



SAFETY DATA SHEET (SDS)

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| Brazing Paste Flux |
| REVISED 7-2019 |
| SDS Number : 029-Aluminum Brazing Flux |

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 of Product and Company

| | | | |
|---|---|----------------------------------|----------------------------|
| Manufacturer/Supplier: Washington Alloy Company | Recommended use: Flux for Brazing or Welding | Restriction on use: Not Known | Telephone No: 704-598-1325 |
| Address: 825 Groves Street, Lowell, NC 28098 | | | Emergency No: 704-598-1325 |
| Trade Name: SUPERFLOW® | Specification | Classification | |
| Aluminum Brazing Flux (Powdered) | AWS A5.31 | Type FB1A (White) | |

AMS 3412F

SECTION II – Hazard identification

GHS Hazard Classification: Not Classified / **Label Elements** - Hazard symbol and Signal word; Irritant & Health Hazard

Hazard statement and Precautionary statement



Harmful when inhaled, swallowed or in contact eyes and skin; If concerned/exposed seek medical advice/attention: Causes severe skin burns and eye damage Causes serious eye damage; Very toxic to aquatic life with long lasting effects; Toxic if swallowed: If medical advice is needed, have product container or label at hand; Keep out of reach of children; - Read label before use. Do not breathe dust/fume/gas/mist/vapors/spray - Wash skin thoroughly after handling- Do not eat, drink or smoke when using this product- Avoid release to the environment- Wear protective gloves/protective clothing and eye/face protection
 Reproductive Toxicity= CATEGORY 2 Oral, Dermal, Inhalation =CATEGORY 4 Signal Word; Danger / Warning
 Avoid - dust, fumes, do not eat drink or smoke while using this item; Storage - store locked up
 Dispose of contents/containers in accordance with local/regional/national/international regulations

Response: IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower ;If skin irritation occurs: Get medical advice/attention ;Take off contaminated clothing and wash before reuse; Inhalation IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing; Immediately call a POISON CENTER or doctor/physician; IF SWALLOWED: rinse mouth. Do NOT induce vomiting; IF SWALLOWED: Call a POISON CENTER or doctor/physician if you feel unwell; Collect spillage; Dispose of contents/ container to an approved waste disposal plant; Store locked up; IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing; Immediately call a POISON CENTER or doctor/physician; If eye irritation persists: Get medical advice/attention

Other Hazards which do not result in

GHS classification and Overview: Flame or hot metal can injure your eyes. Electric shock can kill. Wear approved head, hand and body protection, which help to prevent injury from radiation, sparks and electrical shock. Welding arc, Torch flame and sparks 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 should insulate themselves from the work and ground. Arc Rays and heat 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, white powders that are nonflammable, non-explosive, non-reactive but considered hazardous.

Substance: Welding fumes/brazing fumes and gases cannot be classified simply. The composition and quantity of these fumes and gases are dependent upon the metal being welded or brazed, the procedures followed, and the filler used. Fumes and gases 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 welded/brazed (such as paint, plating, or galvanizing), the number of stations in operation and the volume of the work area, the quality and amount of ventilation, the position of the operator’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 chlorides and fluorides (Other complex oxides may be present when using fluxes).

SECTION III – COMPOSITION / INFORMATION ON INGREDIENTS

*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.

| Chemical Identity Ingredients | Percent | CAS No. | EINECS# |
|-------------------------------|---------|-----------|-----------|
| Lithium Chloride | 15-45 | 7447-41-8 | 231-212-3 |
| Sodium fluoride | < 20 | 7681-49-4 | 231-667-8 |
| Zinc chloride | <10 | 7646-85-7 | 231-592-0 |
| Zinc fluoride | <10 | 7783-49-5 | 232-001-9 |

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

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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 powders and dust which may lead to ingestion DO NOT induce vomiting without physician advice. Immediately rinse mouth several times and drink a cupful of water. Never give anything by mouth to an unconscious person. Get medical attention immediately. **Inhalation:** If breathing has stop or difficult move to fresh air and as needed perform artificial respiration. Call medical assistance or physician as needed. **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, powder which are nonflammable, non-explosive, non-reactive and 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. This product is white powder with possible spill or leak hazards as shipped if not handle properly. If product becomes moist reuse/recycle as scrap.

Methods and Materials for containment and cleaning up: Solid powder 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 always be properly labeled. 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

| Chemical Identity Ingredients | CAS No. | EINECS# | Exposure Limit (mg/m ³) | | |
|-------------------------------|-----------|-----------|-------------------------------------|-------------|-------------|
| | | | OSHA PEL | ACGIH TLV | NIOSH REL |
| Lithium Chloride | 7447-41-8 | 231-212-3 | None listed | None listed | None listed |
| Sodium fluoride | 7681-49-4 | 231-667-8 | 2.5 | 2.5 | 2.5 |
| Zinc chloride | 7646-85-7 | 231-592-0 | 1.0 | 1.0, 2.0** | 1.0, 2.0** |
| Zinc fluoride | 7783-49-5 | 232-001-9 | 2.5 | 2.5 | 2.5 |

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** - American Conference of Governmental Industrial Hygienists, 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: white powder flux, solid ; **Odor Threshold :**Neutral to none/ pH: 3-5 / **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 in water :** unlimited ; **Reactivity in Water ;** Exothermic ; **Melting Point** 950- 1170°F (510-633°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, Strong acids, strong oxidizers. **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 LITHIUM Chloride: Acute oral LD50:526 mg/kg (rat) Dermal LD50: 1488mg/kg (rat). **Zinc Chloride :** Acute oral LD50:1100 mg/kg (rat) **Sodium Fluoride :** Acute oral LD50: 52 mg/kg (rat) Dermal LD50: 178mg/kg (rat) **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 can injure eyes and burn skin. **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 powders or dust, welding/brazing fumes and gases can be dangerous to your health. **Skin/Eye Contact:** Heat Rays can injure eyes and burn skin. Powder and dust can injure eyes **International Agency for Research on Cancer IARC:** has classified welding fumes & Nickel, as a possible carcinogenic to humans (Group 2B). Fluorides listed as group3 not classified as to carcinogenicity to humans National ACGIH Carcinogens **Zinc Fluoride** not classified as a carcinogenicity to humans **A4; Toxicology Program (NTP)** Cadmium known to be human carcinogens; Nickel reasonably anticipated to be human carcinogens. **OSHA Specifically Regulated Substances** Sodium Fluoride listed as RTK Carcinogens; **Symptoms related to physical, chemical and toxicological characteristics:** **Inhalation:** Symptoms may include basic itching, burning and redness of your eyes alloy with GASTRO-INTESTINAL system. **Delayed and immediate effects and also chronic effects from short- and long-term exposure:** There may be health hazards associated with the flux form of this product causing headache, dizziness, tiredness including vomiting or nausea. Treat symptoms and eliminate overexposure. **Other information during use: Inhalation acute toxicity:** none known

SECTION XII- TOXICOLOGICAL INFORMATION

Environmental properties have not been thoroughly investigated. Releases to the environment should be avoided.
Ecotoxicity / Persistence and Degradability / Bioaccumulative Potential / Mobility in Soil: Acute; **Fish /Aquatic Invertebrates Aquatic Environment =** Zinc chloride EC50 oyster (*Crassostrea virginica*), *LC50 Rainbow trout, Donaldson trout* (*Oncorhynchus mykiss*) 0.101-0.198 mg/l, 96 hours ; **Environment-Toxicity to Aquatic Plants LC50 (green algae (Scenedesmus dimorphuis) 3 days)** 0.0623 mg/l, **Persistence and Degradability / Mobility in Soil:** No data **Bioaccumulative Potential Accumulation/The** product contains potentially bioaccumulating substances. **Bioaccumulative Potential Bioconcentration Factor (BCF) Product:** No data available. **Specified substance(s):** No data available. **Other Adverse Effects:** Possibly harmful to aquatic life. Do not allow material to be released to the environment without proper governmental permits. No further relevant information available.

SECTION XIII- DISPOSAL CONSIDERATIONS

Disposal Methods: Do not allow this product to enter sewers or water supplies. 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.

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

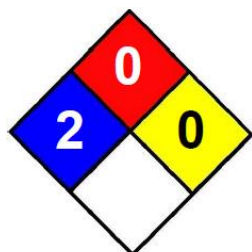
SECTION XV- REGULATORY INFORMATION

United States: TSCA INVENTORY STATUS: The components of these products are listed on the TSCA Inventory
CERCLA REPORTABLE QUANTITY (RQ): Sodium fluoride, Zinc fluoride or Zinc chloride 1000 lbs. for each.
EPCRA/SARA Title III 313 Toxic Chemicals The following 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:** Zinc fluoride or Zinc chloride = 1.0 % N982
Section 311 Hazard Class: As shipped: Immediate (Acute) In use: Immediate & delayed (Acute) This product is a "Hazardous Chemical" as defined by the OSHA Hazard Communication Standard, 29 CFR 1910.1200.

California Proposition 65 California Proposition 65:  **WARNING:** This product may expose you to chemicals including [does not contain any chemicals known to California to cause cancer. For more information go to <https://www.p65warnings.ca.gov/>

Reproductive Toxicity (CRT): Listed substance: N/A **Developmental toxin & Listed date/Male or Female reproductive toxin:** N/A
US State Regulations list: California-Hazardous Substances Listed substance: Zinc chloride **California Proposition 65 - Carcinogens & Reproductive Toxicity (CRT): Listed substance:** none known - **CRT: Listed date/Carcinogenic substance:** none known, **Massachusetts-Substance List:** Zinc fluoride, Zinc chloride **New Jersey-Right to Know Hazardous Substance List:** Zinc fluoride, Zinc chloride 500 lbs. on each **Pennsylvania-Hazardous Substance List:** Zinc fluoride, Zinc chloride

SECTION XVI- OTHER INFORMATION



Approval Date: 7-31-2019 NEW SDS Number: 029 ALUMINUM BRAZE FLUX
 HMIS® ratings Health: 2 Flammability: 0 Physical hazard: 0
 NFPA CODES: FIRE: 0 HEALTH: 2 REACTIVITY: 0
 U.S. DOT = Material is not hazardous and is not considered as a dangerous item.
 Washington Alloy Co. Believes that the information contained in this (SDS) 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 SDS and product information @ www.weldingwire.com