SAFETY DATA SHEET

Section 1. Identification : Alloy SAC305 NC 254 **GHS** product identifier : GHS003 **Reference number** Other means of : Not available. identification **Product type** : Solid. [Solder Paste] Relevant identified uses of the substance or mixture and uses advised against Not applicable. **Supplier's details** : AIM 9100 Henri Bourassa East Montreal, QC H1E 2S4 (514) 494-2000 In the United States: AIM 25 Kenney Drive Cranston, RI 02920 (800) CALL-AIM In México AIM Soldadura de México Circuito Interior Norte # 460 Parque Industrial Salvarcar Ciudad Juárez, Chih. (656) 630-0032 : INFOTRAC **Emergency telephone** number (with hours of North America: (800) 535-5053 operation) International: (352) 323-3500 Section 2. Hazards identification

OSHA/HCS status	: This material is considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200).
Classification of the substance or mixture	: SKIN SENSITIZATION - Category 1
GHS label elements	

Hazard pictograms

Date of issue/Date of revision



: 3/4/2020

Signal word	: Warning
Hazard statements	: May cause an allergic skin reaction.
Precautionary statements	
Prevention	: Wear protective gloves. Avoid breathing dust. Contaminated work clothing must not be allowed out of the workplace.
Response	: IF ON SKIN: Wash with plenty of soap and water. Wash contaminated clothing before reuse. If skin irritation or rash occurs: Get medical attention.
Storage	: Not applicable.

Date of previous issue

: 3/3/2020



Version : 0.06

Section 2. Hazards identification

Disposal

: Dispose of contents and container in accordance with all local, regional, national and international regulations.

Hazards not otherwise classified

Section 3. Composition/information on ingredients

: None known.

Substance/mixture	: Mixture
Other means of	: Not available.
identification	

Ingredient name	%	CAS number
Tin	≥75 - ≤90	7440-31-5
Rosin	≤5	65997-06-0
silver	≤3	7440-22-4
2-ethylhexane-1,3-diol	≤3	94-96-2
Amine Decanoic Acid Salt	≤1	-
copper	≤1	7440-50-8

Any concentration shown as a range is to protect confidentiality or is due to batch variation.

There are no additional ingredients present which, within the current knowledge of the supplier and in the concentrations applicable, are classified as hazardous to health or the environment and hence require reporting in this section.

Occupational exposure limits, if available, are listed in Section 8.

Section 4. First aid measures

Description of necess	ary first aid measures	
Eye contact	 Immediately flush eyes with plenty of water, occasionally lifting the upper and lower eyelids. Check for and remove any contact lenses. Continue to rinse for at least 10 minutes. Get medical attention if irritation occurs. 	
Inhalation	: Remove victim to fresh air and keep at rest in a position comfortable for breathing. If not breathing, if breathing is irregular or if respiratory arrest occurs, provide artificial respiration or oxygen by trained personnel. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation. Get medical attention if adverse health effects persist or are severe. If unconscious, place in recovery position and get medical attention immediately. Maintain an open airway. Loosen tight clothing such as a collar, tie, belt or waistband.	
Skin contact	: Wash with plenty of soap and water. Remove contaminated clothing and shoes. Wash contaminated clothing thoroughly with water before removing it, or wear gloves. Continue to rinse for at least 10 minutes. Get medical attention. In the event of any complaints or symptoms, avoid further exposure. Wash clothing before reuse. Clean shoes thoroughly before reuse.	
Ingestion	: Wash out mouth with water. Remove dentures if any. Remove victim to fresh air and keep at rest in a position comfortable for breathing. If material has been swallowed and the exposed person is conscious, give small quantities of water to drink. Stop if the exposed person feels sick as vomiting may be dangerous. Do not induce vomiting unless directed to do so by medical personnel. If vomiting occurs, the head should be kept low so that vomit does not enter the lungs. Get medical attention if adverse health effects persist or are severe. Never give anything by mouth to an unconscious person. If unconscious, place in recovery position and get medical attention immediately. Maintain an open airway. Loosen tight clothing such as a collar, tie, belt or waistband.	
Most important symptoms/effects, acute and delayed		

Potential acute health	<u>effects</u>
Eye contact	: No known significant effects or critical hazards.
Inhalation	: No known significant effects or critical hazards.
Skin contact	: May cause an allergic skin reaction.

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Date	ot issu	ie/Date	ot I	revision

: 3/4/2020

2020

2/12

Section 4. First aid measures

Ingestion	: No known significant effects or critical hazards.
Over-exposure signs/symp	<u>otoms</u>
Eye contact	: No specific data.
Inhalation	: No specific data.
Skin contact	: Adverse symptoms may include the following: irritation redness
Ingestion	: No specific data.
Indication of immediate me	dical attention and special treatment needed, if necessary
Notes to physician	 Treat symptomatically. Contact poison treatment specialist immediately if large quantities have been ingested or inhaled.
Specific treatments	: No specific treatment.
Protection of first-aiders	: No action shall be taken involving any personal risk or without suitable training. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation. Wash contaminated clothing thoroughly with water before removing it, or wear gloves.

See toxicological information (Section 11)

Section 5. Fire-fighting measures		
Extinguishing media		
Suitable extinguishing media	: Use an extinguishing agent suitable for the surrounding fire.	
Unsuitable extinguishing media	: None known.	
Specific hazards arising from the chemical	: No specific fire or explosion hazard.	
Hazardous thermal decomposition products	: Decomposition products may include the following materials: carbon dioxide carbon monoxide metal oxide/oxides	
Special protective actions for fire-fighters	: Promptly isolate the scene by removing all persons from the vicinity of the incident if there is a fire. No action shall be taken involving any personal risk or without suitable training.	
Special protective equipment for fire-fighters	: Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode.	

Section 6. Accidental release measures

Personal precautions, protective equipment and emergency procedures			
For non-emergency personnel	:	No action shall be taken involving any personal risk or without suitable training. Evacuate surrounding areas. Keep unnecessary and unprotected personnel from entering. Do not touch or walk through spilled material. Provide adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Put on appropriate personal protective equipment.	
For emergency responders	:	If specialized clothing is required to deal with the spillage, take note of any information in Section 8 on suitable and unsuitable materials. See also the information in "For non-emergency personnel".	
Environmental precautions	:	Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers. Inform the relevant authorities if the product has caused environmental pollution (sewers, waterways, soil or air).	

Section 6. Accidental release measures

Methods and materials for containment and cleaning up

Small spill	: Move containers from spill area. Avoid dust generation. Using a vacuum with HEPA filter will reduce dust dispersal. Place spilled material in a designated, labeled waste container. Dispose of via a licensed waste disposal contractor.
Large spill	: Move containers from spill area. Approach release from upwind. Prevent entry into sewers, water courses, basements or confined areas. Avoid dust generation. Do not dry sweep. Vacuum dust with equipment fitted with a HEPA filter and place in a closed, labeled waste container. Dispose of via a licensed waste disposal contractor. Note: see Section 1 for emergency contact information and Section 13 for waste disposal.

Section 7. Handling and storage

Precautions for safe handling	
Protective measures	Put on appropriate personal protective equipment (see Section 8). Persons with a history of skin sensitization problems should not be employed in any process in which this product is used. Do not get in eyes or on skin or clothing. Do not ingest. Keep in the original container or an approved alternative made from a compatible material, kept tightly closed when not in use. Empty containers retain product residue and can be hazardous. Do not reuse container.
Advice on general occupational hygiene	Eating, drinking and smoking should be prohibited in areas where this material is handled, stored and processed. Workers should wash hands and face before eating, drinking and smoking. Remove contaminated clothing and protective equipment before entering eating areas. See also Section 8 for additional information on hygiene measures.
Conditions for safe storage, including any incompatibilities	Store in accordance with local regulations. Store in original container protected from direct sunlight in a dry, cool and well-ventilated area, away from incompatible materials (see Section 10) and food and drink. Keep container tightly closed and sealed until ready for use. Containers that have been opened must be carefully resealed and kept upright to prevent leakage. Do not store in unlabeled containers. Use appropriate containment to avoid environmental contamination. See Section 10 for incompatible materials before handling or use.

Section 8. Exposure controls/personal protection

Control parameters

Occupational exposure limits

Ingredient name		Exposure limits		
Tin Rosin silver		ACGIH TLV (United States, 3/2019). TWA: 2 mg/m ³ , (as Sn) 8 hours. Form: Inhalable fraction NIOSH REL (United States, 10/2016). TWA: 2 mg/m ³ 10 hours. OSHA PEL (United States, 5/2018). TWA: 2 mg/m ³ , (as Sn) 8 hours. None. OSHA PEL 1989 (United States, 3/1989). TWA: 0.01 mg/m ³ , (as Ag) 8 hours. ACGIH TLV (United States, 3/2019). TWA: 0.1 mg/m ³ 8 hours. Form: Dust and fumes OSHA PEL (United States, 5/2018). TWA: 0.01 mg/m ³ , (as Ag) 8 hours.		
		NIOSH REL (United St TWA: 0.01 mg/m³, (as METAL DUST AND SO	Ag) 10 hours. Forr	n:
2-ethylhexane-1,3-diol Amine Decanoic Acid Salt copper		None. None. ACGIH TLV (United St TWA: 1 mg/m³, (as Cu	· · · ·	ust
Date of issue/Date of revision : 3/4/2020	Date of previous issue	: 3/3/2020	Version : 0.06	4/12

Section 8. Exposure controls/personal protection

C C F F C C C	and mist TWA: 0.2 mg/m ³ 8 hours. Form: Fume OSHA PEL 1989 (United States, 3/1989). TWA: 1 mg/m ³ , (as Cu) 8 hours. Form: Dusts and Mists TWA: 0.1 mg/m ³ , (as Cu) 8 hours. Form: Fume NIOSH REL (United States, 10/2016). TWA: 1 mg/m ³ , (as Cu) 10 hours. Form: Dusts and Mists OSHA PEL (United States, 5/2018). TWA: 1 mg/m ³ 8 hours. Form: Dusts and Mists TWA: 0.1 mg/m ³ 8 hours. Form: Fume
	TWA: 0.1 mg/m ³ 8 hours. Form: Fume

Appropriate engineering	: Good general ventilation should be sufficient to control worker exposure to airborne
controls	contaminants.
Environmental exposure	: Emissions from ventilation or work process equipment should be checked to ensure

Environmental exposure controls

Emissions from ventilation or work process equipment should be checked to ensure they comply with the requirements of environmental protection legislation. In some cases, fume scrubbers, filters or engineering modifications to the process equipment will be necessary to reduce emissions to acceptable levels.

Individual	protection	measures

Hygiene measures	: Wash hands, forearms and face thoroughly after handling chemical products, before eating, smoking and using the lavatory and at the end of the working period. Appropriate techniques should be used to remove potentially contaminated clothing. Contaminated work clothing should not be allowed out of the workplace. Wash contaminated clothing before reusing. Ensure that eyewash stations and safety showers are close to the workstation location.
Eye/face protection	: Safety eyewear complying with an approved standard should be used when a risk assessment indicates this is necessary to avoid exposure to liquid splashes, mists, gases or dusts. If contact is possible, the following protection should be worn, unless the assessment indicates a higher degree of protection: safety glasses with side-shields.
Skin protection	
Hand protection	: Chemical-resistant, impervious gloves complying with an approved standard should be worn at all times when handling chemical products if a risk assessment indicates this is necessary. Considering the parameters specified by the glove manufacturer, check during use that the gloves are still retaining their protective properties. It should be noted that the time to breakthrough for any glove material may be different for different glove manufacturers. In the case of mixtures, consisting of several substances, the protection time of the gloves cannot be accurately estimated.
Body protection	: Personal protective equipment for the body should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.
Other skin protection	 Appropriate footwear and any additional skin protection measures should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.
Respiratory protection	: Based on the hazard and potential for exposure, select a respirator that meets the appropriate standard or certification. Respirators must be used according to a respiratory protection program to ensure proper fitting, training, and other important aspects of use.

Section 9. Physical and chemical properties

Appearance	
Physical state	: Solid. [Solder Paste]
Color	: Not available.
Odor	: Not available.
Odor threshold	: Not available.
рН	: Not available.
Melting point	: Not available.
Boiling point	: Not available.
Flash point	: Not available.
Evaporation rate	: Not available.
Flammability (solid, gas)	: Not available.
Lower and upper explosive (flammable) limits	: Not available.
Vapor pressure	: Not available.
Vapor density	: Not available.
Relative density	: Not available.
Solubility	: Not available.
Solubility in water	: Not available.
Partition coefficient: n- octanol/water	: Not available.
Auto-ignition temperature	: Not available.
Decomposition temperature	: Not available.
Viscosity	: Not available.
Flow time (ISO 2431)	: Not available.

Section 10. Stability and reactivity

Reactivity	: No specific test data related to reactivity available for this product or its ingredients.
Chemical stability	: The product is stable.
Possibility of hazardous reactions	: Under normal conditions of storage and use, hazardous reactions will not occur.
Conditions to avoid	: No specific data.
Incompatible materials	: No specific data.
Hazardous decomposition products	: Under normal conditions of storage and use, hazardous decomposition products should not be produced.

Section 11. Toxicological information

Information on toxicological effects

Acute toxicity

Product/ingredient name	Result	Species	Dose	Exposure
Rosin	LD50 Oral LD50 Oral	Rat	5000 mg/kg 8400 mg/kg	-
2-ethylhexane-1,3-diol	LD50 Dermal LD50 Oral		2 g/kg 1400 mg/kg	- -

Irritation/Corrosion

6/12

Section 11. Toxicological information

Product/ingredient name	Result	Species	Score	Exposure	Observation
2-ethylhexane-1,3-diol	Eyes - Severe irritant Skin - Mild irritant	Rabbit Rabbit		20 mg 500 mg	-

Sensitization

Not available.

Mutagenicity

Not available.

Carcinogenicity

Not available.

Classification

Product/ingredient name	OSHA	IARC	NTP
Rosin	None.	4	-
Amine Decanoic Acid Salt	None.	4	-
copper	-	-	Known to be a human carcinogen.

Reproductive toxicity

Not available.

Teratogenicity

Not available.

Specific target organ toxicity (single exposure)

Not available.

Specific target organ toxicity (repeated exposure) Not available.

Aspiration hazard

Not available.

Information on the likely routes of exposure	:	Not available.
Potential acute health effects		
Eye contact	1	No known significant effects or critical hazards.
Inhalation	1	No known significant effects or critical hazards.
Skin contact	1	May cause an allergic skin reaction.
Ingestion	:	No known significant effects or critical hazards.

Symptoms related to the physical, chemical and toxicological characteristics

Eye contact	1	No specific data.		
Inhalation	:	No specific data.		
Skin contact	:	Adverse symptoms may include the following: irritation redness		
Ingestion	1	No specific data.		
Delayed and immediate effec	<u>ts</u>	and also chronic effects from short and long term exposure		
<u>Short term exposure</u>				
Potential immediate effects	:	Not available.		
Potential delayed effects	1	Not available.		

Date of issue/Date of revision

Long term exposure

: 3/4/2020

Date of previous issue

Section 11. Toxicological information

	5
Potential immediate effects	: Not available.
Potential delayed effects	: Not available.
Potential chronic health eff	iects
Not available.	
General	: Once sensitized, a severe allergic reaction may occur when subsequently exposed to very low levels.
Carcinogenicity	: No known significant effects or critical hazards.
Mutagenicity	: No known significant effects or critical hazards.
Teratogenicity	: No known significant effects or critical hazards.
Developmental effects	: No known significant effects or critical hazards.
Fertility effects	: No known significant effects or critical hazards.

Numerical measures of toxicity

Acute toxicity estimates

Route	ATE value
Oral	53235.83 mg/kg
Dermal	118518.52 mg/kg

Section 12. Ecological information

Toxicity

Product/ingredient name	Result	Species	Exposure
silver	Acute EC50 1.4 µg/l Marine water	Algae - Chroomonas sp.	4 days
	Acute EC50 0.24 µg/l Fresh water	Daphnia - Daphnia magna	48 hours
	Acute LC50 11 µg/l Fresh water	Crustaceans - Ceriodaphnia reticulata	48 hours
	Acute LC50 2.13 µg/l Fresh water	Fish - Pimephales promelas	96 hours
	Chronic NOEC 5 mg/l Marine water	Algae - Glenodinium halli	72 hours
2-ethylhexane-1,3-diol	Acute LC50 624000 µg/l Fresh water	Fish - Ictalurus punctatus - Fingerling	96 hours
copper	Acute EC50 1100 µg/l Fresh water	Aquatic plants - Lemna minor	4 days
	Acute EC50 2.1 µg/l Fresh water	Daphnia - Daphnia longispina - Juvenile (Fledgling, Hatchling, Weanling)	48 hours
	Acute IC50 13 μg/l Fresh water	Algae - Pseudokirchneriella subcapitata - Exponential growth phase	72 hours
	Acute IC50 5.4 mg/l Marine water	Aquatic plants - Plantae - Exponential growth phase	72 hours
	Acute LC50 0.072 µg/l Marine water	Crustaceans - Amphipoda - Adult	48 hours
	Acute LC50 7.56 µg/l Marine water	Fish - Periophthalmus waltoni - Adult	96 hours
	Chronic NOEC 2.5 µg/l Marine water	Algae - Nitzschia closterium - Exponential growth phase	72 hours
	Chronic NOEC 7 mg/l Fresh water	Aquatic plants - Ceratophyllum demersum	3 days
	Chronic NOEC 0.02 mg/l Fresh water	Crustaceans - Cambarus bartonii - Mature	21 days
	Chronic NOEC 2 µg/l Fresh water	Daphnia - Daphnia magna	21 days
	Chronic NOEC 0.8 µg/l Fresh water	Fish - Oreochromis niloticus - Juvenile (Fledgling, Hatchling, Weanling)	6 weeks

Section 12. Ecological information

Persistence and degradability

Not available.

Bioaccumulative potential

Product/ingredient name	LogPow	BCF	Potential
Rosin	3.42	-	low
silver	-	70	low

Mobility in soil

Soil/water partition	: Not available.
coefficient (Koc)	

Other adverse effects : No known significant effects or critical hazards.

Section 13. Disposal considerations

Disposal methods The generation of waste should be avoided or minimized wherever possible. Disposal of this product, solutions and any by-products should at all times comply with the requirements of environmental protection and waste disposal legislation and any regional local authority requirements. Dispose of surplus and non-recyclable products via a licensed waste disposal contractor. Waste should not be disposed of untreated to the sewer unless fully compliant with the requirements of all authorities with jurisdiction. Waste packaging should be recycled. Incineration or landfill should only be considered when recycling is not feasible. This material and its container must be disposed of in a safe way. Care should be taken when handling emptied containers that have not been cleaned or rinsed out. Empty containers or liners may retain some product residues. Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers.

Section 14. Transport information

	DOT Classification	TDG Classification	Mexico Classification	ADR/RID	IMDG	ΙΑΤΑ
UN number	Not regulated.	Not regulated.	Not regulated.	Not regulated.	Not regulated.	Not regulated
UN proper shipping name	-	-	-	-	-	-
Transport hazard class(es)	-	-	-	-	-	-
Packing group	-	-	-	-	-	-
Environmental hazards	No.	No.	No.	No.	No.	No.
Additional information	Reportable quantity 38095.2 lbs / 17295.2 kg. Package sizes shipped in quantities less than the product reportable quantity are not subject to	-	-	-	-	-

Section 14. Transport information					
	the RQ (reportable quantity) transportation requirements.				
	ns for user : Transpor				era that are

Special precautions for user : Transport within user's premises: always transport in closed containers that are upright and secure. Ensure that persons transporting the product know what to do in the event of an accident or spillage.

Transport in bulk according : Not available. to Annex II of MARPOL and the IBC Code

Section 15. Regulatory information

U.S. Federal regulations	: United States inventory (TSCA 8b): Not determined.		
Clean Air Act Section 112 (b) Hazardous Air Pollutants (HAPs)	: Listed		
Clean Air Act Section 602 Class I Substances	: Not listed		
Clean Air Act Section 602 Class II Substances	: Not listed		
DEA List I Chemicals (Precursor Chemicals)	: Not listed		
DEA List II Chemicals (Essential Chemicals)	: Not listed		
State regulations			
Massachusetts	: The following components are listed: TIN; SILVER		
New York	: The following components are listed: Silver		
New Jersey	: The following components are listed: TIN; SILVER; bis(2-butoxyethyl) ether		
Pennsylvania	 The following components are listed: TIN; SILVER COMPOUNDS; bis(2-butoxyethyl) ether 		
International regulations	re a Safe Harbor warning under California Prop. 65. <mark>tion List Schedules I, II & III Chemicals</mark>		
Montreal Protocol Not listed.			
Stockholm Convention on Not listed.	Persistent Organic Pollutants		
Rotterdam Convention on	Prior Informed Consent (PIC)		
Not listed.			
UNECE Aarhus Protocol or Not listed.	<u>POPs and Heavy Metals</u>		
<u>International lists</u> <u>National inventory</u>			
Date of issue/Date of revision	: 3/4/2020 Date of previous issue : 3/3/2020 Version : 0.06 10/12		

Section 15. Regulatory information

Australia	: Not determined.
Canada	: Not determined.
China	: Not determined.
Europe	: Not determined.
Japan	: Japan inventory (ENCS): Not determined. Japan inventory (ISHL): Not determined.
Malaysia	: Not determined
New Zealand	: Not determined.
Philippines	: Not determined.
Republic of Korea	: Not determined.
Taiwan	: Not determined.
Turkey	: Not determined.

Special

Section 16. Other information



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Copyright ©2001, National Fire Protection Association, Quincy, MA 02269. This warning system is intended to be interpreted and applied only by properly trained individuals to identify fire, health and reactivity hazards of chemicals. The user is referred to certain limited number of chemicals with recommended classifications in NFPA 49 and NFPA 325, which would be used as a guideline only. Whether the chemicals are classified by NFPA or not, anyone using the 704 systems to classify chemicals does so at their own risk.

Procedure used to derive the classification

	Classification	Justification
SKIN SENSITIZATION - Category 1		Calculation method
History		-
Date of printing	: 3/4/2020	
Date of issue/Date of revision	: 3/4/2020	
Date of previous issue	: 3/3/2020	
Version	: 0.06	
Key to abbreviations	: ATE = Acute Toxicity Estimate BCF = Bioconcentration Factor GHS = Globally Harmonized System of Classification IATA = International Air Transport Association IBC = Internediate Bulk Container IMDG = International Maritime Dangerous Goods LogPow = logarithm of the octanol/water partition co MARPOL = International Convention for the Prevent	efficient

Section 16. Other information

as modified by the Protocol of 1978. ("Marpol" = marine pollution) UN = United Nations

References

: Not available.

Indicates information that has changed from previously issued version.

Notice to reader

To the best of our knowledge, the information contained herein is accurate. However, neither the above-named supplier, nor any of its subsidiaries, assumes any liability whatsoever for the accuracy or completeness of the information contained herein.

Final determination of suitability of any material is the sole responsibility of the user. All materials may present unknown hazards and should be used with caution. Although certain hazards are described herein, we cannot guarantee that these are the only hazards that exist.