

## **Super Alloy 5 Product Safety Information:**

### **ROD:**

#### **HAZARD IDENTIFICATION:**

**Emergency Overview:** This product is normally not considered hazardous as shipped. Avoid eye contact or inhalation of dust from the product. When this product is used in a welding process, the most important hazards are welding fumes and heat.

#### **Classification of the Substance/Mixture**

#### **CLP/GHS Classification (1272/2008):**

**Flammable Solids, Category 2**

#### **EU Classification (67/548/EEC):**

**Highly Flammable (F), R11**

#### **Labeling:**

**Signal Word:** Warning

#### **Hazard Statements:**

**H228** – Flammable Solid.

#### **Precautionary Statements:**

**P210** – Keep away from heat/sparks/open flames/hot surfaces. – No smoking.

**P241** – Use explosive-proof electrical/ventilating/lighting/equipment.

**P280** – Wear protective gloves/eye protection/face protection.

#### **FIRST AID MEASURES:**

**Inhalation:** Remove to fresh air immediately or administer oxygen. Get medical attention immediately.

**Skin:** Flush skin with large amounts of water. If irritation develops and persists, get medical attention.

**Eye:** Flush eyes with water for at least 15 minutes. Get medical attention.

**Ingestion:** Obtain medical attention immediately if ingested. Rinse mouth.

#### **FIRE-FIGHTING MEASURES:**

**Suitable Extinguishing Media:** Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide. Welding arcs and sparks can ignite combustible and flammable materials. Use the extinguishing media recommended for the burning material and fire situation.

**Unsuitable Extinguishing Media:** Do not use water on molten metal. Large fires may be flooded with water from a distance.

**Specific Hazards Arising From Chemical:** Aluminum oxides, Silicon oxides

**Protective Equipment:** Fire fighters should wear complete protective clothing including self-contained breathing apparatus.

#### **ACCIDENTAL RELEASE MEASURES:**

**Cleaning Measures:** Solid objects may be picked up and placed into a container. Liquids or pastes should be scooped up and placed into a container. Wear proper protective equipment while handling these materials. Do not discard as refuse.

#### **HANDLING AND STORAGE:**

**Precautions for Safe Handling:** Handle with care to avoid stings or cuts. Wear gloves when handling welding consumables. Avoid exposure to dust. Do not ingest. Some individuals can develop an allergic reaction to certain materials.

Retain all warning and identity labels.

**Conditions for Safe Storage:** Store in dry place in closed packages. Keep separate from chemical substances like

acids and strong bases, which could cause chemical reactions. Ground/Bond container and receiving equipment.

#### **EXPOSURE CONTROLS/ PERSONAL PROTECTION:**

**Engineering Controls:** Avoid exposure to welding fumes, spatter, heated materials and dust. Ensure sufficient ventilation, local exhaust, or both, to keep welding fumes and gases from breathing zone and general area. Keep work place and protective clothing clean and dry. Train welders to avoid contact with live electrical parts and insulate conductive parts. Check condition of protective clothing and equipment on a regular basis.

**Exposure limits:** Use industrial hygiene equipment to ensure that exposure does not exceed applicable national exposure limits. Unless noted, all values are for 8 hour time weighted average.

**Biological limits:** No available data

#### **Personal protection:**

**Respiratory protection:** Use an air purifying dust respirator when welding or brazing in a confined space, or when local exhaust or ventilation is not sufficient to keep exposure values within safe limits.

**Hands protection:** Wear appropriate gloves to prevent skin contact.

#### **EN 12477: Protection gloves for welders**

Type B gloves are recommended when high dexterity is required as for TIG welding, while type A gloves are recommended for other welding processes. The contact temp (°C) is 100 and the threshold time (seconds) >15.

**Eyes protection:** Welder's helmet or face shield with color absorbing lenses. Shield and filter to provide protection from harmful UV radiation, infra red and molten metal approved to standard EN379. Filter shade to be a minimum of shade 9.

**Skin protection:** Heat-resistant protective clothing. Wear safety boots, apron, arm and shoulder protection. Keep protective clothing clean and dry. Clothing should be selected to suit the level, duration and purpose of the welding activity.

#### **STABILITY AND REACTIVITY:**

**Chemical Stability:** This product is stable under normal conditions.

**Hazardous Reactions:** Contact with chemical substances like acids or strong bases cause generation of gas. Keep away from any possible contact with water, because of violent reaction and possible flash fire.

**Conditions to Avoid:** Not applicable.

**Incompatible Materials:** Reacts with acid and water

**Hazardous Decomposition Products:** When this product is used in a welding process, hazardous decomposition product would include those from volatilization, reaction or oxidation of the product materials and those from the base metal and coating. The amount of fumes generated from this product varies with welding parameters and dimensions.

Refer to applicable national exposure limits for fume compounds, including those exposure limits for fume compounds found in section 3. Reasonably expected gaseous products would include carbon oxides, nitrogen oxides and ozone. Air contaminants around the welding area can be affected by the welding process and influence the composition and quality of fumes and gases produced.

#### **TOXICOLOGICAL INFORMATION:**

**Signs and Symptoms of Overexposure:** Inhalation of welding fumes and gases can be dangerous to your health. Classification of welding fumes is difficult because of varying base materials, coatings, air contaminants and processes. The Internal Agency for Research on Cancer has classified welding fumes as possible carcinogenic to humans (Group 2B).

**Acute Effects:** Overexposure to welding fumes may result in symptoms like metal fume fever, dizziness, nausea, dryness or irritation of the nose, throat or eyes. May cause sensitization by skin contact.

**Chronic Effects:** Overexposure to welding fumes may affect pulmonary function.

#### **ECOLOGICAL INFORMATION:**

**Toxicity:** Welding rods contain metals which are considered to be very toxic towards aquatic organisms. Finely divided welding rods are therefore considered harmful to aquatic organisms.

**Persistence and Degradability:** The welding rods consist of elements that cannot degrade any further in the environment.

**Bio accumulative Potential:** Welding rods contain heavy metals which bio accumulates in the food chain. The following figures are the bio concentration factor (BCF) for the substances on their own.

BCF:

Aluminum, BCF: 18

**Mobility in Soil:** Welding rods are not soluble in water or soil. Particles formed by working welding rods can be transported in the air.

**Other Adverse Effects:** In massive form, welding rods present no hazards to the aquatic environment. Welding materials could degrade into components originating from the materials used in the welding process. Avoid exposure to conditions that could lead to accumulation in soils or groundwater. Harmful to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

#### **DISPOSAL CONSIDERATIONS:**

**Product:** For product elimination, consult recycling companies or appropriate local authority.

**USA RCRA:** This product is not considered hazardous waste if discarded. Residue from welding consumables and processes could degrade and accumulate in soils and groundwater.

**Package:** May be disposed in approved landfills provided local regulations are observed.

#### **REGULATORY INFORMATION:**

**Safety, health and environment regulations/legislation specific for the substance or mixture:** Read and understand the manufacturer's instructions, your employer's safety practices and the health and safety instructions on the label. Observe any federal and local regulations. Take precautions when welding and protect yourself and others.

**Warning:** Welding fumes and gases are hazardous to your health and may damage lungs and other organs. Use adequate ventilation. Electric shock can kill. Arc rays and sparks can injure eyes and burn skin. Wear correct hand, head, eye and body protection.

**Chemical safety assessment:** No

USA: Under the OSHA Hazard Communication Standard, this product is considered hazardous. 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 § 25249.5 et seq.) United States EPA Toxic Substance Control Act: All constituents of this product are on the TSCA inventory list or are excluded from listing.

#### **OTHER INFORMATION:**

The information in this document is believed to be correct as of the date issued. However, no warranty is expressed to be implied regarding the accuracy or completeness of this information. This information and product are furnished on the condition that the person receiving them shall make his own determinations as to the suitability of the product for his particular purpose and on the condition that he assumes the risk of his use thereof.

#### **Hazard Statements:**

**H228** – Flammable solid.

**H261** – In contact with water releases flammable gas.

#### **R-Phrases:**

**R11** – Highly flammable.

**R15** – Contact with water liberates extremely flammable gases.

#### **S-Phrases:**

**S61** – Avoid release to the environment.

**FLUX:****HAZARD IDENTIFICATION:**

**Emergency Overview:** This product is normally not considered hazardous as shipped. Avoid eye contact or inhalation of dust from the product. When this product is used in a welding process, the most important hazards are welding fumes and heat.

**Classification of the Substance/Mixture****CLP/GHS Classification (1272/2008):**

**Acute Toxicity -- Oral, Category 4**

**Skin Corrosion, Category 1B**

**Specific Target Organ Toxicity (Single Exposure), Category 3**

**Hazardous to the Environment -- Long-Term, Category 2**

**EU Classification (67/548/EEC):**

**Harmful (Xn), Irritant (Xi), Dangerous to the Environment (N), R22, R36/37/38, R51/53**

**Labeling:**

**Signal Word:** Danger

**Hazard-determining components of labeling:**

Lithium Chloride

Zinc Chloride

Sodium Fluoride

**Hazard Statements:**

**H302** – Harmful if swallowed.

**H314** – Causes severe skin burns and eye damage.

**H335** – May cause respiratory irritation.

**H411** – Toxic to aquatic life with long lasting effects.

**Precautionary Statements:**

**P261** – Avoid breathing dust/fume/gas/mist/vapours/spray.

**P264** – Wash skin and hair thoroughly after handling.

**P270** – Do not eat, drink or smoke when using this product.

**P271** – Use only outdoors or in a well-ventilated area.

**P273** – Avoid release to the environment.

**P280** – Wear protective gloves/protective clothing/eye protection/face protection.

**P301+P330+P331** – IF SWALLOWED: Call a POISON CENTER or doctor/physician if you feel unwell.

**P303+P361+P353** – IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower.

**P304+P340** – IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing.

**P305+P351+P338** – IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

**P310** – Immediately call a POISON CENTER or doctor/physician.

**P330** – Rinse mouth.

**P363** – Wash contaminated clothing before reuse.

**P391** – Collect spillage.

**P403+P233** – Store in a well-ventilated place. Keep container tightly closed.

**P405** – Store locked up.

**P501** – Dispose of contents/container in accordance with local/regional/national/international regulations.

**FIRST AID MEASURES:**

**Inhalation:** Remove to fresh air immediately or administer oxygen. Get medical attention immediately.

**Skin:** Flush skin with large amounts of water. If irritation develops and persists, get medical attention.

**Eye:** Flush eyes with water for at least 10 minutes. Get medical attention.

**Ingestion:** Obtain medical attention immediately if ingested. Rinse mouth.

#### **FIRE-FIGHTING MEASURES:**

**Suitable Extinguishing Media:** Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide.

**Unsuitable Extinguishing Media:** Not applicable

**Specific Hazards Arising From Chemical:** Chloride and fluoride fumes with high heat. Hydrogen Chloride Gas, Zinc/zinc oxides, Potassium Oxides, Sodium Oxides

**Protective Equipment:** Fire fighters should wear complete protective clothing including self-contained breathing apparatus.

#### **ACCIDENTAL RELEASE MEASURES:**

**Cleaning Measures:** First neutralize with soda ash or sodium bicarbonate, dilute with water and dispose of in accordance with EPA regulations.

#### **HANDLING AND STORAGE:**

**Precautions for Safe Handling:** Handle with care to avoid stings or cuts. Wear gloves when handling welding consumables. Avoid exposure to dust. Do not ingest. Retain all warning and identity labels.

**Conditions for Safe Storage:** Store in plastic containers in cool area, away from heat. Use safe precautionary practices to avoid spills and exposure to skin and fumes.

#### **EXPOSURE CONTROLS/ PERSONAL PROTECTION:**

**Engineering Controls:** The usual precautionary measures for handling chemicals should be followed. Keep away from food, beverages and feed. Remove all soiled and contaminated clothing immediately. Wash hands before break and at the end of the work. Store all protective clothing separately. Maintain an ergonomically appropriate working environment. Wear protective equipment. Keep unprotected persons away. Avoid causing dust.

**Exposure limits:** Use industrial hygiene equipment to ensure that exposure does not exceed applicable national exposure limits. The limits defined under section 3 can be used as guidance. Unless noted, all values are for 8 hour time weighted average.

**Biological limits:** No available data

##### **Personal protection:**

**Respiratory protection:** Use an air purifying dust respirator when welding or brazing in a confined space, or when local exhaust or ventilation is not sufficient to keep exposure values within safe limits.

**Hands protection:** Wear appropriate gloves to prevent skin contact.

Type B gloves are recommended when high dexterity is required as for TIG welding, while type A gloves are recommended for other welding processes. The contact temp (°C) is 100 and the threshold time (seconds) >15.

**Eyes protection:** Welder's helmet or face shield with colour absorbing lenses. Shield and filter to provide protection from harmful UV radiation, infra red and molten metal approved to standard EN379. Filter shade to be a minimum of shade 9.

**Skin protection:** Heat-resistant protective clothing. Wear safety boots, apron, arm and shoulder protection. Keep protective clothing clean and dry. Clothing should be selected to suit the level, duration and purpose of the welding activity.

#### **STABILITY AND REACTIVITY:**

**Chemical Stability:** This product is stable under normal conditions.

**Hazardous Reactions:** Hydrogen chloride fumes, fluorides with high heat.

**Conditions to Avoid:** Excess heat or cold. Metals Contact with acids liberates very toxic gas.

**Incompatible Materials:** Glass or porcelain.

**Hazardous Decomposition Products:** When this product is used in a welding process, hazardous decomposition product would include those from volatilization, reaction or oxidation of the material listed in section 3 and those from the base metal and coating. The amount of fumes generated from this product varies with welding parameters and dimensions.

Refer to applicable national exposure limits for fume compounds, including those exposure limits for fume

compounds found in section 3. Reasonably expected gaseous products would include carbon oxides, nitrogen oxides and ozone. Air contaminants around the welding area can be affected by the welding process and influence the composition and quality of fumes and gases produced.

#### **TOXICOLOGICAL INFORMATION:**

**Acute Effects:** Lithium Chloride is an antidepressant/antipsychotic and may affect behavior/Central Nervous System (drowsiness, mental confusion, somnolence, muscle weakness, contraction, spasticity, tremors) if ingested in high doses. It may also affect brain (degenerative changes), metabolism (anorexia), vision (blurred vision), blood, urinary system, cardiovascular system, and liver. Zinc Chloride affects behavior/ Central Nervous System (central nervous system depression), the urinary system (kidney damage – hematuria, oliguria, and renal failure), cardiovascular system, respiration (dyspnea), metabolism, pancreas (elevated amylase, and glucose levels), liver enzymes, and blood (changes in white and red blood cell count, changes in serum composition). Sodium Fluoride may affect behavior/Central Nervous System/Nervous System (headache, nervousness, dizziness, seizures, convulsions, tremors, muscle weakness, somnolence, respiration (respiratory depression, dyspnea), cardiovascular system (weak pulse, hypotension, dysrhythmias, cardiac arrest), liver, urinary system (polyuria, polydipsia), brain, metabolism (loss of appetite, hypocalcemia, hyperkalemia, and hypo magnesnia), teeth, bones, and blood (changes in red and white blood cell counts, interference in blood coagulation).

**Eye Contact:** may cause severe irritation with possible eye burns and irreversible eye injury. Also it may cause corneal ulceration, chemical conjunctivitis, and opacification, and glaucoma and severe iritis.

**Skin Contact:** Causes skin irritation with possible burns, especially if skin is wet or moist. Also it may be absorbed by the skin. Inhalation: may cause severe respiratory tract irritation, headache, cyanosis (bluish discoloration of skin due to deficient oxygenation of the blood), delayed lung edema, bronchial asthma. Inhalation of fumes may cause mental fume fever. It is characterized by flu-like symptoms (fever, chills, cough, muscle pain, weakness), chest pain. Also may cause irritation and chemical burns of the respiratory tract with coughing, breathing difficulty and possibly nasal septum perforation and coma.

**Ingestion:** Harmful if swallowed. Also it may cause severe digestive tract irritation with thirst, salivation, nausea, vomiting, hypermotility, diarrhea, abdominal pain, possible burns (corrosion and permanent tissue destruction) of the esophagus and digestive tract and perforation of the stomach and possible death.

**Chronic Effects:** Lithium Chloride may affect behaviour/ Central Nervous System and cardiovascular system, and have similar affects to acute ingestion. Zinc Chloride may cause defatting and dermatitis with repeated or prolonged skin contact.

Sodium Fluoride may cause fluorosis. Effects of Fluorosis may include joint pain, weakness, limited joint mobility, brittle bones, ossification on x-ray, thickening of long bone cortices, calcification of ligaments, osteomalacia, osteosclerosis (skeletal (bone and teeth) abnormalities) and mottled tooth enamel. Other symptoms may include anemia, nausea, vomiting, diarrhea or constipation, kidney damage and weight loss/anorexia. Chronic inhalation may cause bronchitis to develop with cough, phlegm, and/or shortness of breath, and liver complications (hepatic enzymes increased, jaundice). Prolonged or repeated exposure to sodium fluoride can cause damage to the lungs.

#### **ECOLOGICAL INFORMATION:**

**Toxicity:** No available data.

**Persistence and Degradability:** No available data.

**Bio accumulative Potential:** No available data.

**Mobility in Soil:** No available data.

**Other Adverse Effects:** No available data.

Do not allow undiluted product or large quantities to reach ground water, water course or sewage systems. Do not allow product to be released in the environment without proper governmental permits. Very toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

#### **DISPOSAL CONSIDERATIONS:**

**Product:** For product elimination, consult recycling companies or appropriate local authority.

**Package:** May be disposed in approved landfills provided local regulations are observed.

**REGULATORY INFORMATION:**

**Safety, health and environment regulations/legislation specific for the substance or mixture:** Read and understand the manufacturer's instructions, your employer's safety practices and the health and safety instructions on the label. Observe any federal and local regulations. Take precautions when welding and protect yourself and others.

**Warning:** Welding fumes and gases are hazardous to your health and may damage lungs and other organs. Use adequate ventilation. Electric shock can kill. Arc rays and sparks can injure eyes and burn skin. Wear correct hand, head, eye and body protection.

**Chemical safety assessment:** No

USA: Under the OSHA Hazard Communication Standard, this product is considered hazardous. 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 § 25249.5 et seq.) United States EPA Toxic Substance Control Act: All constituents of this product are on the TSCA inventory list or are excluded from listing.

**OTHER INFORMATION:**

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**Hazard Statements:**

**H301** – Toxic if swallowed.

**H302** – Harmful if swallowed.

**H314** – Causes severe skin burns and eye damage.

**H315** – Causes skin irritation.

**H319** – Causes serious eye irritation.

**H335** – May cause respiratory irritation.

**H410** – Very toxic to aquatic life with long lasting effects.

**H411** – Toxic to aquatic life with long lasting effects.

**R-Phrases:**

**R22** – Harmful if swallowed.

**R25** – Toxic if swallowed.

**R34** – Causes burns.

**R36/38** – Irritating to eyes and skin.

**R36/37/38** – Irritating to eyes, respiratory system and skin.

**R50/53** – Very toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

**R51/53** – Toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

**S-Phrases:**

**S22** – Do not breathe dust.

**S26** – In case of contact with eyes, rinse immediately with plenty of water and seek medical advice.

**S36/37/39** – Wear suitable protective clothing, gloves and eye/face protection.

**S45** – In case of accident or if you feel unwell, seek medical advice immediately (show the label where possible).

**S60** – This material and its container must be disposed of as hazardous waste.

**S61** – Avoid release to the environment.