

**1. PRODUCT AND COMPANY IDENTIFICATION:**

**PRODUCT NAME:** Acid Core Silver Solder 83-421 and 83-422

**MANUFACTURER:** Kimball Midwest  
4800 Roberts Road  
Columbus, OH 43228  
Phone: 800-233-1294

**EMERGENCY TELEPHONE NUMBER:** Chemtrec 800-424-9300

**2. 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):**

**Skin Irritation, Category 2**

**Eye Irritation, Category 2A**

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

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

**Irritant (Xi), R36/37/38**

**Labelling:**



**Symbols:**

**Signal Word:** Warning

**Hazard Statements:**

**H315** – Causes skin irritation.

**H319** – Causes serious eye irritation.

**H335** – May cause respiratory irritation.

**Precautionary Statements:**

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

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

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

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

**P302+P352** – IF ON SKIN: Wash with plenty of soap and water.

**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.

**P312** – Call a POISON CENTER or doctor/physician if you feel unwell.

**P332+P313** – IF skin irritation occurs: Get medical advice/attention.

**P337+P313** – IF eye irritation persists: Get medical advice/attention.

**P362** – Take off contaminated clothing and wash before reuse.

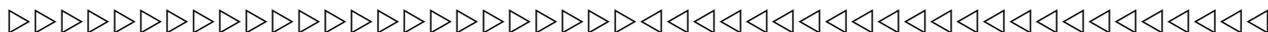
**P403+P233** – Store in a well-ventilated place. Keep container tightly closed.

**P405** – Store locked up.

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

**3. COMPOSITION / INFORMATION ON INGREDIENTS:**

Chemical	CAS #	Range %	OSHA PEL	ACGIH-TLV	Carcinogenicity	EU Classification	CLP/GHS Classification
----------	-------	---------	----------	-----------	-----------------	-------------------	------------------------



Identity			(mg/m3)	(mg/m3)		(67/548/EEC)	(1272/2008)
Tin	7440-31-5	94-97	2.0	2.0	No	Not Dangerous	Not Hazardous
#Silver	7440-22-4	3-6	.01 ( Dust & Fumes )	.01 ( Dust & Fumes )	No	Not Dangerous	Not Hazardous
*Azelaic Acid	123-99-9	0-4.0	N/E	N/E	No	Not Dangerous	Not Hazardous
Urea	57-13-6	0-4.0	N/E	5.0	No	Not Dangerous	Not Hazardous
Ethylene Diamine dihydrochloride	333-18-6	0-4.0	N/E	50 ppm	No	(Xn) R22, R42 (Xi) R36/37/38, R43	(H302) Acute Tox. 4 (H315) Skin Irrit.. 2 (H317) Skin Sens. 1 (H319) Eye Irrit.. 2A (H334) Resp. 1 (H335) STOT SE 3
Ethylene dihydrochloride	557-66-4	0-4.0	N/E		No	(Xi) R36/37/38	(H315) Skin Irrit.. 2 (H319) Eye Irrit.. 2A (H335) STOT SE 3
Succinimide	123-56-8	0-4.0	N/E		No	Not Dangerous	Not Hazardous

**Important:** This section covers the materials of which the products manufactured. The fumes and gases produced during normal use of this product are covered in section 10. The term "Hazardous" in "Hazardous Material" should be interpreted as a term required and defined in OSHA Hazard Communication Standard 29CFR 1910-1200 and it does not necessarily imply the existence of hazard. The chemicals or compounds reportable by Section 313 of SARA are marked by the symbol #.

\*Acid Flux Core is centered inside the wire.

No other hazardous material is present in concentration greater than 1% (0.1% for Carcinogens)

NE = Not Established

#### 4. FIRST AID MEASURES:

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

**Skin:** Flush skin with large amounts of soap and 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.

#### 5. FIRE-FIGHTING MEASURES:

**Suitable Extinguishing Media:** SMALL FIRE: Use CO2 or dry chemical powder. LARGE FIRE: Use water spray, fog or foam. Do not use water jet.

**Unsuitable Extinguishing Media:** Do not use water on molten metal.

**Specific Hazards Arising From Chemical:** FIRE HAZARD: When heated in chlorine, Tin reacts, producing light and much heat. In the presence of water, cupric nitrate and tin foil, on prolonged intimate contact, will produce flaming and sparking. Sodium Peroxide and Potassium Peroxide, Potassium Dioxide, oxidized Tin with incandescence. The reaction between tin and tellurium attains incandescence. EXPLOSION HAZZARD: Tin reacts violently or explosively with fused ammonium nitrate below 200 deg. C. Contact of metallic tin and turpentine may cause fires and explosions. Finely divided dust may form explosive mixture with air. Do not plunge damp or wet solder bars/pieces into molten solder.

Tin oxides, Silver/silver oxides, Carbon oxides, Nitrogen oxides (NOx), Hydrogen chloride gas

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

#### 6. ACCIDENTAL RELEASE MEASURES:

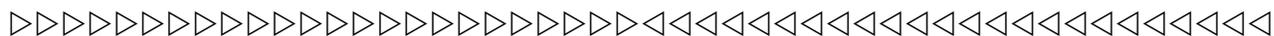
**Personal Precautions:** Refer to section 8.

**Environment Precautions:** Refer to section 13.

**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.

#### 7. HANDLING AND STORAGE:

**Precautions for Safe Handling:** Keep away from heat. Keep away from sources of ignition. Empty containers pose a fire risk; evaporate the residue under a fume hood. Ground all equipment containing material. Do not breathe dust. Keep away from incompatibles such as oxidizing agents, acids, alkalis. Dispose of according to Federal, State, Local and OSHA regulations.



**Conditions for Safe Storage:** Keep container tightly closed. Keep container in a cool, well-ventilated area. Do not store above 25°C (77°F).

**8. 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.

**EN 12477: Protection gloves for welders**

Requirements (EN Levels)	Type A	Type B
Abrasion (Cycles)	2 (500)	1 (100)
Cut (Factor)	1 (1.2)	1 (1.2)
Tear (Newton)	2 (25)	1 (10)
Puncture (Newton)	2 (60)	1 (20)
Burning Behaviour	3	2
Contact Heat	1	1
Convective Heat	2	-
Small Splashes	3	2
Dexterity	1 (11)	4 (6.5)

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.

Class 1	
Impact of Spatter	15 Drops
Heat Transfer (radiation)	RHTI 24 ≥ 7 seconds
Process	<p>Manual welding with light formation of spatter and drops</p> <ul style="list-style-type: none"> <li>• Gas Welding</li> <li>• TIG Welding</li> <li>• MIG Welding</li> <li>• Micro plasma welding</li> <li>• Brazing</li> <li>• Spot Welding</li> <li>• MMA Welding (with rutile-covered electrode)</li> </ul>



<b>Environmental Conditions</b>	<p style="text-align: center;"><b>Operation of machines</b></p> <ul style="list-style-type: none"> <li>• Oxygen cutting machines</li> <li>• Plasma cutting machines</li> <li>• Resistance welding machines</li> <li>• Machines for thermal spraying</li> <li>• Bench welding</li> </ul>
---------------------------------	---

<b>Class 2</b>	
<b>Impact of Spatter</b>	<b>25 Drops</b>
<b>Heat Transfer (radiation)</b>	<b>RHTI 24 ≥ 16 seconds</b>
<b>Process</b>	<p style="text-align: center;"><b>Manual welding with heavy formation of spatter and drops</b></p> <ul style="list-style-type: none"> <li>• MMA welding (with basic or cellulose-covered electrodes)</li> <li>• MAG welding (with CO2 or mixed gases)</li> <li>• MIG Welding (with high current)</li> <li>• Self shielded flux core arc welding</li> <li>• Plasma cutting</li> <li>• Gouging</li> <li>• Oxygen cutting</li> <li>• Thermal spraying</li> </ul>
<b>Environmental Conditions</b>	<p style="text-align: center;"><b>Operation of machines</b></p> <ul style="list-style-type: none"> <li>• In confined spaces</li> <li>• At overhead welding/cutting or in comparable constrained positions</li> </ul>

**9. PHYSICAL AND CHEMICAL PROPERTIES:**

**Appearance:** Solid

**Color:** Lustrous Silver 3112/ None 3115/ None

**Odour:** Odourless

**Odour Threshold:** Not Available

**pH Value:** Not Available

**Specific Gravity:** 2697 lbs/in<sup>3</sup>

**Melting Point/Melting Range:** 430° F, 221° C

**Freezing Point:** Not Available

**Boiling Point/Boiling Range:** Sn@ 4120° F, 2270° C

Ag@ 4010° F, 2210° C

Flux = 385° F, 251.66° C

**Flash point:** Not Available

**Evaporation Rate:** Not Available

**Self-in flammability:** Not Available

**Explosion limits:** Not Available

**Vapour pressure:** Not Available

**Vapour density:** Not Available

**Density at 20°C:** Not Available

**Relative density:** 6- 9 g/cm<sup>3</sup>

**Solubility:** Insoluble in water.

**Partition coefficient:** Not Available

**Auto-ignition temperature:** Not Available

**Decomposition temperature:** Not Available

**Other Information:** No available data.

**10. STABILITY AND REACTIVITY:**





