APPARATUS WITH FULL PROTECTIVE CLOTHING TO PREVENT CONTACT WITH SKIN AND EYES. FUMES FROM FIRE IS HAZARDOUS. ISOLATE RUNOFF TO PREVENT ENVIRONMENTAL POLLUTION.
UNUSUAL FIRE & EXPLOSION HAZ:	WHEN HEATED TO DECOMPOSITION, MAY EMIT TOXIC METAL 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:	MAY BE HARMFUL TO AQUATIC ENVIRONMENTS, ESPECIALLY IN POWDER FORM. TAKE CARE TO PREVENT RUNOFF.

7. HANDLING AND STORAGE

HANDLING CONDITIONS:	WASH THOROUGHLY AFTER HANDLING.
HMS 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

TANTALUM (Ta):	
OSHA PEL:	5 mg/m ³
ACGIH/TLV:	5mg/m ³

NICKEL (Ni):
OSHA PEL: 0.5 mg/m³
ACGIH/TLV: 0.2 mg/m³

SPECIAL EQUIPMENT: NONE
RESPIRATORY PROTECTION: NIOSH APPROVED DUST, MIST RESPIRATOR
PROTECTIVE GLOVES: RUBBER GLOVES
EYE PROTECTION: SAFETY GLASSES
OTHER: PROTECTIVE GEAR SUITABLE TO PREVENT CONTAMINATION.

9. PHYSICAL AND CHEMICAL CHARACTERISTICS

COLOR: METALLIC GREY
FORM: POWDER, PIECES, PELLETS, GRANULES, SPATTERING TARGET
ODOR: ODORLESS
SOLUBILITY IN H₂O: INSOLUBLE
BOILING POINT: N/A
MELTING POINT: 1453 °C (Ni), 3017 °C (Ta)
INTERMEDIATES BELOW 50at% Ta ARE CALCULATED TO FALL NEAR THE NICKEL MELTING POINT. INTERMEDIATES BETWEEN 66at% AND 80at% Ta ARE CALCULATED TO BEGIN MELTING AT ~2000 °C.
SPECIFIC GRAVITY (H₂O=1): N/A g/cc
MOLECULAR WEIGHT: N/A g/mol

10. REACTIVITY

STABILITY: STABLE
INCOMPATIBILITY: STRONG ACIDS, STRONG OXIDIZERS
HAZ. DECOMPOSITION PRODUCTS: HYDROGEN GAS (EXPLOSIVE) IN THE CASE OF ACIDS, METAL OXIDE FUME IN THE CASE OF OXIDIZERS
HAZARDOUS POLYMERIZATION: WILL NOT OCCUR

11. TOXICOLOGICAL INFORMATION

NICKEL: UNDER NORMAL HANDLING AND USE, EXPOSURE TO MASSIVE FORMS OF NICKEL PRESENTS FEW HEALTH HAZARDS. IF, HOWEVER, MASSIVE FORMS ARE CONVERTED TO PARTICULATES, THEN BOTH ACUTE AND CHRONIC HEALTH HAZARDS ARE POSSIBLE. POISON BY INGESTION, INTRATRACHEAL, INTRAPERITONEAL, SUBCUTANEOUS AND INTRAVENOUS ROUTES. AN EXPERIMENTAL TERATOGEN. INGESTION OF SOLUBLE SALTS CAUSES NAUSEA, VOMITING AND DIARRHEA. HYPERSENSITIVITY TO NICKEL IS COMMON AND CAN CAUSE ALLERGIC CONTACT DERMATITIS, PULMONARY ASTHMA, CONJUNCTIVITIS AND INFLAMMATORY REACTIONS AROUND NICKEL CONTAINING MEDICAL IMPLANTS AND PROSTHESIS (SAX, DANGEROUS PROPERTIES OF INDUSTRIAL MATERIALS, EIGHTH EDITION).

ROUTES OF ENTRY: INHALATION, SKIN, EYES

POTENTIAL HEALTH EFFECTS: MAY CAUSE ABRASIVE IRRITATION TO EXPOSED AREA, INCLUDING EYES, SKIN, AND RESPIRATORY SYSTEM. LOW ORAL TOXICITY.

MEDICAL CONDITIONS GENERALLY AGGRAVATED BY EXPOSURE: RESPIRATORY DISEASE, SKIN DISORDER.
SIGNS & SYMPTOMS OF EXPOSURE: INHALATION: MAY CAUSE A RED, DRY THROAT, COUGHING AND SHORTNESS OF BREATH.

CARCINOGEN:
NTP: NO
IARC MONOGRAPHS: NO
OSHA REGULATED: NO
OTHER: NICKEL IS A CONFIRMED CARCINOGEN WITH
EXPERIMENTAL CARCINOGENIC, NEOPLASTIGENIC,
TUMORIGENIC AND TERATOGENIC DATA.

12. ECOLOGICAL INFORMATION

ECOLOGICAL DATA IS NOT AVAILABLE.

13. DISPOSAL CONSIDERATIONS

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

14. TRANSPORTATION DATA

NOTES: APPLIES TO POWDER ONLY, NOT TARGETS, PELLETS,
PIECES, GRANULES
UN NUMBER: 3089
UN PROPER SHIPPING NAME: METAL POWDER, FLAMMABLE, N.O.S.
HAZARD CLASS: 4.1
PACKING GROUP: II
ROAD TRAN. ADR//RID CLASS: 4.1 (F3) FLAMMABLE SOLIDS, SELF-REACTIVE SUBSTANCES
AND SOLID DESENSITISED EXPLOSIVES
AIR TRAN. ICAO/IATA CLASS: 4.1
MARITIME TRAN. IMDG CLASS: 4.1

15. REGULATORY INFORMATION

SEC.302 (EHS): YES
SEC.304 (RQ): N/A
SEC.313 (SARA): NO

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: 06/17/14
DATE LAST REVISED: N/A