JOHNSON MANUFACTURING COMPANY
Safety Data Sheet
To comply with 29CFR 1910.1200
OSHA's Hazard Communication Standard

F646-81-Sn, AquaTin Paste Solder

1. PRODUCT AND COMPANY INFORMATION

Johnson Manufacturing Company
114 Lost Grove Road
Princeton IA 52768

Emergency Telephone 1-(563)-289-5123
CHEMTREC AFTER HOURS 1-(800)-424-9300
Revised: 4/1/2026 by JMC Product Safety

2. HAZARD IDENTIFICATION

GHS Classification:
Acute Tox 4
Eye Irr 2
Acute Aqua 1
Chronic Aqua 1

GHS Label Elements:

AMMONIUM CHLORIDE & TIN/SILVER/COPPER/ANTIMONY
WARNING

H Codes: H302, H319, H410
Harmful if swallowed
May be harmful if inhaled
Cause eye irritation
Very toxic to aquatic life with long lasting effects

P Codes: P264, 270, 280, 330 301+312, 337+313, 305+351+338+310, 501
Avoid breathing mist/vapors/spray. Do not get in eyes, on skin, or on clothing. Use in a well ventilated area. Wear protective gloves/protective clothing/eye protection/face protection. In case of inadequate ventilation use respiratory protection. Do not breathe dust/fume/gas/mist/vapor/spray. Do not eat, drink or smoke when using this product. IF SWALLOWED: Rinse mouth. DO NOT induce vomiting. Immediately call a POISON CENTER/Doctor. IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower. Get medical advice/attention if you feel unwell. IF INHALED: Remove victim to fresh air and keep comfortable for breathing. Get medical advice/attention if you feel unwell. IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Immediately call POISON CENTER/Doctor. Wash thoroughly after use. Wash contaminated clothing before reuse. Store in a closed compatible container in cool dry place. Avoid release to the environment. Dispose of contents/container in accordance with specified local/regional/national/international regulations for disposal. Keep out of the reach of children. Read label and SDS prior to use.

3. COMPOSITION/INFORMATION ON INGREDIENTS

Hazardous Component	CAS #	OSHA TWA	ACGIH TWA	Other Limits	Percent by Weight
Tin	7440-31-5	2 mg/m3	2 mg/m3	NE	
Ammonium Chloride	12125-02-9	10 mg/m3	10 mg/m3	NE	
+ Copper	7440-50-8	0.1 mg/m3	0.2 mg/m3	NE	% as specified
+ Silver	7440-22-4	0.01 mg/m3	0.1 mg/m3	NE	% as specified
+ Antimony	7440-36-0	0.5 mg/m3	0.5 mg/m3	NE	% as specified

Only those ingredients listed in this section have been determined to be hazardous as defined in 29CFR 1910.1200.
An ingredient marked with an asterisk(*) is also listed in 29CFR 1910.1200(D) #4 as a known or suspected cancer hazard.

+ denotes a chemical regulated as toxic by the Environmental Protection Agency (EPA) as outlined in 40CFR Part 372 (section 313)

4. FIRST AID MEASURES

Signs and symptoms of exposure: Inhalation-Nose & throat irritation, headache, dizziness, difficulty breathing, coughing. Ingestion-nausea, vomiting, cramps. Skin-redness, burning, rash, dryness. Eye-redness, burning, tearing, blurred vision.

Medical conditions aggravated by exposure: Skin, kidney and respiratory conditions.
Emergency first aid procedures:
Skin: Flush with water immediately - Seek medical attention if necessary

Eyes: Flush with water for 15 minutes - Seek medical attention
Ingestion: DO NOT induce vomiting, drink large amounts of water - seek medical attention. Never give anything by mouth to an unconscious person
Inhalation: Remove to fresh air. Support respiration if required - Seek medical attention

5. FIREFIGHTING MEASURES

Extinguishing media: dry chemical.
Special fire fighting procedures: use self sustaining respiratory suit.
Unusual Fire and Explosion Hazards: High concentrations of dust may be explosive above 1100 F. May release metal and metal oxide fumes, ammonia, chlorine, hydrochloric acid.

6. ACCIDENTAL RELEASE MEASURES

Methods and materials: Flush into chemical sewer or sweep up with a suitable absorbent. Wear adequate protection as described in section 8.
Environmental Precautions: Avoid release to the environment. Collect spillage.

7. HANDLING & STORAGE

Wash thoroughly after use. Wash contaminated clothing before reuse. Store in a closed corrosive resistant container, with corrosive resistant liner, in cool dry place. Keep out of the reach of children. Read label and SDS prior to use.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Occupational Exposure Limit Values: See section 3.
Respiratory Protection (type): HEPA/Acid mask required for fumes above TWA.
Ventilation: Local Exhaust preferred Special: NE
Mechanical: OK Other: NE
Protective Gloves: plastic or rubber Eye Protection: Goggles or face shield
Other Protective Clothing or Equipment: as required to avoid contact.
Work/Hygienic Practices: Wash after use. Follow good industrial hygienic practices.

9. PHYSICAL AND CHEMICAL PROPERTIES

Boiling Point: NA Specific Gravity: 4.0
Vapor Pressure (mm Hg): NE Melting Point: 450 F
Vapor Density: NE Evaporation Rate: <1 (butyl acetate=1)
Solubility in water: 30% pH: NE
Flash Point: 350 F (TOC) Flammable Limits: lel: NE uel: NE
Appearance and odor: Silver/Gray paste, odorless.

10. STABILITY AND REACTIVITY

Stability : STABLE Conditions to avoid : none

Incompatibility (materials to avoid): strong bases & acids, oxidizers, sulfides, halogens.
Hazardous Decomposition or Byproducts (incomplete combustion): High concentrations of dust may be explosive above 1100 F. May release metal and metal oxide fumes, ammonia, chlorine, hydrochloric acid.

Hazardous Polymerization: WILL NOT OCCUR Conditions to avoid: none

11. TOXICOLOGICAL INFORMATION

Routes of entry: Inhalation: yes Skin: no Ingestion: yes

Health Hazards (acute and chronic): Contact with fumes, dust and material may cause skin, eye and respiratory tract irritation. Ingestion may cause digestive tract irritation. Gross or repeated inhalation may result in "metal fume fever", symptoms of which may not manifest for several hours after exposure. Chronic exposure via inhalation may result in benign pneumoconiosis, other respiratory tract effects. Chronic inhalation and ingestion may result in kidney effects. Studies show that potential health risks vary by individual. Always minimize exposure as a precaution.

Carcinogenicity: not determined NPT? no IARC Monographs? no

12. ECOLOGICAL INFORMATION

Toxicity: NE **Persistence & Degradability:** NE

Bio-accumulative Potential: NE
PBT & vPvB Assessment: NE
Mobility in Soil: NE
Other Adverse Effects: NE

13. DISPOSAL CONSIDERATIONS

Waste Disposal Method: dispose of in accordance with all local state and federal regulations
Other Precautions: Avoid skin & eye contact, inhalation & ingestion of fumes and material. Wash contaminated clothing before reuse. Keep away from children.

14. TRANSPORT INFORMATION

DOT Classification: Not regulated as dangerous goods
IATA Classification: Not regulated as dangerous goods
IMDG Classification: Not regulated as dangerous goods
Marine Pollutant: NE

15. REGULATORY INFORMATION

This product contains the following EPCRA section 313 chemicals subject to the reporting requirements of section 313 of the Emergency Response and Community Right-To-Know-Act of 1986 (40 CFR 372):

CAS Number	Chemical Name	Percent by Weight
7440-50-8	Copper	% as specified
7440-22-4	Silver	% as specified
7440-36-0	Antimony	% as specified

This information must be included in all SDSs that are copied and distributed for this material.

NFPA Classification (NFPA 325M,8th edition)(Health, Flammability, Reactivity): 2-1-0

16. OTHER INFORMATION

The information and recommendations contained within this publication have been compiled from sources believed to be reliable and to represent the best information available to JOHNSON MANUFACTURING at the time of issue. No warranty, guarantee, or representation is made by JOHNSON MANUFACTURING nor does JOHNSON MANUFACTURING assume any responsibility in connection there within; nor can it be assumed that all acceptable safety measures or other safety measures may not be required under particular or exceptional conditions or circumstances.