THERMADYNE

Stoody

MATERIAL SAFETY DATA SHEET

SECTION 1 – PRODUCT IDENTIFICATION

Product Type:	Tungsten Carbide Electrode Rod for Electric Arc and Oxy-Fuel Welding
Product Name:	High-Nickel S-1534, 10-20 ATB Bare, 20-30 ATB Bare, 30-40 ATB Bare, 40-60 ATB Bare, AC-DC Tube Borium Coated, AC-DC Tube Borium (On Size), Bare Borod, AC-DC Borod Coated, 8-10 Horseshoe Borium Bare, H Rod Bare, TB-2954 Bare, TB-2954 (55%) Bare, TB-2954 (On Size), TB-20062, VAH 1530-P
Specification:	None

Manufacturer:	Stoody Company	Emergency 24 hour Telephone No.
Address:	5557 Nashville Road Bowling Green, KY 42101	CHEMTREC (800) 424-9300
Telephone:	(270) 781-9777	

Date Prepared:	June 21, 2010

SECTION 2 – PHYSICAL HAZARDS (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, procedure, and electrodes used. Other conditions which also influence the composition and quantity of the 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 work area, the quality and the 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 from the ingredients listed in Section 3. Fumes and gas decomposition products, and not the ingredients in the electrode, are important. The concentration of a given fume or gas component may decrease or increase by many times the original concentration in the electrode. Also, new compounds not in the electrodes may form. Decomposition products of normal operation include those originating from the volatilization, reaction, or oxidation of the materials shown in Section 3, plus those from the base metal and coatings, etc. as noted above.

Reasonably expected decomposition products from normal use of these products include a complex of oxides of the materials listed in Section 3, as well as carbon monoxide, carbon dioxide, ozone and nitrogen oxides. **The fume limit for chromium, nickel, manganese, cobalt, and hexavalent chrome may be reached before the general limit for welding fumes (5 mg/m^3) is reached.**

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 in the worker's breathing zone. See ANSI/AWS F1.1 *"Method for Sampling Airborne Particles Generated by Welding and Allied Processes"* and *"Characterization of Arc Welding Fume"* available from the American Welding Society, 550 N.W. LeJeune Road, Miami, FL 33126.

Fume generation analysis – Fume generation and fume analysis data, including hexavalent chrome content is available for a range of products and may be obtained by sending a request in writing or sending us an inquiry on the Stoody Company web page (www.stoody.com).

SECTION 3 – HAZARDOUS INGREDIENTS

	C	Mn	Fe	Mo	Ni	Si	W	Al	V
High-Nickel S-1534, 10-20 ATB Bare, 20-30 ATB Bare, 30-40 ATB Bare, 40-60 ATB Bare, AC-DC Tube Borium Coated, AC-DC Tube Borium (On Size), Bare Borod, AC-DC Borod Coated, 8-10 Horseshoe Borium Bare, H Rod Bare, TB-2954 Bare, TB-2954 (55%) Bare, TB-2954 (On Size), TB-20062, VAH 1530-P	0.01 – 4	0.01 – 5	30 – 65	0.01 – 1	0.01 – 5	0.01 – 1	40 – 70	0.01 – 1	0.01 - 1
CAS No.	7782-42-5	7439-96-5	1309-37-1	7439-98-7	7440-02-0	7440-21-3	7440-33-7	7429-90-5	1314-62-1
OSHA PEL (mg/m^3)	5 (resp) 15 (dust) mppcf	(C) 5 (fume)	10 (oxide fume)	5 (soluble) 15 (dust)	1 (soluble) 1 (insoluble)	5 (resp) 15 (dust)	--	5 (resp) 15 (dust)	(C) 0.1 (V_2O_5 fume) (C) 0.5 (resp)
ACGIG TLV (mg/m^3)	2 (resp)	0.2	5 (oxide fume)	0.5 (soluble/resp) 3 (insoluble/resp)	0.1 (soluble) 0.2 (insoluble)	10	1 (soluble) 5 (insoluble)	5 (fume) 10 (dust)	0.05 (V_2O_5 fume)
Other Limits (mg/m^3)	2.5 (resp)	1 (dust) ST 3 IDLH 500	5 (dust) ST 3 IDLH 500	IDLH 1000	0.015 (dust) IDLH 10	10 (dust) 5 (resp)	5 (dust) ST 10	10 (dust) 5 (resp)	(C) 0.05 (fume & dust) (15 mins.) IDLH 35

C = Ceiling
ST = Short Term Exposure Limit
IDLH = Immediately Dangerous to Life and Health
Mppcf = mppcf X 35.3 = million particles per cubic meter = particles per cc
Resp = Respirable

SECTION 4 – HEALTH HAZARDS

1. **Acute** – Irritation to respiratory system; Bronchitis, asthma; nosebleeds. Eye irritation, conjunctivitis; skin ulcer, irritant and allergic dermatitis (potential occupational carcinogen).
2. **Chronic** – Nasal septum ulceration and perforation; liver, kidney damage; leulocytosis (increased white blood cells), leukopenia (reduced white blood cells), eosinophilia; lung cancer.

Overexposure to welding fumes can lead to siderosis (iron deposits in the lung) and affect pulmonary function.

Long term overexposure to manganese compounds may affect the central nervous system. Symptoms include muscular weakness and tremors similar to Parkinson's disease. Behavioral changes and changes in handwriting may also appear.

Chromium VI compounds are required by OSHA to be considered carcinogenic. Long term exposure to Chromium and Chromium III Oxide dust can cause scaling, redness, itchiness, and a burning sensation on the skin.

Nickel compounds can cause a metallic taste, nausea, tightness in the chest, fever, and allergic reactions. Long term overexposure to nickel compounds may cause lung fibrosis or pneumoconiosis. Soreness and itchiness of the nose and change in skin color and/or appearance may also result. "Nickel and it's compounds are considered to be carcinogenic by OSHA."

Manganese fume may cause flu like symptoms (Metal Fume Fever).

Medical Conditions Generally Aggravated by Exposure:

Lung disorders such as asthma, bronchitis, emphysema, etc.

ChemicalsListed as Carcinogens – Chromium, Nickel, Cobalt, and their Compounds.

National Toxicology	**Yes**	**X**
I.A.R.C. Monographs	**Yes**	**X**
OSHA	**Yes**	**X**

Warning: *This product contains or produces a chemical known to the State of California to cause cancer and birth defects (or other reproductive harm). (California Health & Safety Code Section 25249.5 et seq.).*

Emergency and First Aid Procedures – Call for medical aid. Employ first aid techniques recommended by the American Red Cross.

Target/Affected Organs: Blood, respiratory system, liver, kidneys, eyes, skin

Routes of Entry:	1. Inhalation	X	3. Skin	X
	2. Eyes	X	4. Ingestion	X

SECTION 5 – FIRE & EXPLOSIVE HAZARDS

(Nonflammable) Welding arc and sparks can ignite combustibles and flammables. Refer to American National Standard Z49.1 and 20 CFR 1910.252 for fire prevention during the use of the welding and allied procedures.

SECTION 6 – SPECIAL PRECAUTIONS AND SPILL/LEAK PROCEDURES

Waste Disposal Methods - Dispose of as per the guidelines of RCRA – 40CFR 261.

SECTION 7 – SPECIAL PROTECTION INFORMATION/CONTROL MEASURES

Electric Arc welding or oxy fuel welding may create various safety hazards – **Please refer to warning label on product.**

See American National Standard Z49.1, *Safety in Welding, Cutting, and Allied Processes*, published by the American Welding Society, 550 N.W. LeJeune Road, Miami, FL 33126 and OSHA Publication 2206 (29CFR1910), US Government Printing Office, Washington, D.C. 20402 for more details on the following:

Respiratory Protection – Refer to 20 CFR 1910.134

Ventilation	**Local**	100 fpm Capture Velocity
	Exhaust	20 CFR 1910.252

Protective Gloves – Hand shields made of material which is an insulator for heat and electricity.
Eye Protection – See OSHA Guide for the selection of proper shade of lens (1910.33(a)(5) and 1910.252(b)(2)(ii)(H).

Other Protective Clothing or Equipment – Use insulated clothing for heat and electricity i.e. sleeves, helmet, jacket, boots, etc.

Radiation – The effects of radiation depend on the wavelength, intensity, and length of time one is exposed to the radiant energy. Although a variety of effects is possible, the following two injuries are most common: Skin burns and eye damage.

SECTION 8 – REPORTING REQUIREMENTS

EPA: Evaluate applicability of the reporting requirements of the Clean Air Act Amendments of 1990 – Title V
Evaluate applicability of the reporting requirements of Section 313 of the Emergency Planning & Community Right-to-Know-Act of 1986 (SARA) and 40 CFR Part 372.

SECTION 9 - DEFINITIONS

ACGIH	American Conference of Governmental Industrial Hygienists
Acute	Signs & Symptoms of exposure that occur on an essentially immediate basis.
C	Ceiling Limit – exposure limit that cannot be exceeded.
Chronic	Signs & Symptoms of exposure that occur as a result of long term exposure.
CAS No.	Chemical Abstracts Service Number
EPA	U.S. Environmental Protection Agency
IARC	International Agency for Research on Cancer
IDLH	Immediately Dangerous to Live & Health
NIOSH	National Institute of Occupational Safety & Health
NTP	National Toxicology Program
OSHA	U.S. Department of Labor, Occupational Safety & Health Administration
PEL	Permissible Exposure Level (1983)
REL	National Institute of Occupational Safety & Health Recommended Exposure Limit
RCRA	Resource Conservation Recovery Act – Law authorizing the production of hazardous waste (ignitable, corrosive, reactive, and/or toxic materials).
ST	Short Term Exposure Limit – limit of exposure for 15 minutes x 4 in an 8 hour shift with at least a 2 hour interval in between each exposure
SARA	Superfund Emergency Reauthorization Act
TLV	Threshold Limit Value – exposure Limits by the ACGIH organization.
TWA	Time Weighted Average –average exposure during an eight hour period.

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