



MATERIAL SAFETY DATA SHEET

For Welding Consumables and Related Products
Essentially Similar to U.S. Department of Labor Form OSHA 20
(to comply with OSHA Hazard Communication Standard 29 CFR 1910.1200)

SECTION I IDENTIFICATION

Manufacturer/Supplier Name: UNIBRAZE CORP.
Address: 1050 PENNER CREST, HOUSTON, TX 77055
Emergency Phone: (713) 869-6000, 1-800-364-6900

Trade Name: Techniwear 21 Techniwear 31, Techniwear 40, Techniwear 50, Techniwear 52,
Techniwear 55, Techniwear 56, Techniwear 58, Techniwear 61

SECTION II HAZARDOUS MATERIALS*

IMPORTANT: This section covers the materials from which the product is manufactured. The fumes and gases produced during welding with the normal use of this product are covered under Section V.

*The term "HAZARDOUS MATERIALS" should be interpreted as a term required and defined in OSHA HAZARD COMMUNICATION STANDARD 29 CFR 1910.1200 however the use of this term does not necessarily imply the existence of any hazard.

Components	CAS No.	TLV mg/m3	PEL mg/m3	Wt%
Chromium*	7440-47-3	.01 (Cr VI) .5 metal	.5	10 - 32
Iron	1309-37-1	5 (Oxide fume)	10 (Oxide fume)	Balance
Manganese*	7439-96-5	.2	5 (fume)	1 - 3
Silicon	7440-21-3	10	5.0 (respirable) 15 (dust)	.5 - 2.5
Titanium Dioxide	13463-67-4	10	15	0 - 5
Fluorides	7789-75-5	2.5	2.5	0 - 2
Carbon	7782-42-5	3.5	3.5	
Vanadium*	1314-62-1	.05 (V2O5 fume)	.1 (V2O5) .5 (dust)	0 - 1
Molybdenum	7439-98-7	105 (soluble) 15 (insoluble)	5 (soluble) 15 (insoluble)	0 - 10
Nickel*	7440-02-0	1 (soluble) .2 (insoluble)	1	0 - 4
Tungsten	7440-33-7	1 (soluble) 5 (insoluble)	---	0 - 5
Columbium	7440-03-1	---	---	0 - 10
Boron	7440-42-8	10 (oxide)	15 (oxide dust)	0 - 5
Zirconium	7440-67-7	5	5	0 - 2
Graphite	7782-42-5	2 (respirable)	5 (respirable)	1 - 7

* Subject to reporting requirements of Section 313 of the Emergency Planning & Community Right to Know Act of 1986 (SARA) and 40 CFR Part 372.

SECTION III PHYSICAL DATA

These products as shipped are nonhazardous, nonflammable, nonexplosive, and nonreactive.

SECTION IV FIRE AND EXPLOSION HAZARD DATA

Non-Flammable: Welding arc and sparks can ignite combustibles. See Z-49.1 referenced in Section VI.

SECTION V REACTIVITY DATA

Fumes and gases from welding and high temperature cutting cannot be classified simply. The composition and quantity of both depend on the metal being welded, the process, procedures, and electrodes used. Other conditions which also influence the composition and quantity of fumes and gases to which workers may be exposed include: coating on the metal being welded (such as paint, plating or galvanizing), the number of welders and the volume of the work area, the quality and amount of ventilation, the position of the welder's head and respect to the fume plume, as well as the presence of contaminants in the atmosphere (such as chlorinated hydrocarbon vapors from cleaning and degreasing activities).

SECTION VI HEALTH HAZARD DATA

Threshold Limit Value: The ACGIH recommended general limit for welding fume NOC (Not otherwise classified) is 5 mg/m³. ACGIH-1985 preface states: "The TLC-TWA should be used as guides in the control of health hazards and should not be used as fine lines between safe and dangerous concentrations." See section V for specific fume constituents, which may modify this TLV.

Common Entry Is by Inhalation or Through the Eyes and Skin.

Effects of Overexposure: Inhalation of welding fumes and gases can be dangerous to your health. Short-term (acute) overexposure to welding fumes may result in discomfort such as dizziness, nausea, or dryness or irritation of nose, throat, or eyes. Chromium (VI) compounds present in the fume may cause severe irritation of the bronchial tubes and lungs. Ingesting Chromium (VI) salts may cause injury or death. Chromium (VI) compounds may burn eyes. Chromium compounds may cause allergic reactions in some people. Beryllium in fume or dust form is highly toxic. Inhalation of excessive levels of beryllium and beryllium compounds can cause pneumonitis (inflammation of the lung tissues). Long-term (chronic) over-exposure to welding fumes can lead to siderosis (iron deposits in lung) and is believed to affect pulmonary function. Constant inhalation of chromium (VI) compounds may cause an ulceration and perforation of the nasal septum as well as liver and kidney damage. Workers exposed to chromium (VI) compounds and beryllium has a higher incidence of lung and nasal cancers.

Long-term exposure to beryllium by inhalation can cause berylliosis (progressive lung disease) and systemic beryllium disease.

Chromium and Beryllium compounds are on the IARC (International Agency for Research of Cancer) list as posing a carcinogenic risk to humans.

Arc Rays

can injure eyes and burn skin. Electric shock can kill. See Section VII.

Emergency and First Aid Procedures: Call for medical assistance. Use first aid procedures recommended by the American Red Cross. If breathing is difficult – give oxygen. If not breathing-use CPR (cardiopulmonary resuscitation).

Carcinogenicity OSHA (29 CFR 1910.1200) lists Nickel and Chromium as possible carcinogens.

SECTION VII CONTROL MEASURES AND PRECAUTIONS FOR SAFE HANDLING AND USE

Read and understand the manufacturer's instructions and precautionary label on this product. See American Standard Z49.1 Safety in Welding and Cutting, published by the AMERICAN WELDING SOCIETY, 550 N.W. Lejune Road, Miami, Florida 33126 and OSHA Publication 2206 (29 CFR 1910), U.S.Government Printing Office, Washington D.C. 20402 for more details on the following topics.

Ventilation: Use plenty of ventilation and/or local exhaust at the arc, to keep the fumes and gases below the threshold limit value within the worker's breathing zone and the general work area. Welders should be advised to keep their head out of the fumes.

Respiratory Protection: Use respirable fume respirator or air supplied respirator when welding in a confined space or general work area where local exhaust and/or ventilation does not keep exposure below the threshold limit value.

Eye Protection: Wear a helmet or face shield with a filter lens shade number 12-14 or darker. Shield other workers by providing screens and flash goggles.

Protective Clothing: Wear approved head, hand and body protection, which help to prevent injury from radiation, sparks and electrical shock. See ANSI Z-49.1. This would include wearing welder's gloves and a protective face shield and may include arm protectors, apron, hats, shoulder protection, as well as dark substantial clothing. Welders should be trained not to allow electrically live parts to contract the skin or wet clothing and gloves. The welders should insulate themselves from the work and ground.

Waste Disposal Method: Discard any product, residue, disposal container, or liner in an environmentally acceptable manner approved by Federal, State and Local regulations.

Unibraze believes that information set forth in this Material Safety Data Sheet is accurate.

Unibraze makes no warranty, expressed or implied, with respect thereto and disclaims any liability from reliance therein.