THERMADYNE™

VICTOR®

MATERIAL SAFETY DATA SHEET

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Product Identity: Welding Alloy of Copper (1440-0006)

This MSDS is based on air/fuel or oxy/fuel process. There may be other cautions for electric process.

SECTION I: Material Description

Chemical Name & Formula: See Section II
Product Use: Welding Electrode

SECTION II: Hazardous* Ingredients/Identity Information

Chemical elements contained in alloys(greater than 1%) listed in accordance with SARA section 313, Emergency Planning and Community Right to Know Act of 1986 and CFR Part 372.

Hazardous Components	Weight %	(Specific Chemical Identity) CAS No.	mg/m³ OSHA PEL	mg/m³ ACGIH TLV		OTHER LIMITS RECOMMENDED
Copper, Cu	44-97	7440-50-8	1.0	1.0	Dust	N/A
Copper, Cu	44-97	7440-50-8	0.01	0.01	Fume	N/A
Zinc, Zn	0-45	7440-66-6	5.0	5.0	Oxide	N/A
Iron, Fe	0-1.5	7439-89-6	10.0	10.0		N/A
Manganese, Mn	0-1.5	7439-96-5	1.0	1.0		N/A
Nickel, Ni	0-13	7440-02-6	1.0	1.0		N/A
Silicon, Si	0-3.5	7440-21-3	10.0	10.0		N/A
Tin, Sn	0-3	7440-31-5	2.0	2.0		N/A
Silver, Ag	0-0.7	7440-22-4	0.01	0.01		N/A
Boric Acid	0-7	10043-35-3	5.0	5.0		N/A
Borax Glass, Anhydrous	0-2	1303-96-4	1.0	1.0		N/A
Acrylic Copolymer	0-1	(Non-hazardous)	Not Registered			
Residual Monomer	.01	(Not required)	Not Registered			

Chemical elements contained in alloys which are listed carcinogens (source: IARC) and which are present in amounts greater than or equal to 0.1%.

Nickel, Ni	0-100	7440-02-0

*The term "hazardous" should be interpreted as a term required and defined in the OSHA Hazard Communication Standard (29 CFR 1910-1200) and does not necessarily imply the existence of any hazard. Some of the products listed may not contain all of the ingredients shown in Section II. Typical analyses can be found in the appropriate AWS Specification or from your supplier.

SECTION III: Physical/Chemical Characteristics

Physical Form:	Solid	**Water Solubility:**	None
Melting Point:	1600°-1900° F	**Color:**	Light green flux coating
Boiling Point, 760 mm Hg:	N/A	**Odor:**	None
Specific Gravity @20°C:	8.3-8.5 g/cc		

Media: Never use water as an extinguishing agent around molten metal.

Special Fire Fighting Procedures: N/A

Unusual Fire and Explosion Hazards: None but material may react with acids, bases or oxidizers. Material does not present a significant health hazard under normal handling and storage conditions.

SECTION V: Reactivity Data

Hazardous Decomposition Products: Welding fumes and gases cannot be classified simply. The composition and quantity of both are dependent upon the metal being welded, the process, procedures and electrodes used. Other conditions which also influence the composition and quantity of the fumes and gases to which workers may be exposed include: coatings 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 with 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). When the electrode is consumed, the fume and gas decomposition products generated are different in percent and form from the ingredients listed in Section II. Decomposition products of normal operation include those originating from the volatilization, reaction , or oxidation of the materials shown in Section II, plus those from the base metal and coating, etc., as noted above. Primary routes of exposure are inhalation of fumes, gases or particulates and ingestion of particulates. Absorption through the skin is not likely. Chronic exposure to copper, zinc and manganese may cause metal fume fever. Symptoms of metal fume fever include fever, dryness of throat, head and body ache, and chill. Chronic exposures may affect the central nervous system leading to emotional disturbances, gait and balance difficulties, and paralysis. Over exposure to copper may result in skin and hair discoloration. Nickel has been identified as a potential cancer causing agent. Prolonged exposure to silver may produce a grayish-blue discoloration of the skin. Gaseous reaction products may include carbon monoxide and carbon dioxide. One recommended way to determine the composition and quantity of fumes and gases to which workers are exposed is to take an air sample inside the welder's helmet if worn or inside the worker's breathing zone. See ANSI/AWS F1.1 "Method for sampling Airborne Particles Generated by Welding and Allied Processes" available from the American Welding Society, P.O. Box 351040, Miami FL 33135.

SECTION VI: Health Hazard Data and Toxicological Properties

Threshold limit value: The ACGIH 1984-85 recommended limit for welding fume, not otherwise classified (NOC) is 5 mg/m3. TLV-TWA's should be used as a guide in the control of health hazards and not as fine lines between safe and dangerous concentrations. See Section V for specific fume constituents which may modify this TLV-TWA. Fumes and gases can be dangerous to your health. Primary route of entry is by inhalation. Pre-existing medical conditions: individuals with impaired respiratory function may have symptoms worsened by exposure to welding fumes.

Short term (acute) overexposure to welding fumes may result in the following signs and symptoms: discomfort such as dizziness, nausea, or dryness or irritation of the nose, throat or eyes.

Long term (chronic) overexposure to welding fumes can lead to siderosis (iron deposits in lung) and affect pulmonary function.

HEAT RAYS (infrared radiation from flame or hot metal) can injure eyes.

NOISE can damage hearing.

CARCINOGENIC ASSESSMENT: Nickel must be considered a possible carcinogen under OSHA 29CFR1910.1200. IARC has indicated that nickel and certain of its compounds are probably carcinogenic for humans, but the compounds cannot be specified precisely. These conclusions were drawn from operations different from welding. Regardless, exposure level must be kept below those levels specified in Section II.

SECTION VII: Precautions for Safe Handling and Use

Read and understand the manufacturer's instructions and the precautionary label on the product. See American National Standard Z49.1, Safety in Welding and Cutting, published by the American Welding Society, P.O. Box 351040, Miami FL 33135; OSHA Publication 2206 (29CFR1910). U. S. Government Printing Office, Washington D.C. 20402.

VENTILATION: Use enough ventilation and local exhaust at the flame to keep the fumes and gases below TLV's in the worker's breathing zone and the general area. Train the welder to keep his head out of the fumes. Use respirable fume respirator or air supplied respirator when welding in confined space or where local exhaust or ventilation does not keep exposure below TLV. Select as per OSHA 29 CFR 1910.134.

EYE PROTECTION: Wear helmet or face shield with filter lens. As a rule of thumb, start with a shade that is too dark to see the weld zone and then go the next lighter shade (See ANSI Z49.1). Provide protective screens and flash goggles, if necessary, to shield others.

PROTECTIVE CLOTHING: Wear hand, head and body protection which help to prevent injury from radiation and sparks. See ANSI Z49.1. At a minimum this includes welder's gloves and a protective face shield, and may include arm protectors, aprons, hats, shoulder protection as well as dark substantial clothing.

WASTE DISPOSAL: Discard any product, residue, disposable container or liner in an environmentally acceptable manner, in full compliance with federal, state, and local regulations. Scrap metal can be reclaimed for use.

SECTION VIII: First Aid Measures

Call for medical aid. Employ first aid techniques recommended by the American Red Cross.
IF BREATHING IS DIFFICULT, give oxygen. Call a physician.

IF NOT BREATHING, begin artificial respiration, preferably mouth-to-mouth. If no detectable pulse, begin external heart massage. Immediately call a physician.

IN CASE OF FLAME BURN, call a physician.

Victor Equipment Company requests the users of this product to study this Material Safety Data Sheet (MSDS) and become aware of product hazards and safety information. To promote safe use of this product a user should (1) notify its employees, agents and contractors of the information on this MSDS and any product hazards and safety information, (2) furnish this same information to each of its customers for the product, and (3) request such customers to notify their employees and customers for the product of the same product hazards and safety information. The information in the MSDS was obtained from sources which we believe are reliable, and to the best of our knowledge is accurate. However, the information is provided without any representation or warranty, express or implied regarding its accuracy or correctness. The conditions or methods of handling, storage, use and disposal of the product are beyond our control and may be beyond our knowledge. For this and other reasons, we do not assume responsibility and expressly disclaim liability for loss, damage or expense arising out of or in any way connected with the handling, storage, use or disposal of the product. NO REPRESENTATION OR WARRANTIES EITHER EXPRESSED OR IMPLIED, OF ANY NATURE, INCLUDING MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE, ARE MADE HEREIN WITH RESPECT TO THE INFORMATION OR THE PRODUCT TO WHICH THE INFORMATION REFERS.