



ProFlex™ Ni/Ti Wires

1 – IDENTIFICATION

PRODUCT NAME: ProFlex Ni/Ti Wires

CHEMICAL NAME: Nickel-base Alloy

CHEMICAL FAMILY: C29H3606 (H2C=(CH3) CO2CH2CH2OCH2)2

FORMULA:

COMPANY NAME:

Orthodontic Design and Production

1370 Decision Street, Suite D

Vista, CA 92081 (760) 734-3995

2 – HAZARDOUS INGREDIENTS

MATERIAL	CAS #	%(RANGE)	ACGIH-TLV	OSHA-PEL
Nickel	7440-02-0	55	1.0 mg/m ³	1mg/m ³
Titanium	13426-67-7	Balance	5.0 mg/m ³	15 mg/m ³

MATERIAL SAFETY DATA SHEET

3 – HEALTH HAZARD DATA

PRIMARY ROUTES OF ENTRY

PUNCTURE WOUNDS

INHALATION

EYE CONTACT

SKIN CONTACT

POSSIBLE SIGNS AND SYMPTOMS OF EXPOSURES TO DUST, WELDING FUMES, AND GAS:

SHORT TERM EXPOSURE: Metallic taste, nausea, tightness of chest, fever, irritation of eyes, nose, throat and skin; loss of consciousness/death due to welding gases or lack of oxygen. Symptoms may be delayed 4 to 12 hours from the time of contact.

LONG TERM EXPOSURE: There are no adverse effects from the product in its solid form. We believe there is no reliable scientific studies which show that workers exposed to operations upon Nitinol alloys suffer increased incidence of lung cancer or other diseases because of their exposure to the form of nickel in our products.

No toxic effects would be expected from exposure to the solid form of nitinol. Prolonged, repeated exposure to the fumes of dust generated during heating, cutting, abrading, or welding, may or may not cause adverse health effects associated with the listed constituents in excess of OSHA permissible exposure limits established in 20 CFR Subpart Z. Nickel is listed in the National Toxicology Program's "Annual Report on Carcinogens" and the International Agency for Research on Cancer (IARC) monographs as potentially carcinogenic. However, it should be noted that a recent epidemiological study published by IRAC found no increased rates among specialty steel workers.

This material contains nickel, which for some individuals, could result in development of nickel sensitization. This material should not be used for individuals with already known nickel sensitivity and should be discontinued for individuals whom develop nickel sensitization after prolonged contact.

4 – PHYSICAL AND CHEMICAL PROPERTIES

BOILING POINT: 5000 degrees Fahrenheit

MELTING POINT: 2390 degrees Fahrenheit

VAPOR DENSITY (Air=1.00): n/a

SPECIFIC GRAVITY (H20=1.00): .234 lbs/in³

SOLUBILITY IN WATER: n/a

PHYSICAL FORM: POWDER: fine powder, LIQUID: liquid

COLOR: POWDER: white, LIQUID: clear light yellow

ODOR: POWDER: odorless, LIQUID: faint acid odor

Note: This MSDS was prepared in accordance with the requirements of the OSHA Haard Communication Standard (29 CFR 1910.1200) and is to be used only for this product. The information contained in this MSDS is, to the best of our knowledge, believed to be accurate.
CONTACT CHEMTREC (800) 424-3900 IN CASE OF EMERGENCY



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5 – FIRE AND EXPLOSION HAZARD DATA

FLASH POINT: n/a

FLAMMABLE LIMITS: n/a

AUTO IGNITION TEMPERATURE: n/a

UNUSUAL FIRE AND EXPLOSION HAZARDS: none

6 – REACTIVITY DATA

GENERAL: As shipped, this product is stable and hazardous polymerization will not occur

STABILITY: stable

CONDITIONS TO AVOID: high temperature, prolonged storage above 35 degrees Celsius, direct sunlight, high intensity light, open flames, contaminations

INCOMPATIBILITY: strong acid, peroxides, and other oxidizing agent

HAZARDOUS DECOMPOSITIONS: Carbon monoxide and dioxide, low molecular weight Hydrocarbons and organic acids

HAZARDOUS POLYMERIZATION: will not occur

7 – EMERGENCY/FIRST AID MEASURES

PUNCTURE WOUNDS: Infections and the spread of disease that are related to puncture wounds are the primary health hazard associated with wire products. Should a puncture wound occur, remove the wire from the wound. Clean the wound using appropriate first aid. Puncture wounds may initiate the spread of infection. Consult a physician if the wound shows signs of irritation. Protect others from secondary infection by treating bloodied wires as dangerous, and disposing of them safely. Follow procedures that will protect patients and others from infection and spread of disease that may result from the wound.

INHALATION: Remove to fresh air, if condition continues, consult physician.

EYE CONTACT: Flush well with running water to remove a small particulate, get medical attention. For eye contact with large pieces of wire, consult physician for first aid and get medical attention.

SKIN CONTACT: Brush off excess dust. Wash area well with soap and water. Remove clothing that contains nitinol dust.

INGESTION: Seek medical help if large quantities or sharp piece of material have been ingested.

CAUTION: The product may be sterilized by autoclave, for use by orthodontic professional only. It contains Nickel, if a patient reaction is suspected, contact a physician.

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8 – HANDLING AND STORAGE

GENERAL: Use good housekeeping procedures to prevent accumulation of dusts, thus minimizing airborne dust concentrations.

9 – SPECIAL PROTECTION

Nitinol alloys in the form shipped require no special protection for handling. For specific processing, the following should be observed:

VENTILATION: Local exhaust recommended while burning, grinding, and/pr welding and airborne levels or metal oxides exceed applicable OSHA Standards.

WIRE CUTTING: Wire cutters that control the cut off wire shard are recommended to avoid the shard becoming a projectile and potentially dangerous. When the wire is cut, control and dispose of the wire pieces and shards safely. Cut wires perpendicular to the wire to blunt ends and reduce pointed or sharp ends. A diamond file or stone may be used to round pointed wire ends.

PUNCTURE PROTECTION: Orthodontic patients should be told not to eat foods that will bread the wire as they could receive a puncture wound from the wire. Should the wire break and a small section is loose enough to dislodge from the braces, patients should be instructed to remove the loose wire as to prevent the possibility of ingestion.

RESPIRATOR: If fumes, misting or dust conditions occur and exceed applicable OSHA Standards, provide, NIOSH approved air-supplied respirators.

EYE PROTECTION: Recommend approved safety glasses for machining operations and wire cuttings, and face shields for all abrasive saw and grinding operations.

HAND PROTECTION: GLOVES: as required, OTHER CLOTHING: as required.

10 – SPILL OR LEAK PROCEDURES

STEPS TO BE TAKEN IN CASE MATERIAL IS RELEASED OR SPILLED:

Remove by mechanical means. Fine material should be swept or vacuumed. Avoid using compressed air to maneuver spills or leaks of dusty material as this may likely cause eye contamination.

11 – DISPOSAL INFORMATION

WASTE DISPOSAL METHOD: Handle like any dust or dirt

12 – REGULATORY INFORMATION

These products are manufactured using Good Manufacturing Practices and are regulated as Class I Medical Devices by the U.S. Food and Drug Administration. Class II by the Canada CMDR.

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13 – DISCLAIMER OF WARRANTIES

Although reasonable care has been taken in the preparation of this document, we extend no warranties and make no representations as to the accuracy or completeness of the information contained therein, and assume no responsibility regarding the suitability of this information for the user's intended purposes or for the consequences of its use. Each individual should make a determination as to the suitability of the information for his or her particular purpose(s).

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