Modern Orthodontics

Modern Orthodontics
2024 Gobind Nagar
Circuit House Road,
Ludhiana, 141001,INDIA

MATERIAL SAFETY DATA SHEET
NITINOL

Document Number : MSDS-005	Revision Date : Jan 1,2015	Material Type : Nickel Base Alloy
Revision : 0	Number of Pages : 2	

1–PRODUCT IDENTIFICATION

Product Grade/Name : Nickel base alloy.
Trade Name : Nitinol.
Use: Wire products, including super elastic,, thermal activated, high force, open and closed coil springs, including molar distalizing and separators.

2– HAZARDOUS INGREDIENTS

Material	% (Range)	ACGIH-TLV	CAS#
Nickel (Ni)	55.0	1.5 mg/m3	7440020
Titanium (Ti)*	45.0	10.0 mg/m3	7440326

*Is considered a nuisance and covered under ACGIH nuisance dust standard level of 10mg/m3, total dust 8 HR TWA.

3–PHYSICAL HAZARD S

Boiling Point : N/A
Vapor Pressure : N/A
Vapor Density (Air=1) : N/A
Solubility in Water : Insoluble
Appearance and Odor : Metallic gray in color, no odor.
Specific Gravity (H2)=1) : 6.9
Percent Volatile by Volume : N/A
Evaporation Rate : N/A
Melting Point (F °): 2500-2700

4–FIRE AND EXPLOSION DATA

Flash Point (F°): N/A
Flammable Limits : N/A
Extinguishing Media: Use dry powder extinguishing agent
Fire & Explosion Hazard: Metal powder dispersed in air may cause fire and explosion hazard. Explosion hazard, good housekeeping must be maintained. Molten metal can ignite combustibles.

5–HEALTH HAZARD

Sensitization : Prolonged or repeated contact may cause skin irritation or other allergic reactions to sensitive individuals.
Effects of Overexposure : Inhalation is most serious. Prolonged excessive exposure to dust, mist, and fumes of this alloy may contribute to chronic respiratory ailments.
Possible Cancer Hazard : According to OSHA, nickel is treated as a potential carcinogen for hazard communication purposes because it is included in the NTP and IARC lists on potential human carcinogens. Some scientific studies have found an excess incidence of cancer of the respiratory tract among workers involved in certain step of certain ni ckel refining processes. However, several reliable studies of workers exposed to various forms of nickel and its compounds have not shown any increased risk of cancer.
Primary Routes of Entry : Inhalation of dusts or fumes.
Permissible Occupational Exposure - (as established by OSAH PEL and ACGIG TLV) See Section 3.
Emergency First Aid : Eye contact – flush eyes with water.

6–REACTIVITY DATA

Stability : stable
Cautions : Contact with mineral acids will release hydrogen – a dangerous gas.
**Under certain specific conditions, exposure to carbon monoxide may produce nickel carbonyl, a highly toxic gas.
Incompatibility (Material to Avoid) : N/A
Hazardous Decomposition Products : None
Hazardous Polymerization : Will not occur.
Conditions to Avoid : None

7–SPILL OR LEAK PROCEDURES

Steps to be Taken if Leaked or Spilled : Pick up powder or dust spills by methods such as vacuuming or wet mopping-prevent dusty conditions.
Waste Disposal Method : Dispose of in accordance with local, state, and federal regulations

8–SPECIAL PORTECTION INFORMATION

Ventilation : If solid forms of nickel are converted to dust or fumes, working environment should be maintained below the recommended exposure limits (Section 2) by use of appropriate ventilation.
Respiratory Protection : If solid nickel forms are converted in manufacturing processes to dust or fumes and ventilation is not adequate to maintain nickel concentrations below recommended exposure limits (Section 2), then respiratory protection should be used. NIOSH approved respirators according to OSHA CFR 1919.134 are recommended.
Skin: Use of protective gloves (leather or rubber) is recommended.
Eyes: Use safety glasses.

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9-NOTE

While the information and recommendations set forth on this data sheet are believed to be accurate as received from our suppliers, Modern Orthodontics makes no warranty with respect there to and disclaims all liability from reliance thereon.