## SUPERIOR WELDING SUPPLY CO



MSDS NO: 419065 REVISED: November 7, 2013 C0664 Fage 1 of 4

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MATERIAL SAFETY DATA SHEET

This Material Safety Data Sheet (MSDS) is for welding consumables and related products and may be used to comply with OSHA's Hazard Communication standard, 29 CFR 120 CL200, Specified Amendments and Pasathoritation Act (SMA) of 1986 Paulific Law 99 49 99 and Canadian Worlplace Hazardous Materials information System (WHMS) per likelish Canada and mustable product Canada and MSUS (2004). The OSHA Standard must be consulted for specific requirements. This Safety Data Spect complier, with ISO 10104-3 and AMSUS (2004). This deturnment is analishic in coveral languages on our website at www.hoharthrothers.com, from your sales representative or by calling customer service at 11 (937) 332. SECTION 1 - IDENTIFICATION Telephone No: +1 (231) 933-1234 Envergency No: +1 (231) 933-1234

Wahsita: Manufactured by: Address: Hobart Brothers Aluminum 1631 International Drive, Traverse City, MI 49686 www.hobartbrothers.com

ALUMIHUM ALLOY SOLID WIRE WELDING ELECTRODE AND RODS Maxalfilg: 1100, 1013, 4913, 4917, 5087, 5183, 5356, 5554 and 5556

Products Type: Trade Name:

IMPORTANT - This section covers the hazardous materials from which this product is manufactured. The funnes and gases produced during welding with normal use of this product are also addressed in Section 8. The form "hazardous" in this section should be interpreted as a term required and defined in OSIA Hazard Communication Standard 29 CTR Part 1910.1200). SECTION 2 - IDENTIFICATION OF HAZARDS

(Amorphous Silica Fume)	SILICON	NICKEL	MANGANESE	MAGNESIUNI	IRON	COFFER	CIROMIUM	BERYLLIUM	ALUMITUM	INGREDIENT
69012 64 2	74.40-21-3	74-10-02-0	7439 96 5	7439-95-4	7439-89-6	74.40 50 8	7440-47-3	74-10-41-7	7429 90 5	S
w	1	1	1	****	1	1	17.37	1	1	IARC
*	-	_		1	1	1	7.	*	I	NIP
	!	×	-		!		x		1	OSHA"
×	ı	×	I	!	1	ı	×	×	-	S,

E - International Agency for Research on Cancer (1 – Human Carchegen, 2A – Probably Carchegenic to Humans, 2B – Desibly Carchegenic to Humans, 3 – Unclassifiable as to Carchegenicity in Humans, 4 Probably Mot Carchegenic to Humans). 2 – US National Toddology Program (F. – Known Carchegen, 5 – Suspected Carchegeni H. – OSHA Known Carchegenia Progedition SC (2 – On Proposition SC Id.) — Dates indicate the Ingredient is not flend with the IABC, NITy, OSHA of S. – Metal and Chremium III Compounds. 37 – Chremium VI Compounds. 49 – Silier Cretalline n. Quartz

WARNITIGI - Avoid breathing welding fumes and gases, they may be dangerous to your health. Always use protective equipment. adequate vantilation. Always use appropriate personal

FRIMARY ROUTES OF ENTRY: Respiratory System, Fyes and/or Skin.

ARC RAYS: The welding arc can injure eyes and burn skin

ELECTRIC SHOCK: Are worlding and associated processes can kill. See Section 8.

FUMES AND GASES: Can be daugerous to your health

Welding firmes and gazes cannot be classified simply. He composition and quantity of both as a dependent upon the metal being welded, the process, procedures and electrodics used, ladas (tune ingrelients as complays endets and composition products (tune ingrelients as complays endets and composition products (generated are different in percent and form from the impredients feech in Section 3. Decomposition products of normal pages from include these originating from the volstification, proction or existing entering the control of the motorials shown in this exciton, plus those from the base metal and conting, etc., as noted above. Manitor for the motorials deviation in the site of the motorials shown in the section.

funce from the use of this product may contain complex orides or compaunds of the following elements and molecules: aniorphous silica fune, beryllium, chromium, mangeness and makels. Other resonable proceded contiluents of the fune would also include complex codes of from and silican. Gaseous reaction products may include complex codes of from and silican. Gaseous reaction products may include contain monoscila and carbon devide. Once and niferger orides may be formed by the addition from the arc. Other conficient which also influence the composition and guardity of the funes and gases to which workers may be compect include: coatings on the read being worked (such as paint, plating or plannating), the number of weddess and this evidence of the worker's the quality and amount of well-taken; coatings on the volve's head with respect to the fune planna, as well as the presence of contaminants in the amorphice; (such as clinicated involuction respect from the source) to determine the composition and quantity of times and gases to which workers are avoided for the arm at significant workers, are avoided for the source of the welder's themself were not the worker's bestiling accesses, See AMS/MAYS E.1. and shallow from the "Amortican Wedding Scorety", C.O. Dua 35(00), Allami, Fl. 3315. Also, from AMS is Fl.3 "Evaluating Contaminants in the Wedding Environment. A Sampling Stategy Scories," which gives additional which can amonghing.

## SECTION 3.—HAZARDOUS INGREDIENTS

	69012 64 2	(Amorphous Silica Fume)	01	7430-89-6	INON
0.14	7440-21-3	SILICON	0.0.5	7440-50-8	COLLEG
0-0.05	7440 02-0	NICKEL	0.0.5	7440-47-3	CHRONIUM
0.2	7439-96-5	MANGANESE	<0.0003	7440 41-7	BEKILLIOM
0.6	7439 95 4	MAGNESIUM	80 99.7	7429 90 5	ALUMINUM
*WEIGHT	e S	INGREDIENT	*WEIGHT	CAS	INGREDIENT

Section 11 of this NISDS covers the acute effects of overexposure to the various covers methods for protecting your self and your co-workers. ingredients within the welding consumable. Section 8 of this MSDS lists the exposure limits and

> REV #1 1/1/14 FORM #63-MQ/ALUM ORIGINAL



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wilding consumable's aprilicable to this sheet as shapped are nonreactive, nonflammable, nonexpériere and exemitaily can ignifie combustible and flammable products. Unused welding consumables may remain but for a profied of line, or buside consumables and promote a profied of line, or buside standard (AMS) 2:0.1 for further general safety information on the use and handling of welding consumables and SECTION 5. FIRE AND EXPLOSION HAZARD DATA a wolding process. See American

SECTION G-ACCIDENTAL RELEASE MEASURES, concerns where proper possensi protective equipment while handling. Do not discard as general hash, solid objects can be picked up and placed into a container. Wear proper possensi protective equipment while handling. Do not discard as general hash,

SEGION PARADUNISANDE SIDERALE TO A SEGION PARADUNISANDE SIDERALE SEGION PARADUNISANDE SIDERALE SEGION PARADUNISANDE SIDERALE SIDERALE SEGION PARADUNISANDE SIDERALE S ביון יין

STORAGE: Keep separate from acids and strong bases to prevent possible chemical reactions.

SECTION 8 EXPOSURE CONTROL AND PERSONAL PROTECTION

Read and undestand the instructions and the labels on the packaging. Welding fumes do not have a specific OSIA FEI on ACGIH TUV. The OSIA FEI for Particulate - Not Otherwise Classified (PNOC) is 5 mg/m - Respirable Fraction, 15 mg/m - Itoral bust. The ACGIH ITV of Particles - Het Otherwise Specified (PNOC) is 5 mg/m - Itoral-bust. The ACGIH TUV of Particles - Het Otherwise Specified (PNOC) is 5 mg/m - Itoral-bust. The ACGIH TUV of Particles - Het Otherwise Specified (PNOC) and ACGIH Particles - Het Otherwise Specified (PNOC), An industrial Haplewist, the OSIA Permissible Exposure Limits (on AC Contaminants (22 CIF. 1931). The ACGIH Tuve of Contaminants (22 CIF. 1931). The ACGIH Tuve of Contaminants (23 CIF. 1931). The ACGIH Tuve of Contaminants (23 CIF. 1931). The Contaminants (23 CIF. 1931) and the ACGIH Tuve of Contaminants (23 CIF. 1931). The Contaminants (23 CIF. 1931) and the ACGIH Tuve of Contaminants (23 CIF. 1931). The Contaminants (23 CIF. 1931) and the ACGIH Tuve of Contaminants (23 CIF. 1931). The Contaminants (23 CIF. 1931) and the ACGIH Tuve of CIF. Tuve of CIF. 1931). The Contaminants (23 CIF. 1931) and the ACGIH Tuve of CIF. 1931) and the ACGIH Tuve of CIF. 1931 and 1931 and 1931 and 1931. The CIF. 1931 and 193

INGREDIENI	8	OSHA PEL	ACGIII TLV	
ALUMINUMBER	7429-90-5	S R" (Dust)	1 R. (A4)	
BERYLLIUM	7440 41 7	0.002, 0.005 CL**	0.00005 (AL)	
CHROMIUMII	7440-47-3	1 (Metal)	0.5 (Metal) (A4)	
		0.5 (Cr II & Cr III Cpnds)	0.5 (Cr III Cpinds) (A4)	
		0.005 (Cr VI Cpride)	0.05 (Cr VI Sol Cprids) (A1)	
COPPER	7440-50-8	0.1 (Fume), 1 (Dust)	0.2 (Fume), 1 (Dust)	
RON+	7439-89-6	58.	5 R" (F-203) (M)	
MAGNESIUM+	7439 95 4	5.2.	3 R*	
MANGANESEN	7439-96-5	S CL (fume)	0.21° [A4] +	
NICKEL#	7440 02 0	1 (Metal)	151' (Ele) (A5)	
		1 (Insal Cprids)	021' (Insol Childs) [A1)	
SILICON+	7440-21-3	5 R.	38.	
(Amorphous Silica Fume)	69012 64-2	0.8	30.	

R\* Respirable Fraction R\*\*\* Respirable Fraction - Short Term Exposure Limit I\* - Inhibibile Fraction I\*\* - Inhibibile Fraction R\*\* - Respirable Fraction R\*\* - Respirable Fraction - R\*\* - Short Term Exposure Limit I\*\* - As a missince particulate covered under Tail (chance Hist Chrywsize Regulated Hy OSIM or Tail (chance Hist Chrywsize Regulated Hy OSIM OSIM R\*\* - Responsible material under Section 313 of SAM at durar of under Regulated Historia (Chrywsize Regulated Hy OSIM R\*\*) - Responsible material under Section 313 of SAM at durar of under R\*\* - Responsible material under Section 313 of SAM at durar of under R\*\* - Responsible material under Section 313 of SAM at durar of under R\*\* - Responsible material under Section 313 of SAM at durar of under R\*\* - Responsible material under Section 313 of SAM at durar of under R\*\* - Responsible material under Section 313 of SAM at durar of under R\*\* - R\*\* - Responsible material under Section 313 of SAM at durar of under R\*\* - Responsible material under Section 313 of SAM at durar of under R\*\* - R

VENTIATION: Use enough ventilation, local exhaust at the arc or both to been the finnes and gazes below the FF1/11V/OTTs in the wester's heastling some and the general area. Train the wester to keep his head out of the funnes

RESPIRATORY PROTECTION: Use HIOSH approved or equivalent funne repitator or air cupplied respitator when welding in rentined space or where lead educate wallation does not been exposure below the regulatory limits.

EYE PROTECTION: Wear helmot or use face shield with filter lens. As a rule of thumb brigin with Shade Humber 14. Adjust it nevelvel darker shade number. Provide protective screens and flash propers, it recessary, to shield others from the weld are flash by colorting the next lighter Paylone.

PROTECTIVE CLOTHING: Wear land, head and body procedion which help to proceed injury from admittion, sparks and effectived stores. See ALISI 241, An a minimum this includes wedler's gloves and a protective face sheld, and many include arm potentors, aprens, hats, shoulder protection as well as dark nonequitable clothing. I ask the welfer of to tend in part and to insushe kinned from work and ground.

Per la receive and a protective face sheld, and many include arm potents.

PROCEDURE FOR CLEANUP OF SPILLS OR LEAKS: Not applicable

SPECIAL PRECAUTIONS (IMPORTANT): Maintain exposure below the FEI/IIV/OEL. Use inductival hyperic monitoring to ensure that your use of this material does not create exposures which exceed PEI/IIV/OEL. Mays use exhaust ventilation. Refer to the following sources for important additional information: American liabinal Standard (INTS) 250-21; Safety in Wedding and Cutting published by the American Welding Soriety, P.O. Rox 33(101), Mami, FL 33135 and OS1A Publication 255( [2n 1210], IJ 500-250-250.

Government Printing Office, Washington, DC 20102.

Welding consumables applicable to this sheet as shipped are nonreactive SECTION 9 - PHYSICAL AND CHEMCIAL PROPERTIES and essentially nombazardous until welded

COLOR: Silver / Gray PHYSICAL STATE: Solid Wire

FORM: Round Wing ODOR: N/A

GENERAL: Welding gonsumables applicable to this sheet as fould and normalations subject of this product is vite or port the welding parameters it was designed for. When this product is used for welding, hazardous funes may be created. Other lacross to consider include the base metal, base metal, preparament contings. All of these factors can continue to the funes and passe generated during welding. The amount of fune variets with the welding parameters. SECTION 10 - STABILITY AND REACTIVITY.

STABILITY: This product is stable under normal conditions.

REACTIVITY: Contact with acids or strong hases may cause generation of gas.

SHORT-TERM (ACUTE) OVEREXPOSURE EFFECTS: Wolding furnes - May result in discomfort such as dizziness, nausea or dynness or hirlation of nose, throat or eyes. Adminism Odde - Initiation of the respiratory system. Beryllium - Can cause initiant domatific, allegic contact domatific and skin granufonass, initiation of excercive levels of beryllium can cause fung acute domatific and such granufonass, initiation of object levels of the properties of the function of the complete of the function of the cause fung such payablem can cause hug specialisation for succeptible initiations, initiation of the respiratory tract, lung damage and arithms like symptoms. Suchlessing rise various full can cause severe injust on the cause of the SECTION 11 TOXICOLOGICAL INFORMATION





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arsh. Dust on skin can form utcers. Eyst may be burned by chromoun, (vi) compounds. Allergic reactions may occur in some people. Copper - Metal forms fever transactions by metallic tastic ughtness of class and lever. Symptoms may sat 2 to 68 brust billowing overexposure. Iron, Iron Oxder-None are known. Treat at nutrance acts or form. Magnetism - Overexposure to the solve may cause mate line fever classaterized by metallic taste, ightness of chest and ever. Symptoms may last 24 to 48 or 10 or

Expressly fibrois and emphysems. Beryllium: Chronic inhabition of dux and furnes by these susceptible individuals can result in a serious disease called Chronic Beryllium. Chronic inhabition of dux and furnes by these susceptible individuals can result in a serious disease called Chronic Beryllium florasi [ling xarring] restrict the quasted oxygen into the blood stream (ED) can occur to the control of the control oxygen into the blood stream (ED) can occur the ling tissues become inflament This inflammation sometimes accompanied with florasi [ling xarring] restrict the quasted oxygen into the blood stream (ED) can, over thine, be fault. Beryllium is listed on the IPP and is known to be carcinogenic to the interstance from exposure to the physice of copper. Here district, the case of copper and in the literature from exposure to high levels of copper. Here district, liver damage can occur due to copper accumulating to the here characterized by cell destruction and circlosis. High levels of copper in the literature from exposure to the high levels of copper may cause to chromating. In an All Compounds are more readily absorbed through the sidn than exposure to the compounds of the care of

MEDICAL CONDITIONS AGGRAVATED BY EXPOSURE: Persons with pre-existing impaired long functions (asthma-like constitions). Persons with a pacemaker should not go incar violang and cutting operations until they have custailed their dictior and citalined information from the manufacturer of the device. Respirators are to be worn only after being medically cleared by your company distination projection.

EMERGENCY AND FIRST AID PROCEDURES: Call for medical aid. Employ first aid techniques recommended by the American Red Cross. If irritation or flash burns develop after exposure, consult a physiciam.

CARCINOGENICITY: Berythum, drivamium in compounds and racket compounds are classified as IARC Group 1 and NTP Group K carcinogens. Chromium VI compounds and welding furnes must be considered as carcinogens under OSIIA (29 CFR 1910 1200)

CALIFORNIA PROPOSITION 85: WARrinks, These products contain or produce a chemical known to the State of California to cause cancer and birth defects (or other reproductive harm). (California Health & Safety Code Section 35249 8 of seq.)

SECTION 12 - ECOLOGICAL INFORMATION

this reciping procedures if a valiable. Decard any product, residue, puchaging disposable container or finer in an environmentally acceptable manner, in full compliance is deal, state and local regulations. SECTION 13 - DISPOSAL CONSIDERATIONS Wolding processes can release furney directly to the environment. Welding wife can degrade if ich outside and unprotected. Residues from welding consumables and processes could degrade and accumulate in the soil and groundwater.

## SECTION 14 - TRANSPORT INFORMATION

are upplicable. No special procoutions are necessary

SECTION 15 - REGULATORY INFORMATION

Real and understand the manufacturer's institutions, your ericib par's safet, practices and the health and safety instituctions on the label and the material safety data sheet.
Observe all local and rederal rules and regulations. Take all necessary precautions to protect yourself and others.

linited states EPA Toxic Substance Control Act. All constituents of these products are on the TSCA inventory list or are excluded from listing

CERCLA/SARA TITLE III: Reportable Goardines (RGs) and/or Titreshold Planning Quantities (TPQs):

agredient name Youlucts on this MSDS are a solid solidier in the form of a solid article

TPQ (Ib)

releases resulting in the loss of any ingredient at or above its AG require instruction to the Mattonal Response Center and to your Local Emergency Planning

Section 311 Hazard Class
As shipped: Imme

In use. Immediate delayed

EPCBA/SARA ITTE III 313 TOXIC CHEMICAES. The tomoring inclume components are hated as SAFA 313 "Toxic Chemicals" and potentially subject to annual SARA 312 reporting: Beryllium. Chromaum, Copper. Mangainese and Nickel. See Section 3 for weight percentage

CANADIAN WHMIS CLASSIFICATION Class 6. Brosson 2 Subdivision 4

LANADIAN ENVIRONMENTAL PROTECTION ACT (CEPA). AIL CONSTITUTION OF THESE PRODUCTS are ON THE Commentic Substance List (OSL)



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SECTION 16 - OTHER INFORMATION

MERCURY STATEMENT: Mercury is not a normal contaminant in aluminum alloys and neither it nor any of its compounds are used in the manufacture of this product Safety Data Sheet compliant with European Commission Directives 89/106/EEC and 91/155/EEC may be downloaded from www.hobartbrothers.com

For additional information please refer to the following sources:

USA: American National Standard (ANS) 2561; Softin in Welding and Curting", ANS/Jamerican Welding and eliting Society (ANS) F1.5 "Mechots for Simpling and Analyting Gaster from Welding and dilling Processes", ANSF2 AMSF2 AMSF2

Canada: CSA Standard CAN/CSA-W117.2-01 "Safety in Welding, Cutting and Allied Processes".

HOBART BIOTHERS ALUMILIAIS storely recommends the users of this product study this MASDS, the product lakel information and become aware of all hazards associated with weeking. HOBART BROTHERS ALUMINUM believes this data to be accurate and to reflect qualified expert opinion regarding current research. However, HOBART BROTHERS ALUMINUM cannot make any expressed or implied warranty as to this information.