

MATERIAL SAFETY DATA SHEET

May be used to comply with

OSHA's Hazard Communication Standard

29 CFR 1910.1200. Standard must be consulted for specific requirements.

Identity (As used on Label and List) NICKEL ANTI-SEIZE TAPE
--

Section I

Manufacture's Name UNASCO P/L	Emergency Telephone Number NONE AVAILABLE
Address (Number, Street, State and ZIP Code) 5/921 TRANSPORT WAY PETALUMA CA 94954	Telephone Number for Information (TEL): 707 763 5413 (TOLL FREE): 1 800 773 5413 (FAX): 707 763 5487
Date Prepared APRIL 2005	Prepared by DAVID BENTLEY – PRODUCT MANAGER

Section II – Hazardous Ingredients/Identity Information

Ingredients	OSHA PEL	CAS Number	ACGIH TLV
Polytetrafluoroethylene	N/A	9002-84-0	N/A
Petroleum Solvent	N/A	64742-47-8	N/A
Pigment	N/A	N/A	N/A
Nickel	N/A	N/A	N/A

Section III – Physical/Chemical Characteristics

Boiling Point N/A	Specific Gravity (H ₂ O = 1) 2.7
Vapor Pressure (mm Hg) N/A	Melting Point N/A
Vapor Density (air = 1) N/A	Evaporation Rate (Butyl Acetate = 1) N/A
Solubility in Water INSOLUBLE	Appearance and Odor METALLIC LOOKING FILM/ODORLESS

Section IV – Fire and Explosion Hazard Data

Flash Point (Method Used) N/A	Flammable Limits N/A	LEL	UEL
Extinguishing Media ANY STANDARD MEDIUM			
Special Fire Fighting Procedures COMBUSTIBLE SOLID. WILL BURN IF IN CONTACT WITH FLAME. COMBUSTION CEASES WHEN FLAME IS REMOVED. DECOMPOSITION ON HEATING ABOVE 260°C RESULTS IN THE EMISSION OF TOXIC FUMES. FIRE FIGHTERS TO WEAR SELF CONTAINED BREATHING APPARATUS IF THERE IS A RISK OF EXPOSURE TO PRODUCTS OF COMBUSTION AND DECOMPOSITION.			
Unusual Fire and Explosion Hazards TOXIC FUMES GIVEN OFF ABOVE 260°C.			

Section V – Reactivity Data

Stability:	Stable <input type="checkbox"/> Unstable <input type="checkbox"/>	Conditions to Avoid TEMPERATURES ABOVE 260°C WITHOUT ADEQUATE VENTILATION.
Incompatibility (Materials to Avoid) ALKALI METALS, EXTREMELY POTENT OXIDISERS E.G. FLUORINE, CHLORINE TRI-FLUORIDE, 80% NaOH OR KOH, METAL HYDRIDES SUCH AS BORANES (E.G. B ₂ H ₆) ALUMINIUM CHLORIDE, AMMONIA, CERTAIN AMINES (R-NH ₂) IMINES (RH-NH) AND 70% NITRIC ACID AT TEMPERATURES NEAR 260°C. DO NOT USE ON OXYGEN LINES. CONCENTRATED ACIDS MIGHT REACT WITH METAL POWDERS DISPERSED THROUGH THE TAPE.		
Hazardous Polymerization:	May Occur <input type="checkbox"/> Will Not Occur <input type="checkbox"/>	Conditions to Avoid TEMPERATURE ABOVE 260°C.

Section VI – Health Hazard Data

Health Hazards (Acute)															
Swallowed? NO ADVERSE EFFECT KNOWN															
Eye? MAY CAUSE PHYSICAL IRRITATION TO THE EYES															
Skin? NO ADVERSE EFFECT KNOWN															
Inhalation? THE MATERIAL IS NOT NORMALLY AN INHALATION HAZARD AT TEMPERATURES BELOW 260°C AS IT REMAINS AN INERT SOLID. HOWEVER, EXPOSURE TO THERMAL DEGRADATION PRODUCTS AT TEMPERATURES ABOVE 260°C OR FUMES FROM TOBACCO CONTAMINATED WITH PARTICLES OF THE PRODUCT MAY RESULT IN “POLYMER FUME FEVER” OR INFLUENZA-LIKE SYMPTOMS (CHILLS, HEADACHES, DIFFICULTY IN BREATHING AND FEVER). SYMPTOMS MAY APPEAR SEVERAL HOURS AFTER EXPOSURE BUT WILL DISAPPEAR WITHIN 24-48 HOURS. THERE ARE EXPOSURE STANDARDS FOR DECOMPOSITION PRODUCTS.															
<table style="width: 100%; border: none;"> <tr> <td style="width: 20%;"></td> <td colspan="2" style="text-align: center;">TWA</td> <td colspan="2" style="text-align: center;">STEL</td> </tr> <tr> <td style="text-align: center;">HF*</td> <td style="text-align: center;">ppm</td> <td style="text-align: center;">mg/m³</td> <td style="text-align: center;">ppm</td> <td style="text-align: center;">mg/m³</td> </tr> <tr> <td></td> <td style="text-align: center;">3</td> <td style="text-align: center;">2.6</td> <td colspan="2" style="text-align: center;">PEAK LIMITATION</td> </tr> </table>		TWA		STEL		HF*	ppm	mg/m ³	ppm	mg/m ³		3	2.6	PEAK LIMITATION	
	TWA		STEL												
HF*	ppm	mg/m ³	ppm	mg/m ³											
	3	2.6	PEAK LIMITATION												
*MEASURED AS AN INSPIRABLE FACTION															
CARBONYL FLUORIDE IS THE MAIN DECOMPOSITION PRODUCT FORMED WHEN PTFE IS SUBJECTED TO EXTENDED EXPOSURE AT NORMAL SINTERING TEMPERATURES (400°C). CARBONYL FLUORIDE IS IMMEDIATELY CONVERTED TO HIGHLY CORROSIVE HYDROGEN FLUORIDE IN THE PRESENCE OF MOIST AIR.															
PEAK LIMITATION – A CEILING CONCENTRATION WHICH SHOULD NOT BE EXCEEDED OVER A MEASUREMENT PERIOD WHICH SHOULD BE AS SHORT AS POSSIBLE BUT NOT EXCEEDING 15 MINUTES.															
TLV – THRESHHOLD LIMIT VALUE.															
TWA – (THE TIME WEIGHTED AVERAGE) – AIRBORNE CONCENTRATIONS OVER AN EIGHT HOUR WORKING DAY FOR A FIVE DAY WORKING WEEK OVER AN ENTIRE WORKING LIFE															
STEL – (SHORT TERM EXPOSURE LIMIT) – THE AVERAGE AIRBORNE CONCENTRATION OVER A 15 MINUTE PERIOD WHICH SHOULD NOT BE EXCEEDED AT ANY TIME DURING A NORMAL 8 HOUR WORKING DAY. ACCORDING TO CURRENT KNOWLEDGE THESE CONCENTRATIONS SHOULD NOT IMPAIR THE HEALTH OF, NOR CAUSE UNDUE DISCOMFORT TO, HEALTHY WORKERS.															

<p>Health Hazards (Chronic) NO INFORMATION IS AVAILABLE ON THE PRODUCT BUT THERE IS DATA ON NICKEL</p>
<p>Skin? REPEATED CONTACT WITH METALLIC NICKEL CAN CAUSE SENSITIVITY AND ALLERGIC SKIN RASHES</p>
<p>Toxicity THERE IS NO INFORMATION ON THE PRODUCT BUT THERE IS DATA ON ITS INGREDIENTS. Polytetrafluoroethylene (PTFE): NO LD50 DATA IS AVAILABLE ON PTFE. NO TOXICITY WAS OBSERVED IN MALE/FEMALE RATS FED PTFE (UP TO 25%) FOR 90 DAYS. LOCAL SARCOMAS WERE INDUCED IN MICE AND RATS IMPLANTED SUBCUTANEOUSLY OR INTRAPERITONEAL-LY WITH PTFE. HOWEVER, THIS IS NOT CONSIDERED RELEVANT TO NORMAL INDUSTRIAL USAGE. Nickel: LD50 ORAL – RAT >9000MG/KG. NICKEL METAL HAS LOW ORAL TOXICITY. THE U.S. FOOD AND DRUG ADMINISTRATION HAS AFFIRMED THAT NICKEL IS GENERALLY RECOGNIZED AS SAFE (GRAS) AS A DIRECT HUMAN FOOD INGREDIENT.</p>
<p>Carcinogenicity PTFE: PTFE HAS BEEN CLASSIFIED BY THE INTERNATIONAL AGENCY FOR RESEARCH INTO CANCER AS A GROUP III AGENT. AS SUCH IT IS NOT CLASSIFIABLE AS TO ITS CARCINOGENEITY TO HUMANS. Nickel: THE U.S. NATIONAL INSTITUTE FOR OCCUPATIONAL SAFETY & HEALTH (NIOSH) CONCLUDED THAT NICKEL AND ITS ORGANIC COMPOUNDS ARE NOT CARCINOGENIC WHEN INGESTED. THE NATIONAL TOXICOLOGY PROGRAM (U.S.A.) HAS LISTED NICKEL AS REASONABLY ANTICIPATED TO BE A CARCINOGEN BASED ON THE PRODUCTION OF INJECTION SITE TUMORS. THE INTERNATIONAL AGENCY FOR RESEARCH ON CANCER CONCLUDED THAT THERE WAS SUFFICIENT EVIDENCE THAT NICKEL AND NICKEL COMPOUNDS, AS A GROUP BUT NOT NECESSARILY AS INDIVIDUAL CHEMICALS, WERE CARCINOGENIC TO HUMANS. IARC COULD NOT STATE WITH CERTAINTY WHICH NICKEL COMPOUNDS ARE HUMAN CARCINOGENS AND WHICH ARE NOT. EPIDEMIOLOGICAL STUDIES OF WORKERS EXPOSED TO NICKEL POWDER AND TO DUST AND FUME GENERATED IN THE PRODUCTION OF NICKEL ALLOYS AND OF STAINLESS STEEL HAVE NOT INDICATED THE PRESENCE OF A SIGNIFICANT RESPIRATORY CANCER HAZARD. THE INHALATION OF NICKEL POWDER HAS NOT RESULTED IN AN INCREASED INCIDENCE OF MALIGNANT LUNG TUMORS IN RODENTS. REPEATED INTRATRACHEAL INSTILLATION OF NICKEL POWDER PRODUCED AN INCREASED INCIDENCE OF MALIGNANT LUNG TUMORS IN RATS. REPEATED INTRATRACHEAL INSTILLATION OF NICKEL POWDER DID NOT PRODUCE AN INCREASED INCIDENCE OF MALIGNANT LUNG TUMORS IN HAMSTERS WHEN ADMINISTERED AT THE MAXIMUM TOLERATED DOSE SINGLE INTRATRACHEAL INSTILLATIONS OF NICKEL POWDER IN HAMSTERS AT DOSES NEAR LD50 PRODUCED AN INCREASED INCIDENCE OF FIBRO SARCOMAS, MESOTHELIOMAS AND RHABDOMYOSARCOMAS. INHALATION OF NICKEL POWDER AT CONCENTRATION 15 TIMES THE PEL IRRITATED THE RESPIRATORY TRACT IN RODENTS. NICKEL METAL POWDER HAS CAUSED TUMORS AT THE SITE OF INJECTION IN RODENTS. HOWEVER, STUDIES DO NOT SUGGEST A SIGNIFICANT RISK FOR HUMANS FROM NICKEL CONTAINING PROTHESES.</p>

Emergency and First Air Procedures

Swallowed:

RINSE MOUTH WITH WATER. GIVE PLENTY OF WATER TO DRINK. SEEK MEDICAL ADVICE.

Eye:

IRRIGATE THE EYES WITH PLENTY OF WATER FOR 15 MINUTES. IN ALL CASES OF EYE CONTAMINATION IT IS A SENSIBLE PRECAUTION TO SEEK MEDICAL ADVICE.

Skin:

IF IRRITATION OCCURS WASH THE CONTAMINATED AREA WITH PLENTY OF SOAP AND WATER. REMOVE ANY CONTAMINATED CLOTHING AND WASH PRIOR TO REUSE. IF IRRITATION CONTINUES, SEEK MEDICAL ADVICE.

Inhalation:

REMOVE VICTIM FROM EXPOSURE – AVOID BECOMING A CASUALTY. ALLOW PATIENT TO ASSUME MOST COMFORTABLE POSITION AND KEEP WARM. KEEP AT REST UNTIL FULLY RECOVERED. IF BREATHING LABORED AND PATIENT CYANOTIC (BLUE) INSURE THAT AIRWAYS ARE CLEAR AND HAVE A QUALIFIED PERSON GIVE OXYGEN THROUGH A FACE MASK. IF BREATHING HAS STOPPED APPLY ARTIFICIAL RESPIRATION AT ONCE. IN EVENT OF CARDIAC ARREST APPLY EXTERNAL CARDIAC MASSAGE. SEEK MEDICAL ADVICE.

Section VII – Precautions for Safe Handling and Use

Steps to be Taken in Case Material is Released or Spilt
SWEEP UP

Waste Disposal Method
BURNING IS NOT RECOMMENDED. COMPLY WITH LOCAL REGULATIONS.

Precautions to be Taken in Handling and Storing
KEEP AWAY FROM FLAMES. STORE BELOW 260°C.

Section VIII – Control Measures

Respiratory Protection
NO SPECIAL CONTROLS ARE NECESSARY IF USED WITHIN RECOMMENDED OPERATION TEMPERATURES (i.e. -260°C TO +260°C).

Ventilation
SEE ABOVE.

Protective Gloves
SEE ABOVE

Eye Protection
SEE ABOVE.

Other Protective Clothing or Equipment
SEE ABOVE.

Work/Hygienic Practices
SEE ABOVE.