SAFETY DATA SHEET (SDS)

033-ALUMNIUM FC
REVISED 6-2018
SDS Number : 033- ALUMNIUM FC

For Welding Consumables and Related Products
Conforms to the criteria of the Globally Harmonized System of Classification and Labeling of Chemicals (GHS),
OSHA Hazard Communication Standard 29CFR 1910.1200
Standard Must Be Consulted for Specific Requirements

SECTION I – IDENTIFICATION

Manufacturer/Supplier: Washington Alloy Company	Recommended use: Braze	Restriction on use: Not Known	Telephone No: 704-598-1325
Address: 7010-G Reames Rd , Charlotte, NC 28216			Emergency No: 704-598-1325
Trade Name:		Specification	Classification
Flux Cored Aluminum Tubular Torch Alloy		Internal	n/a

SECTION II – COMPOSITION / INFORMATION ON INGREDIENTS

GHS Hazard Classification: Not Classified / **Label Elements** - Hazard symbol and Signal word = No symbol or signal word
Hazard statement and Precautionary statement = Not applicable

Other Hazards which do not result in GHS classification and Overview: Electric shock can kill. Wear approved head, hand and body protection, which help to prevent injury from radiation, sparks and electrical shock. Welding arc and sparks, brazing torch/ open flames can ignite combustibles or flammable materials. 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/brazers should be trained not to allow electrically live parts to contract the skin or wet clothing and gloves. The welders/brazer should insulate themselves from the work and ground. Arc Rays can injure eyes and burn skin. Read and understand the manufacturer's instructions and precautionary label on this product and your employer's safety practices. See Section XIII.
As shipped these are odorless, flux cored wires that are nonflammable, non-explosive, non-reactive and non –hazardous.
Substance: Brazing or Welding fumes and gases cannot be classified simply. The composition and quantity of these fumes and gases are dependent upon the metal being welded/brazed, and the procedures followed and the products used. Fumes may affect eyes, skin, respiratory system as well as pancreas and liver.
Workers should be aware that the composition and quantity of fumes and gases to which they may be exposed, are influenced by: coatings which may be present on the metal being brazed or welded (such as paint, plating, or galvanizing), the number of welders in operation 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 procedure). When the filler is consumed, the fumes and gas decomposition products generated are different in percent and form from the ingredients listed in Section III, The composition of these fumes and gases are the concerning matter and not the composition of the electrode itself. Decomposition products include those originating from the volatilization, reaction, or oxidation of the ingredients shown in Section III, plus those from the base metal, coating and the other factors noted above.
Reasonable expected fume constituents of this product may include: Complex oxides or compounds of iron, manganese, silicon, copper, aluminum, titanium. (Other complex oxides may be present when using fluxes).

Chemical Identity	CAS No.	EINECS#
Carbon dioxide	124-38-9	204-696-9
Carbon monoxide	630-8-0	211-128-3
Nitrogen dioxide	10102-44-0	233-272-6
Ozone	10028-15-6	233-069-2
Manganese (Mn)	7439-96-5	231-105-1

SECTION III – COMPOSITION / INFORMATION ON INGREDIENTS

Chemical Identity Ingredients	% by Weight	CAS No.	EINECS#	Chemical Identity Ingredients	% by Weight	CAS No.	EINECS#
Iron (Fe) (limits as oxide fume)	>1.0	7439-89-6	231-096-4	Aluminum Fluoride	>1.5	7784-18-1	232-051-1
Manganese (Mn) (limits as fume)	>0.5	7439-96-5	231-105-1	Potassium Fluoride	>1.5	7789-23-3	231-151-5
Silicon (Si)	4.0-12.0	7440-21-3	231-130-8	Lithium Fluoride	>1.5	7789-24-4	232-152-0
Aluminum (Al)	> 82.00	7429-90-5	231-072-3	Sodium Chloride	>1.5	7647-14-5	231-598-3
				Potassium Chloride	>1.5	7447-40-7	231-211-8

Other elements or ingredients may be present but in quantities much less than 1%.[(1)] Subject to reporting requirements of Section 302, 304, 311, 312, and 313 of the Emergency Planning and Community Right-To-Know Act of 1986 and 40CFR 370 and 372; (Resp) = Respiratory/ Respiration: Welding and cutting of products that contain Chromium may produce hexavalent chromium and YOU should read and follow OSHA's final rules Fed Register #:71:10099-10385 dated 02-28-2006. Occupational Safety and Health Administration 29 CFR 1910.1000 Permissible Exposure Limit (PEL). American Conference of Governmental Industrial Hygienists (ACGIH) Threshold Limit Value (TLV[R]). *Ceiling Limit **Short Term Exposure Limit

SECTION IV – FIRST AID MEASURES

Contact with skin, eyes, ingestion or injection should not be a source for exposure with proper protection.

Ingestion: Avoid contact with metal fume or powers and dust which may lead to ingestion **Inhalation:** If breathing has stop or difficult move to fresh air and as needed perform artificial respiration. Call medical assistance or physician. **Skin Contact:** Remove any contaminated clothing, gloves or other personnel equipment and promptly wash/flush with mild soap and water. For reddish or blistered skin from thermal/arc radiation promptly wash/flush with water. Get medical assistance or physician help as needed. **Eye Contact:** Removal of dust and fumes requires flushing with abundant amounts of clean water for at least 15 minutes. Get medical assistance or physician help as needed or if issues persist. **Most important symptoms/effects, acute and delayed: Symptoms:** Short-term (acute) overexposure to welding/brazing fumes may result in discomfort such as metal fume fever, dizziness, nausea, dryness or irritation of nose, throat, or eyes. Pre-existing respiratory issues may be aggregated. Long-term (chronic) over-exposure to welding/brazing fumes can lead to siderosis (iron deposits in lung) and is believed to affect pulmonary function. **Indication of any immediate medical attention and special treatment needed:** Treat symptomatically. **Hazards:** Welding fumes and gases cannot be classified simply. Refer to Section II under Substance

SECTION V – FIRE-FIGHTING MEASURES

As shipped these are odorless, wires or rods which are nonflammable, non-explosive, non-reactive and non –hazardous. Welding arcs/ Brazing flame and sparks can ignite combustibles or flammable materials Read and understand the manufacturer's instructions and precautionary label on this product and your employer's safety practices. Read and understand: American National Standard ANSI Z49.1 *Safety in Welding, Cutting and Allied Processes*, published by the AMERICAN WELDING SOCIETY, 550 N.W. LeJeune Road, Miami, Florida 33126; OSHA *Safety and Health Standards* are published by the U.S. Government Printing Office, 732 North Capitol Street NW, Washington, DC 20401. Also National Fire Protection Association NFPA 51B, *Standard for Fire Prevention During Welding, Cutting and other Hot Work*

Suitable (and unsuitable) extinguishing media: As shipped these items will not burn however in the event use media recommended for the burning materials and fire situation and surroundings. No water used on molten metal – use dry chemical, foam or carbon dioxide. **Specific hazards arising from the chemicals:** Welding arcs/brazing flame and sparks can ignite combustibles or flammable materials. **Specific protective equipment and precautions for firefighters:** Wear self-contained breathing apparatus and full protective clothing suit in case of fire or when fumes and vapors are present. Follow general fire-fighting precautions as in the workplace.

SECTION VI – ACCIDENTAL RELEASE MEASURES

Personal Precautions, protective equipment and emergency procedures: With airborne dust and fumes be sure to use adequate engineering ventilation controls and personal protection to prevent overexposure limits recommendations found in Section VIII.
Environment precautions: Control work practices to eliminate environmental release. These products are metal wire, with no spill or leak hazards as shipped. If product becomes molten dam up with sand type media until it cools back to a solid and reuse/recycle as scrap.
Methods and Materials for containment and cleaning up: Solid wire can be picked up and placed back in/on the original container. Clean up immediately while following all safety guidelines as well as using all personal protection safety listed in section VIII. Avoid generating dust and prevent materials from entering and drains, sewers or water sources. Disposal considerations found in Section XIII.
When fumes and vapors are present. Follow general fire-fighting precautions as in the workplace.

SECTION VII – HANDLING AND STORAGE

Precautions for safe handling: Handle with care wearing gloves and keep formation of airborne dust and fumes to a minimum. If needed use adequate engineering ventilation controls and personal protection to prevent overexposure limits recommendations found in Section VIII. Also read American National Standard ANSI Z49.1 *Safety in Welding, Cutting and Allied Processes*, published by the AMERICAN WELDING SOCIETY, 550 N.W. LeJeune Road, Miami, Florida 33126; OSHA *Safety and Health Standards* are published by the U.S. Government Printing Office, 732 North Capitol Street NW, Washington, DC 20401. Do not eat or drink while using these products and ensure proper ventilation is used. Wash hands after use. **Conditions for safe storage, including any incompatibilities:** All employees who handle these products should be trained to handle it safely. Open packages of these products/containers on a safe stable surface and must be properly labeled at all times. Store products in original closed packages, cool dry place, while avoiding extreme temperatures or incompatible items such as acids, oxidizers and halogens. Always follow all regulations in accordance with local/regional/state/national guidelines.

SECTION VIII – EXPOSURE CONTOLS/PERSONAL PROTECTION

Control parameters

Flux or other ingredients	CAS No.	EINECS#	Exposure Limit (mg/m^3)		
			OSHA PEL	ACGIH TLV	NIOSH REL
Iron (Fe) (limits as oxide fume)	7439-89-6	231-096-4	10	5 (Resp)	5.0
Manganese (Mn) (limits as fume)	7439-96-5	231-105-1	1 , 3.0** , 5*	0.02 (Resp) 0.1***	1.0, 3.0**
Silicon (Si)	7440-21-3	231-130-8	15 (dust) 5 (Resp)	WITHDRAWN	5 (Resp) 10 (TOTAL)
Aluminum (Al)	7429-90-5	231-072-3	15 (total dust) 5 (Resp)	10 (dust)1 (Resp)	15 (total dust) 5 (Resp)
Aluminum Fluoride	7784-18-1	232-051-1	2.5 (as F)	2.5 (as F)	2.5 (as F)
Potassium Fluoride	7789-23-3	231-151-5	2.5 (as F)	2.5 (as F)	2.5 (as F)
Lithium Fluoride	7789-24-4	232-152-0	2.5 (as F)	2.5 (as F)	2.5 (as F)
Sodium Chloride	7647-14-5	231-598-3	N/A	N/A	N/A
Potassium Chloride	7447-40-7	231-211-8	N/A	N/A	N/A

Other elements or ingredients may be present but in quantities much less than 1%.[(1)] Subject to reporting requirements of Section 302, 304, 311, 312, and 313 of the Emergency Planning and Community Right-To-Know Act of 1986 and 40CFR 370 and 372; (Resp) = Respiratory/ Respiration:, Occupational Safety and Health Administration 29 CFR 1910.1000 Permissible Exposure Limit (PEL). American Conference of Governmental Industrial Hygienists (ACGIH) Threshold Limit Value (TLV[R]).*Ceiling Limit**Short Term Exposure Limit***Inhalable fraction [(SC)] = Soluble compounds **ACGIH - A**merican **C**onference of **G**overnmental **I**ndustrial **H**ygienists, a professional association which establishes exposure limits used a guideline in control for health hazards but not an indication of safe and dangerous exposure limits **TLV - Threshold Limit Value** - an airborne concentration of a substance, which represents conditions under which it is generally believed that nearly all workers, may be repeatedly exposed without adverse effect. The duration must be considered, including the 8-hour & **BEI** - Biological Exposure Indices, represent the levels of determinants which are most likely to be observed in specimens collected from a healthy worker who has been exposed to chemicals to the same extent as a worker with inhalation exposure to the TLV.**OSHA** - U.S. Occupational Safety and Health Administration. **PEL - Permissible Exposure Limit** - this exposure value means the same as a TLV, except that it is limits guideline by OSHA. **Eye Protection:** Wear a safety glasses with side shields, goggles or face shield with a filter lens shade number 3-4 or darker for brazing. Shield other workers by providing screens and flash goggles. Use safety equipment with filter lens of appropriate shade number (per ANSI Z49.1-1988, "Safety in Welding and Cutting"). **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/brazers should be trained not to allow electrically live parts or flames to contract the skin or wet clothing and gloves. The operator should insulate themselves from the work and ground. **Ventilation:** Use plenty of ventilation and/or local exhaust at the arc/flame, 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 working in a confined space or general work area where local exhaust and/or ventilation does not keep exposure below the threshold limit value.
HYGIENE/ WORK PRACTICES: With all chemicals/materials, avoid getting these products ON YOU or IN YOU. Wash hands after handling these products. Do not eat or drink while handling these products. Use ventilation and other engineering controls to minimize potential exposure to these products.

SECTION IX – PHYSICAL AND CHEMICAL PROPERTIES

Appearance / Color / Odor / Physical state / Form: Flux cored brazing rods that are odorless flux ; **Odor Threshold / pH / Flash Point / Evaporation Rate / Flammability (Solid, Gas) / Upper & Lower Flammability or Explosive Limits:** No data available ; **Vapor Pressure & / Partition coefficient (n-octanol/water) / Auto-ignition Decomposition temperature :** No data available **Solubility(water/other); Insoluble : Density / Relative Density 8.7-9.5 ; Melting Point > 1125°F (607°C)**

SECTION X – STABILITY and REACTIVITY

Chemical stability: These products are considered stable as shipped and under normal conditions **Possibility of hazard reactions:** No data and will not occur. **Conditions to avoid:** Avoid exposure to extreme temperatures, Incompatible materials. **Incompatible materials:** Incompatible items such as acids, oxidizers and halogens Strong acids, strong oxidizers, mineral acids, and halogens. **Hazardous decomposition products:** Read Substance in Section II. Welding and cutting of products that contain Chromium may produce hexavalent chromium and YOU should read and follow OSHA's final rules Fed Register #:71:10099-10385 dated 02-28-2006. Occupational Safety and Health Administration 29 CFR 1910.1000 Permissible Exposure Limit (PEL). The best method to determine the actual composition of generated fumes and gases is to take an air sample from inside the welder's helmet if worn or in breathing zone. For additional information, refer to the American Welding Society Publication, "Fumes and Gases in the Welding Environment".

SECTION XI- TOXICOLOGICAL INFORMATION

Oral/Dermal/inhalation During the welding or brazing processes inhalation of fumes may give the most common route of over exposure. Contact with skin, eyes, ingestion or injection should not be a source for exposure with proper protection. Iron: (Human-child); TDLo: 77 mg/kg. Oral (rat); LD50:30 gm/kg. Intraperitoneal (rabbit); LDLo: 20 mg/kg. Oral (guinea pig); LD50:20 gm/kg. Oral (rat); TDLo: 63 gm/kg/6W-C. Inhalation (rat); 250 mg/m3/6H/4W-I. Intratracheal (rat); TDLo: 450 mg/kg/15W-I. . Silicon: Acute oral toxicity (LD50): 3160 mg/kg [Rat] Manganese: Acute oral toxicity (LD50): 9000 mg/kg [Rat]. Fluoride (as F): Acute oral LD50:4250 mg/kg (rat); Aluminum: Inhalation LC50 (rat 1 h) :7.6 mg/l. **Skin corrosion or irritation / Serious eye damage or irritation / Respiratory or skin sensitization / Germ cell mutagenicity / Reproductive toxicity / Specific target organ toxicity – single exposure / Specific target organ toxicity – repeated exposure**: Not classified **Carcinogenicity:** Heat Rays or open flame, hot metals can injure eyes and burn skin. Skin cancer has been reported from arc rays. **Information on the likely routes of exposures: Ingestion** is not a likely route of exposure for this product or expected under normal use. If swallowed call physician immediately! Do not induce vomiting unless directed by medical personnel. Rinse mouth with water if person is conscious. Never give fluids or induce vomiting if person is unconscious, having convulsions, or not breathing. **Inhalation** of welding/brazing fumes and gases can be dangerous to your health. **Skin/Eye Contact:** Heat Rays can injure eyes and burn skin. **International Agency for Research on Cancer IARC**- has classified welding fumes as a possible carcinogenic to humans (Group 2B). Fluorides listed as group3 not classified as to carcinogenicity to humans National **Toxicology Program** (NTP). **OSHA Specifically Regulated Substances** none; **Symptoms related to physical, chemical and toxicological characteristics: Inhalation:** Copper and copper alloy compounds has effects with GASTRO-INTESTINAL system. **Delayed and immediate effects and also chronic effects from short and long term exposure:** There are no immediate health hazards associated with the wire or rod form of this product. Treat symptoms and eliminate overexposure. Short-term (acute) overexposure to welding/brazing fumes may result in discomfort such as metal fume fever, dizziness, nausea, dryness or irritation of nose, throat, or eyes. Pre-existing respiratory issues may be aggregated. Long-term (chronic) over-exposure to welding fumes can lead to siderosis (iron deposits in lung) and is believed to affect pulmonary function. Manganese and Manganese compounds above safe exposure limits can affect or cause irreversible damage to the central nervous system, including the brain: symptoms may result in impaired speech and movement, lack of energy, stiffness in legs, feet, toes, muscular weakness as well as psychological disturbances. Reports of bronchitis and lung fibrosis have also been noted. **Other information during use**: **Other information during use**: **Inhalation acute toxicity**: Carbon dioxide LC Lo (Human, 5 min): 90000 ppm, Carbon monoxide LC 50 (Rat, 4 h): 1,300 mg/l, Nitrogen dioxide LC 50 (Rat, 4 h): 88 ppm, Ozone LC Lo (Human, 30 min): 50 ppm,

SECTION XII- TOXICOLOGICAL INFORMATION

Ecotoxicity / Persistence and Degradability / Bioaccumulative Potential / Mobility in Soil: Acute; Fish /Aquatic *Invertebrates* Aquatic *Environment* = Iron= LC50 Channel catfish (Ictalurus punctatus) > 500 mg/l, 96 hours**; Manganese** = *EC 50 (Water flea* (Daphnia magna), 48 h): 40 mg/l; **Aluminum** = LC50 Grass carp (Ctenopharyngodon idella) 0.21- 0.31mg/l, 96 hours**;**

SECTION XIII- DISPOSAL CONCIDERATIONS

Disposal Methods: Avoid or minimize generating waste**.** When possible collect scrap and by-products with proper id for recycling. Waste disposal must be in accordance with appropriate Federal, National, Provincial, State, and local regulations. These products, if unaltered by use, may be disposed of by treatment at a permitted facility or as advised by your local hazardous waste regulatory authority.

SECTION XIV- TRANSPORT INFORMATION

UN Number / UN Proper shipping name / Transport Hazard class (es)/ Packing group / Marine pollutant / Special Precautions: Not Regulated as Dangerous Good or Not Regulated, No international regulations

SECTION XV- REGULATORY INFORMATION

United States: TSCA INVENTORY STATUS: The components of these products are listed on the TSCA Inventory
CERCLA REPORTABLE QUANTITY (RQ): N/A. See regulation (40 CFR 302.4).
EPCRA/SARA Title III 313 Toxic Chemicals The following metallic components are listed as SARA 313 "Toxic Chemicals" and potential subject to annual SARA 313 reporting. See Section 3 for weight percent. Ingredient & Disclosure threshold: Manganese 1.0% de minimis concentration; **:** Threshold Planning 10,000 lbs. = Aluminum & Threshold processing and manufacturing =25,000 lbs.
Section 311 Hazard Class: 10,000 lbs. = Aluminum, Fluorides, Silicon Threshold Planning; As shipped: Immediate (Acute) In use: Immediate & delayed (Acute)

California Proposition 65: **WARNING**: This product may expose you to chemicals including [Cobalt (II) Oxide, Titanium dioxide (airborne, unbound particles of respirable size), Chromium (hexavalent compounds), Nickel, Lead and Lead Compounds, Carbon Black, Cadmium, Beryllium and Beryllium Compounds] which are known to the State of California to cause cancer, and [Chromium (hexavalent compounds), Nickel, Lead and Lead Compounds, Cadmium] which are known to the State of California to cause birth defects and/or other reproductive harm. For more information go to https://www.p65warnings.ca.gov/

No ingredients found in this product currently listed on **California Proposition 65**

US State Regulations list:

Alaska-Designated Toxic and Hazardous Substances:, Manganese.

California-Hazardous Substances Listed substance: Manganese, Silicon, Iron, Iron oxide

California Proposition 65 - Carcinogens & Reproductive Toxicity (CRT): Listed substance: **n/a**

Florida-Substance List: Manganese

Illinois-Toxic Substance List:, Manganese and Silicon.

Kansas-Section 302/313 List: Manganese.

Massachusetts-Substance List: Manganese, Silicon

Michigan - Critical Materials Register:

Minnesota-List of Hazardous Substances: Manganese, and Silicon.

Missouri-Employer Information/Toxic Substance List: Manganese, Silicon,

New Jersey-Right to Know Hazardous Substance List Aluminum, Iron, Iron oxide, Manganese, Silicon, , Fluoride (as F) ,

North Dakota-List of Hazardous Chemicals, Reportable Quantities:

Pennsylvania-Hazardous Substance List: Aluminum, Manganese, Silicon, Fluoride (as F)

Rhode Island-Hazardous Substance List: Manganese, Silicon,

Texas-Hazardous Substance List: Manganese

West Virginia-Hazardous Substance List: Manganese.

Wisconsin-Toxic and Hazardous Substances: Manganese.

SECTION XVI- OTHER INFORMATION

Approval Date: 6-21-2018 NEW SDS Number: 033-ALUMNIUM FC
HMIS® ratings Health: 1 Flammability: 0 Physical hazard: 0
NFPA CODES: FIRE: 0 HEALTH: 1 REACTIVITY: 0

Washington Alloy Co. Believes that the information contained in this (MSDS) Material Safety Data Sheet is accurate. However, Washington Alloy Co. does not express or implies any warranty with respect to this information.
Download the most current MSDS and product information @ www.weldingwire.com