



Health	1
Flammability	0
Reactivity	0
Personal Protection	E

**SAFETY DATA SHEET**  
**Asahi Cored Lead Free Solder Wire**  
**Viromet 349 (Core Flux : CLF5043)**  
*MSDS #: EHC 2 – 18/8*  
*Date of Preparation: February 2013*

**SECTION 1: CHEMICAL PRODUCT & COMPANY IDENTIFICATION**

**1.1 Product Details:**

Product Name : Asahi Cored Flux Lead-Free Solder Wire  
Trade Name : Asahi Cored Flux Lead-Free Solder Wire Viromet 349 (Core Flux : CLF5043)  
Use : Cored flux solder wire may be used for manual soldering or in repair and rework for electrical or electronic assemblies.

**1.2 Company's Identification:**

Manufacturer's Name and Address : Singapore Asahi Chemical & Solder Industries Pte Ltd  
47 Pandan Road  
Singapore 609288

Telephone : (65) 6262-1616  
Facsimile : (65) 6261-6311

**1.3 Contact Point:**

Designation : Chemist  
Emergency Telephone Number: (65) 6262-1616

**SECTION 2: HAZARD IDENTIFICATION**

**GHS classification**

Acute Toxicity - Oral : Classification 4  
- Inhalation : Classification 4  
Sensitization - Skin : Classification 1  
- Respiratory : Classification 1

**GHS label elements**



**GHS Signal Word**

**: Danger**

**GHS Hazard Statement:** H303 Harmful if swallowed  
H332 Harmful if inhaled  
H317 May cause an allergic skin reaction  
H334 May cause allergy or asthma symptoms or breathing difficulties if inhaled

**GHS Precautionary Statement:**

**Prevention**

P202 Do not handle until all safety precautions have been read and understood.  
P261 Avoid breathing dust, fume, gas, mist and vapours.  
P264 Wash hands thoroughly after handling.  
P270 Do not eat, drink or smoke when using this product.  
P271 Use only outdoors or in a well-ventilated area.  
P272 Contaminated work clothing should not be allowed out of the workplace.  
P280 Wear protective gloves.  
P285 In case of inadequate ventilation wear respiratory protection.

**Response**

P301, P312, P330 IF SWALLOWED: Rinse mouth, call a POISON CENTER or doctor/physician if you feel unwell.  
P302, P352 IF ON SKIN: Wash with plenty of soap and water.  
P304, P341 IF INHALED: If breathing is difficult, remove victim to fresh air and keep at rest in a position comfortable for breathing.  
P333, P313 If skin irritation or rash occurs: Get medical advice or attention.  
P342, P311 If experience respiratory symptoms: Call a POISON CENTER or doctor/physician.  
P363 Wash contaminated clothing before reuse.

**Storage**

P410 Protect from sunlight.

**Disposal**

P501 Dispose of contents or container to appropriate waste site in accordance with local and national regulations.

**Other Hazards which do not result in Classification** : Intake of tin may cause vomiting, diarrhea and depression of the central nervous system with symptoms like fatigue, headache and ataxia. Inhalation of soldering fumes may cause irritation to the respiratory tract and may lead to central nervous system effects (drowsiness, dizziness, headache and nausea).

**Effect on Environment** : No relevant information found.

**SECTION 3: COMPOSITION/INFORMATION ON MATERIAL**

Chemical Name	CAS No.	%	OSHA PEL (mg/m <sup>3</sup> )	ACGIH TLY (mg/m <sup>3</sup> )	Other Limits Recommended
Tin (Sn)	7440-31-5	REM	2.0	2.0	
Silver (Ag)	7440-22-4	4.1 ± 0.2	0.1 (powder/dust)	0.1 (powder/dust)	
Copper (Cu)	7440-50-8	0.5 ± 0.1	1.0	1.0	
Indium (In)	7440-74-6	4.0 ± 0.2	0.1	0.1	
Other Ingredients					
<b>Flux % in Core Wire</b>		3			
<b>Flux Composition:</b>					
Resin		80-85			
Activators		8-12			
Solvent		Rem.			
<b>Total</b>		<b>100</b>			

**SECTION 4: FIRST AID MEASURES**

- Ingestion : Seek medical attention.  
Eye Contact : Flush eyes with plenty of water immediately for at 15 minutes. Seek medical attention.  
Skin Contact : Wash thoroughly with soap and warm water.  
Inhalation : Evacuate to a safe area with fresh air.

**SECTION 5: FIRE-FIGHTING MEASURES**

- Extinguishing Media : NA  
Fire Fighting Instructions : NA  
Special Hazards : NA  
Unusual Fire and Explosion Hazards : Flux may burn if soldering is done with a flame.

**SECTION 6: ACCIDENTAL RELEASE MEASURES**

- Leak/Spill : Place into properly labeled waste container and may be sent for recovery following appropriate recovery routes or methods.

**SECTION 7: HANDLING AND STORAGE**

- Handling : Wash hand thoroughly with soap and water prior to eating, drinking or smoking. Do not smoke while soldering. Avoid inhalation of vapors and contact with skin and eyes. Observe good industrial practices.  
Storage : Store in a cool environment away from oxidizing agents.

## SECTION 8: EXPOSURE CONTROL AND PERSONAL PROTECTION

- Engineering Measures : Maintain general or local exhaust ventilation to meet exposure limit requirements.
- Personal Protection : Operator should be protected from soldering fumes
- PROTECTIVE GLOVES : Impervious rubber
- EYE PROTECTION : Safety glasses

## SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

- Appearance : Metallic coil with flux in the center of the coil.
- Odor : No odor.
- Solubility in water: : Insoluble (flux)
- Boiling Point(°C) : NA (solder); 124°C (flux)
- Melting Point(°C) : 205-210°C (solder)
- Vapor Pressure(mm of Hg at 20°C) : NA
- Vapour Density (air=1) : NA
- Percentage Volatiles (by Volume) : NA
- Volatile Organic Compound (VOC) : NA
- Evaporation Rate (butyl acetate=1) : NA
- Specific Gravity (water=1 at 25°C) : 7.40 (solder)
- Flash Point (°C) : NE
- Auto-ignition Temperature(°C) : NE

## SECTION 10: PHYSICAL HAZARDS (STABILITY AND REACTIVITY)

- Condition to avoid : Unknown
- Incompatibles : Oxidizing materials
- Decomposition products : Unknown
- Hazardous polymerization : Will not occur

## SECTION 11: TOXICOLOGICAL INFORMATION

- Toxicity data : Chronic copper poisoning is only known as Wilson's disease (accumulation of copper in liver cells.)
- Carcinogenicity : Not listed
- Reproductive Effect : Silver has a potential risk for developing foetus if the mother was exposed to silver compounds.
- Effects of overexposure (Chronic Effect): Breathing of vapors may produce respiratory irritation. Long term inhalation of tin and insoluble tin compounds may cause tin dust lungs (stannosis). Long term exposure to copper may give slight adverse effects in the liver and kidneys and it may pass the brain-blood barrier and possibly cause neurological symptoms. Exposure to silver has resulted in argyria (permanent bluish discoloration of tissues and organs in which silver is deposited.)
- Target Organs : Respiratory system
- Medical Conditions Generally Aggravated by Exposure : Soldering fumes may irritate the eyes.

## **SECTION 12: ECOLOGICAL INFORMATION**

Mobility & Bioaccumulation : Non volatile material  
Biodegradability : Non biodegradable  
Aquatic Toxicity : Organic and inorganic tin compounds are toxic to the aquatic ecosystems. Silver is toxic to aquatic organisms. Copper inhibits algae growth.

## **SECTION 13: DISPOSAL INFORMATION**

Dispose according to federal, state and local regulations. This product is suitable for recovery following appropriate recovery routes or methods. If in doubt, contact Singapore Asahi.

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## **SECTION 14: TRANSPORT INFORMATION**

UN Number : NA  
T.D.G. Classification : NA  
Packing group : NA  
Special shipping instruction : NA

## **SECTION 15: REGULATORY INFORMATION**

- a. Proposed classification : Harmful
- b. Risk phrase
  - R20/21/22 Harmful by inhalation, in contact with skin and if swallowed.
  - R36/37/38 Irritating to the eyes, respiratory system and skin.
- c. Safety phrase
  - S23 Do not breath fume or vapor.
  - S24/25/26 Avoid contact with skin or eyes. In case of contact with skin, rinse immediately with plenty of water.
  - S36/37/39 Wear suitable protective clothing, gloves and eye/face protection.
  - S59 Refer to manufacturer/supplier for information on recovery/recycling.

## **SECTION 16: OTHER INFORMATION**

THIS INFORMATION RELATES ONLY TO THE SPECIFIC MATERIAL DESIGNATED AND MAY NOT BE VALID FOR SUCH MATERIAL USED IN COMBINATION WITH ANY OTHER MATERIALS OR IN ANY PROCESS. SUCH INFORMATION IS TO THE BEST OF THE COMPANY'S KNOWLEDGE AND BELIEVED ACCURATE AND RELIABLE AS OF THE DATE INDICATED.

HOWEVER, NO REPRESENTATION, WARRANTY OR GUARANTEE IS MADE AS TO ITS ACCURACY, RELIABILITY OR COMPLETENESS. IT IS THE USER'S RESPONSIBILITY TO SATISFY HIMSELF AS TO THE SUITABILITY AND COMPLETENESS OF SUCH INFORMATION FOR HIS OWN PARTICULAR USE.

\*optional

NE = Not Established

NA = Not Applicable

PEL = Permissible Exposure Level