

0280-MSDS-0002 Rev 01
MATERIAL SAFETY DATA SHEET
Ni, Ti, Cu

**SECTION 1 IDENTIFICATION OF THE SUBSTANCE/PREPARATION
AND OF THE COMPANY/UNDERTAKING**

Product Name: Ni, Ti, Cu, Cobre™ Wire

Manufacturer: DENTSPLY GAC
Address One CA Plaza
Islandia, NY 11768

Information Telephone Number: (800) 645-5530

Emergency Telephone Number: (800) 645-5530

Product Use Orthodontic Wires, Springs, Straights, and Spools

Date of Preparation June 14, 2013

SECTION 2 HAZARDS IDENTIFICATION

EU PREPARATION CLASSIFICATION (1999/45/EC): Not classified as a dangerous preparation as sold. Dust or fumes generated from processing: Harmful (Xn), Dangerous for the Environment (N), R40, R43, R48/23, R51/53

Emergency Overview: These products are manufactured articles as defined in Hazard Communication regulations. These products are not hazardous unless processed (i.e. ground, welded) in a manner that generates dust or fumes. Dust and fumes may cause eye, skin and respiratory irritation. May cause skin and respiratory tract sensitization (allergic reaction). Prolonged inhalation of dust or fumes from this product may cause perforation of the nasal septum and lung damage. Toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment. Dust generated during routine handling, machining, grinding, or sawing of this material may cause mechanical irritation of the skin, eyes and upper respiratory tract. Copper in powder form is capable of creating a dust explosion.

POTENTIAL HEALTH EFFECTS: No information is available on this specific mixture as a whole. The information presented is based on each of the components present at concentrations greater than 1% (0.1 % for hazardous substances other than those classified as Xn, Xi, or as category 3 carcinogens, mutagens, or toxic for reproduction). Machining, grinding or sawing this material may generate harmful dusts. Inhalation of copper fumes, while not expected to occur under typical conditions of use, may cause metal fume fever. Prolonged or repeated exposure may cause dermatitis. See Section 8 for exposure controls.

SECTION 3 COMPOSITION INFORMATION ON INGREDIENTS

Product	Ni	Cu	Ti
NiTi Black Ti	45-60	0	40-50
NiTi Cu	45-60	5-6	40-50
CAS No./EINECS No.	7440-02-0/231-	7440-50-8/236-	7440-32-6/231-

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	111-4	783-2	142-3
EC Substance Classification (67/548/EEC)	Xn R40, R43, R48/23	N 50/53	Not Applicable

SECTION 4 FIRST AID MEASURES

No first aid required for contact with solid product. The following information applies to contact with dust from processing.

Eye Contact: Flush with large quantities of water, holding the eyelids apart to assure that the material is washed out. Get medical attention if irritation persists.

Skin Contact: Remove contaminated clothing. Wash skin thoroughly with soap and water. Get medical attention if irritation develops.

Ingestion: If conscious, wash mouth out with water. Do not induce vomiting. Never give anything by mouth to an unconscious or convulsing person. Get medical attention.

Inhalation: If irritation or other symptoms develop, remove to fresh air. Get medical attention if symptoms persist.

SECTION 5 FIRE FIGHTING PROCEDURES

Extinguishing Media: This material is not combustible in solid form. Use media that is appropriate for the surrounding fire. For fires involving fine dust or filings, do not use water, CO₂ or foam directly on the burning metal. Use dry sand, graphite powder, Lith-X powder, dry chemical or other media appropriate for a class D fire.

Firefighting Procedures: Firefighters should wear full emergency equipment and NIOSH approved positive pressure self-contained breathing apparatus.

Unusual Fire/Explosion Hazards: Fine powders or filings may burn with intense heat. Fine dust may present an explosion hazard. Dousing burning metal with water may generate explosive hydrogen gas.

Known or Anticipated Hazardous Products of Combustion: Thermal decomposition or combustion products include oxides of the metals listed in Section 2 which may be highly toxic.

SECTION 6 ACCIDENTAL RELEASE MEASURES

Accidental Release Measures Pick up solid material for reuse or disposal. For spills of dust, wear respirator and protective clothing (see Section 8). Vacuum using an explosion-proof, HEPA vacuum and non-sparking tools. Do not breathe dust or allow it to contaminate skin or clothing. Spill and release reporting requirements vary. Consult local authorities regarding requirements.

Personal Precautions: Avoid contact with eyes, skin or clothing. Do not breathe dust.

Environmental Precautions: Prevent entry into sewers and waterways.

SECTION 7 HANDLING AND STORAGE

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Handling: Do not breathe dust or fumes from processing. Avoid contact with dust. Wear protective clothing and equipment as described in Section 8. Process only with adequate ventilation. Keep containers closed when not in use. Do not eat, drink or smoke in the work area.

Storage: Store in a cool, well ventilated location away from incompatible materials.

SECTION 8 EXPOSURE CONTROL/PERSONAL PROTECTION

Occupational Exposure Limits:

Nickel (as metallic Nickel)	1 mg/m ³ TWA OSHA PEL 1.5 mg/m ³ TWA (inhalable) ACGIH TLV 0.5 mg/m ³ TWA UK WEL
Titanium	None Established
Copper	1 mg/m ³ TWA

Engineering Controls: None needed under normal use. If dust or fumes are generated during processing, use with adequate local exhaust ventilation to maintain exposures below the occupational exposure limits.

Personal Protective Equipment:

Eye Protection: Wear safety glasses or other eye protection consistent with industrial safety practice for the process being performed.

Skin Protection: Wear protective gloves if need to prevent cuts or other injuries.

Respiratory Protection: None needed under normal use. If the occupational exposure limits are exceeded during processing, an approved respirator with high efficiency particulate filters may be used. For higher exposures (greater than 10 times the exposure limit) a supplied air respirator may be required. Respirator selection and use should be based on contaminant type, form and concentration. Follow OSHA 1910.134, ANSI Z88.2 or local authority regulations and good Industrial Hygiene practice.

Other Protective Clothing or Equipment: Use protective clothing consistent with industrial

Skin Irritation: Wear gloves during prolonged contact to avoid skin irritation from dust.

Work/Hygiene Practices: Good personal hygiene should be exercised by all users of this product

SECTION 9 PHYSICAL AND CHEMICAL PROPERTIES

Appearance and Odor: Silver or black wire with no odor.

Boiling Point: Not applicable

Freezing Point: Not available

Solubility in Water: Insoluble

Vapor Pressure (mmHg): Not Applicable

Evaporation Rate: Not Applicable

% Volatile by Volume: None

Flammable Limits in Air:

LEL: Not Applicable

UEL: Not Applicable

Physical state and appearance: Solid.

Odor: Not available.

Taste: Not available.

Molecular Weight: 63.54 g/mole

Color: Not available.

Melting Point: n/a

Specific Gravity: Not available

pH: Not Applicable

Vapor Density: Not Applicable

Viscosity: Not Applicable

Flashpoint: Not applicable

Au Critical Temperature: Not available.

Specific Gravity: 8.94 (Water = 1)

Vapor Pressure: Not applicable.

Vapor Density: Not available.

Volatility: Not available.

Odor Threshold: Not available.

Water/Oil Dist. Coeff.: Not available.

Ionicity (in Water): Not available.

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pH (1% soln/water): Not applicable.
Boiling Point: 2595°C (4703°F)
Melting Point: n/a
Critical Temperature: Not available.

Dispersion Properties: Not available.
Solubility: Insoluble in cold water.
Autoignition Temperature: Not applicable

SECTION 10 STABILITY AND REACTIVITY

Stability: Stable
Conditions to Avoid: None known.
Incompatibility with Other Materials: Acids, oxidizing agents, ammonium nitrate, sulfur, alkalis, selenium, nickel nitrate and sodium azide.
Hazardous Decomposition Products: Toxic metal fumes and oxides are emitted when product is heated above the melting point.
Corrosivity: Non-corrosive in presence of glass.

SECTION 11 TOXICOLOGICAL INFORMATION

Potential Health Effects:

Eyes: Dust or fines may cause mechanical irritation.

Skin: Dust may cause skin irritation. May cause allergic skin reaction (sensitization).

Ingestion: No acute effects expected from swallowing small amounts. Ingestion of large amounts of copper may cause abdominal pain, nausea or vomiting.

Inhalation: Exposure to nickel dust or fumes may cause irritation of the mucous membranes and upper respiratory tract. May cause allergic respiratory reaction (sensitization). Exposure to copper dust may cause cough, headache, shortness of breath, and eye, skin and respiratory irritation. Exposure to fumes may cause metal fume fever or skin and hair discoloration.

Chronic Health Effects: Prolonged or repeated skin contact to nickel may cause sensitization. Prolonged inhalation of dust may cause lung damage, fibrotic lung disease, and effects on the cardiovascular system. Prolonged inhalation of nickel dust or fumes may cause perforation of the nasal septum and lung damage. Long-term exposures to copper may cause respiratory, liver and kidney effects.

Carcinogenicity: Nickel compounds (may be formed in welding) are classified by IARC as known human carcinogens (Group 1) and by NTP as "Known Human Carcinogens". Metallic nickel is classified by IARC as possibly carcinogenic to humans (Group 2B) and by NTP as "Reasonably Anticipated to be a Carcinogen". None of the other components is listed as a carcinogen by IARC, NTP, ACGIH or OSHA.

Medical Conditions Aggravated by Exposure: Individuals with pre-existing skin disorders may be at increased risk from exposure.

NIOSH RTECS No.: GL5325000

Acute Toxicity Data:

Nickel	No data available
Titanium	No data available
Copper	No data available

SECTION 12 ECOLOGICAL INFORMATION

No data is available at this time.

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SECTION 13 DISPOSAL CONSIDERATIONS

Dispose in accordance with national and local regulations.

SECTION 14 TRANSPORT INFORMATION

DOT Shipping Name: Not Regulated
DOT Hazard Class: N/A
UN Number: N/A
DOT Labels Required (49CFR172.101): N/A

IATA Shipping Name: Not regulated
IATA Hazard Class: N/A
UN Number: N/A
IATA Hazard Labels Required: N/A

IMDG Shipping Name: Not Regulated
IMDG Class: N/A
UN Number: N/A
IMDG Label: N/A

SECTION 15 REGULATORY INFORMATION

U.S. FEDERAL REGULATIONS:

CERCLA: This product has a Reportable Quantity (RQ) of 166 lbs. based on the RQ for Nickel of 100 lbs. Releases above the RQ must be reported to the National Response Center. Many states have more stringent release reporting requirements. Report spills required under federal, state and local regulations.

SARA TITLE III:

Hazard Category For Section 311/312: Not hazardous unless processing creates dusts or fumes.

Section 313 Toxic Chemicals: This product contains the following chemicals subject to Annual Release Reporting Requirements Under SARA Title III, Section 313 (40 CFR 372):

Nickel	7440-02-0	45-60
Copper	7440-50-8	5.9

Section 302 Extremely Hazardous Substances (TPO): None

EPA Toxic Substances Control Act (TSCA) Status: This product is a medical device and not subject to chemical notification requirements.

U.S. STATE REGULATIONS

California Proposition 65: This product contains the following substances known to the State of California to cause cancer: Nickel.

INTERNATIONAL REGULATIONS:

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Canadian WHMIS Classification: Medical devices are not subject to WHMIS.

Canadian Environmental Protection Act: This product is a medical device and not subject to chemical notification requirements.

European Community Labeling: This product is a manufactured article as defined under REACH. No labeling is required for finished products. **The following applies only to dust and fumes generated from processing:**

Contains nickel and copper



Harmful



Dangerous for the Environment

R40 Limited evidence of carcinogenic effect.
R43 May cause sensitization by skin contact.
R48/23 Toxic: danger of serious damage to health by prolonged exposure through inhalation.
R51/53 Toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.
S36/37 Wear suitable protective clothing and gloves.
S45 In case of accident or if you feel unwell seek medical advice immediately (show the label where possible)
S59 Refer to manufacturer/supplier for information on recovery/recycling.
S61 Avoid release to the environment. Refer to Safety data sheet.

European Inventory of New and Existing Chemical Substances (EINECS): This product is a medical device and not subject to chemical notification requirements.

Australian Inventory of Chemical Substances: This product is a medical device and not subject to chemical notification requirements.

China Inventory of Existing Chemicals and Chemical Substances: This product is a medical device and not subject to chemical notification requirements.

Japanese Existing and New Chemical Substances: This product is a medical device and not subject to chemical notification requirements.

Korean Existing Chemicals List: This product is a medical device and not subject to chemical notification requirements.

Philippine Inventory of Chemicals and Chemical Substances: This product is a medical device and not subject to chemical notification requirements.

SECTION 16 – OTHER INFORMATION

HMIS Hazard Rating:

MSDS Form 013
Issue Date: 3/15/2012

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Health –1* Fire Hazard – 1 Physical Hazard – 0
* Chronic Health Hazard

EU Classes and Risk Phrases for Reference (See Sections 2 and 3):

Xn Harmful

N Dangerous for the Environment

R40 Limited evidence of carcinogenic effect.

R43 May cause sensitization by skin contact.

R48/23 Toxic: danger of serious damage to health by prolonged exposure through inhalation.

R50/53 Very toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

R51/53 Toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

Revision Date: 3/15/2012