CHIP QUIK, INC.
The SMD Removal Solution
195 Falmouth Road Unit 1C
Mashpee, MA 02649

CHIP QUIK®
No-Clean Paste Flux
SMD 2000

1 CC Syringe

Section 1. Product and Company Identification

NC 291AX	20523
	2000-08-03
Paste flux (No Clean)	1

Not available.

Industrial applications: Electronics industry. Soldering paste medium

AIM

AIM
9100 Henri-Bourassa east
Montreal, Quebec, Canada, H1E 2S4, (514) 494-2000

INFOTRAC
(North America): (800) 535-5053
(International): (352) 323-3500

Section 2. Hazardous Components

1) Polymerized rosin	65997-05-9	30-60	TWA: 15 (mg/m³) from OSHA (PEL) [United States] INHALATION Respirable.
2) Diethylene glycol monobutyl ether	112-34-5	15-40	ORAL (LD50): Acute: 2400 mg/kg [Mouse]. 5660 mg/kg [Rat]. 2400 mg/kg [Mouse]. DERMAL (LD50): Acute: 4120 mg/kg [Rabbit].
3) Diethylene glycol dibutyl ether	112-73-2	15-40	ORAL (LD50): Acute: 3900 mg/kg [Rat].
4) Rosin	8050-09-7	5-10	* (see section 11)

Section 3. Hazards Identification

Liquid. (Pasty)

WARNING!

Keep away from heat, sparks and flame. Avoid contact with eyes DO NOT ingest. Do not breathe vapor or mist. Avoid prolonged or repeated contact with skin. Keep container closed. Use only with adequate ventilation. Wash thoroughly after handling.

Ingestion. Inhalation.

This product may be hazardous in case of eye contact (irritant).

This product may be hazardous in case of skin contact (irritant, sensitizer). Skin inflammation is characterized by itching, scaling, reddening, or, occasionally, blistering.

Fumes and/or dusts produced by this product may be hazardous in case of inhalation.

Fumes and/or dusts produced by this product may be hazardous in case of ingestion.

Fumes and/or dusts produced by this product may be hazardous in case of ingestion, .
This product may be hazardous in case of skin contact (irritant, sensitizer, permeator), of inhalation (lung sensitizer).

Repeated exposure to toxic material may produce general deterioration of health by an accumulation in one or many human organs.

Not available.

Continued on Next Page

Section 4. First Aid Measures

	Check for and remove any contact lenses. In case of contact, immediately flush eyes with plenty of water for at least 15 minutes. Get medical attention.
	In case of contact, immediately flush skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes. Cover the irritated skin with an emollient. Wash clothing before reuse. Thoroughly clean shoes before reuse. Get medical attention.
	Wash with a disinfectant soap and cover the contaminated skin with an anti-bacterial cream. Seek immediate medical attention.
	If inhaled, remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen Get medical attention immediately.
	Fumes in high concentrations: May be harmful if inhaled. Evacuate the victim to a safe area as soon as possible. If the victim is not breathing, perform mouth-to-mouth resuscitation. SEEK IMMEDIATE MEDICAL ATTENTION.
	If swallowed, do not induce vomiting unless directed to do so by medical personnel. Never give anything by mouth to an unconscious person. Loosen tight clothing such as a collar, tie, belt or waistband. Get medical attention immediately.
	Not available.
	Not available.

Section 5. Fire Fighting Measures

	Combustible.
	Not available
	Not available.
	Not available
	These products are carbon oxides (CO, CO2). Depending on conditions, some aliphatic aldehydes and carboxylic acids also may be formed.
	Slightly flammable in presence of open flames and sparks. Combustible in presence of heat, of oxidizing materials. Non-flammable in presence of shocks, of reducing materials, of combustible materials, of organic materials, of metals, of acids, of alkalis, of moisture.
	Risks of explosion of the product in presence of mechanical impact: Not available. Risks of explosion of the product in presence of static discharge: Not available.
	SMALL FIRE: Use DRY chemical powder. LARGE FIRE: Use water spray, fog or foam. DO NOT use water jet.
	Be sure to use an approved/certified respirator or equivalent.
	No additional remark.
	No additional remark.

Continued on Next Page

Section 6. Accidental Release Measures

Absorb with an inert material and put the spilled material in an appropriate waste disposal.

No specific data for large spill and leak according to our database.

Section 7. Handling and Storage

Wear suitable protective clothing. Use in a well ventilated area. When using do not eat, drink or smoke. Avoid contact with skin and eyes. After handling, always wash hands thoroughly with soap and water.

Keep container dry. Keep container tightly closed. Keep in a cool, well-ventilated place. Combustible materials should be stored away from extreme heat and away from strong oxidizing agents.

Section 8. Exposure Controls, Personal Protection

Provide exhaust ventilation or other engineering controls to keep the airborne concentrations of vapors below their respective threshold limit value. Ensure that eyewash stations and safety showers are proximal to the work-station location.

Safety glasses.

Lab coat.

Wear appropriate respirator when ventilation is inadequate. Be sure to use a MSHA/NIOSH approved respirator or equivalent.

Gloves (disposable, vinyl).

Not applicable.

*** Note:Suggested protective clothing may not be adequate for a specific process. Consult a specialist before using.**

No additional information

1) Rosin, polymerized. 2) ROSIN CORE SOLDER THERMAL DECOMPOSITION PRODUCTS	TWA: 15 (mg/m³) from OSHA (PEL) [United States] INHALATION Respirable. *(see section 11)

Section 9. Physical and Chemical Properties

Liquid. (Pasty)	Typical rosin. (Slight.)
Not applicable.	Not applicable
Not applicable.	Yellowish. (Light.)
Not applicable.	Weighted average: 1 (Water = 1)

Not available.

Weighted average: 362°C (683.6°f)

Weighted average: -19.02°C (-2.2°F)

Not available.

Continued on Next Page

	Not available
	Not available
	Volatile.
	Not available.
	Lower than 1 [Butyl acetate.]
	Not available
	Not available.
	Not available.
	Not available.
	Is not dispersed in cold water, hot water. See solubility in methanol, diethyl ether.
	Soluble in diethyl ether. Partially soluble in methanol. Insoluble in cold water, hot water.
	Not available.

Section 10. Stability and Reactivity

	The product is stable.
	Flammable under fire conditions.
	Not available.
	Not available.
	Will not occur.
	Slightly corrosive in presence of copper. Non-corrosive in presence of glass.
	Organic base medium is used to clean a metal surface (remove and prevent oxidation) to improve bonding with the solder.

Section 11. Toxicological Information

	Fumes and/or dusts produced by this product may be hazardous in case of ingestion, of inhalation. This product may be hazardous in case of skin contact (irritant, sensitizer), of eye contact (irritant). **CARCINOGENIC EFFECTS: [Rosin thermal decomposition product (as formaldehyde)]** - Classified + (Proven) by NIOSH. **MUTAGENIC EFFECTS:** Not available. **TERATOGENIC EFFECTS:** Not available. **DEVELOPMENTAL TOXICITY:** Not toxic. The product may be toxic to blood, kidneys, the nervous system, liver, upper respiratory tract, eye, lens or cornea, thyroid. Repeated or prolonged exposure to the substance can produce target organs damage. Repeated exposure to toxic material may produce general deterioration of health by an accumulation in one or many human organs.
	Acute oral toxicity (LD50): 2400 mg/kg [Mouse]. (Diethylene glycol monobutyl ether). Acute dermal toxicity (LD50): 4120 mg/kg [Rabbit]. (Diethylene glycol monobutyl ether).

Continued on Next Page

Repeated and prolonged contact with bare skin may cause an allergic reaction (sensitization) in susceptible individuals. Sensitive individuals may develop eczema and/or asthma on inhalation of fumes produced by this material.

Inhalation of smoke and fumes, at high temperatures, may cause an asthmatic reaction in some individuals.
Prolonged and repeated contact with bare skin may cause irritation or dermatitis.
*If this product is heated to temperatures sufficient to produce smoke or fumes, the TLV-TWA of 0.1 mg/m3 (as formaldehyde, as per ACGIH), for rosin core pyrolysis products should be observed.

No additional remark.

Section 12. Ecological Information

Not available.

Not available.

Not available.

Not available.

Possibly hazardous short term degradation products are not likely. However, long term degradation products may arise.

The products of degradation are less toxic than the product itself.

No additional remark.

Section 13. Disposal Considerations

Waste must be disposed of in accordance with federal, state and local environmental control regulations.

Not available.

Section 14. Transport Information

Not a DOT controlled material (United States).

Not regulated

Not applicable.

Not controlled under IMDG.

Not available.

Not controlled under ADR (Europe).

Not controlled under IATA.

Continued on Next Page

Section 15. Regulatory Information

Class: Sensitizing substance.
Class: Target organ effects.
Class: Combustible liquid having a flash point between 37.8°C (100°F) and 93.3°C (200°F).

TSCA 4(a) final test rules: Diethylene glycol monobutyl ether
TSCA 8(a) IUR: Diethylene glycol monobutyl ether
TSCA inventory: ALL COMPONENTS
TSCA 12(b) one time export: Diethylene glycol monobutyl ether
SARA 302/304/311/312 extremely hazardous substances: No products were found.
SARA 302/304 emergency planning and notification: No products were found.
SARA 302/304/311/312 hazardous chemicals: Diethylene glycol monobutyl ether; Diethylene glycol dibutyl ether; Rosin
SARA 311/312 MSDS distribution - chemical inventory - hazard identification: Diethylene glycol monobutyl ether: fire, immediate health hazard; Diethylene glycol dibutyl ether: fire, immediate health hazard, delayed health hazard; Rosin: immediate health hazard, delayed health hazard
SARA 313 toxic chemical notification and release reporting: Diethylene glycol monobutyl ether: 1%; Diethylene glycol dibutyl ether: 1%
Clean water act (CWA) 307: No products were found.
Clean water act (CWA) 311: No products were found.
Clean air act (CAA) 112 accidental release prevention: No products were found.
Clean air act (CAA) 112 regulated flammable substances: No products were found.
Clean air act (CAA) 112 regulated toxic substances: No products were found.

Pennsylvania RTK: Diethylene glycol monobutyl ether: (environmental hazard, generic environmental hazard); Diethylene glycol dibutyl ether: (environmental hazard, generic environmental hazard)
Minnesota: Rosin
New Jersey: Diethylene glycol monobutyl ether; Diethylene glycol dibutyl ether
California prop. 65: No products were found.

Not available.

R38- Irritating to skin.
41- Risk of serious damage to eyes.
42/43- May cause sensitization by inhalation and skin contact.

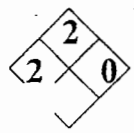
Australia (NICNAS): ALL COMPONENTS

Korea (TCCL): Diethylene glycol monobutyl ether; Diethylene glycol dibutyl ether; Polymerized rosin; Rosin

Philippines (RA6969): Diethylene glycol monobutyl ether; Diethylene glycol dibutyl ether; Polymerized rosin; Rosin

Section 16. Other Information

*	2
	2
Reactivity	0
Personal Protection	X



HARMFUL IF INHALED OR SWALLOWED.
CONTAINS MATERIAL WHICH CAUSES DAMAGE TO THE FOLLOWING ORGANS: BLOOD, KIDNEYS, NERVOUS SYSTEM, LIVER, RESPIRATORY TRACT, CRYSTALLINE LENS OR CORNEA, THYROID.
MAY CAUSE EYE IRRITATION.
MAY CAUSE ALLERGIC RESPIRATORY AND SKIN REACTION.
COMBUSTIBLE LIQUID AND VAPOR.
VAPOR MAY CAUSE FIRE.

Continued on Next Page

-ACGIH, Threshold Limit Values, 1994-1995. -Canada Gazette Part II, Vol. 122, No. 2 Registration SOR/88-64 31 December, 1987 Hazardous Products Act "Ingredient Disclosure List". -CFR29, OSHA's Permissible Exposure Limits, revision July, 1993. -CFR29, part 1910.1200, Hazard Communication. -CHEMTOX database -Components' manufacturer's Material Safety Data Sheet. -CRC Handbook of chemistry and physics, 67 th edition, CRC Press inc., Boca Raton, Florida. -CSST (Comission de Santé et Sécurité au Travail), document #RT-12: Classification of Certain Chemical Substances. -IATA, Dangerous Goods Regulations, 37th edition (January 1, 1996) -NFPA, Fire Protection Guide to Chemical Hazards, 11th edition. -NIOSH, Pocket Guide to Chemical Hazards, revision June 1994. Sigma-Alrich handbook of fine chemicals, 1998 -TSCA (Toxic Substance Contral Act), Chemical Substance Inventory List, 1985.

-ALL COMPONENTS WITH SUSCEPTIBLE HAZARDS THAT ARE PRESENT IN A CONCENTRATION GREATER THAN 1 % (GREATER THAN 0.1 % FOR CARCINOGENS) HAVE BEEN DISCLOSED IN THIS SAFETY DOCUMENT.

New document

Validated by C. Gosselin on 2000-08-03.	**Verified by C. Gosselin.** **Printed 2000-08-03.**

AIM
25 Kenney Drive, Rhode Island, USA, 02920
(401) 463-5605 (800) CALL AIM

SMD 2000

Solder Paste 63/37 w/flux

Material Safety Data Sheet

Protective Clothing	HCS	DOT
	HCS CLASS: DANGEROUS MAY CAUSE CANCER. HCS CLASS: Irritating substance. HCS CLASS: Target organ effects.	

Section I. Product Identification and Uses

Common/Trade name	Sn63 291AX
Synonyms	Sn63/Pb37 291 AX solder paste
Chemical name	Not applicable.
Chemical formula	Sn/Pb (metal)
Chemical family	Metallic/organic mixture (Inert material/Metal.)
Supplier	A.I.M. INC. 9100 Henri-Bourassa east, Montreal, Quebec, H1E 2S4 (514)494-2000
Material uses	Industrial applications: Electronics industry. Soldering

CI#	Not applicable.
DSL	Not available.
CAS#	Not applicable.
Code	SPSn63291AX
Molecular weight	Not applicable.
Manufacturer	A.I.M. Inc. 9100 Henri Bourassa east, Montreal, Quebec, H1E 2S4 (514)494-2000

Section IA. First Aid Measures

Eye contact	Fumes may cause eye irritation. Flush with plenty of water for at least 15 minutes, occasionally lifting the upper and lower eyelids. If irritation persists, seek medical attention.
Skin contact	Prolonged and repeated contact with bear skin may cause irritation. Wash gently and thoroughly the contaminated skin with running water and non-abrasive soap. If irritation persists, seek medical attention.
Hazardous skin contact	MOLTEN METAL causes SEVERE BURNS! In case of BURNS: DO NOT USE WATER. Cover with antiseptic ointment and steril gauze. Seek IMMEDIATE medical attention
Slight inhalation	Allow the victim to rest in a well ventilated area. Seek immediate medical attention.
Hazardous inhalation	Fumes: HARMFUL IF INHALED. Evacuate the victim to a safe area as soon as possible. If the victim is not breathing, perform mouth-to-mouth resuscitation. SEEK IMMEDIATE MEDICAL ATTENTION.
Slight ingestion	Remove dentures if any. Have conscious person drink several glasses of water or milk. INDUCE VOMITING by sticking finger in throat. Lower the head so that the vomit will not reenter the mouth and throat. NEVER give an unconscious person anything to ingest. Seek medical attention.
Hazardous ingestion	Fumes: Harmful if ingested. SEEK IMMEDIATE MEDICAL ATTENTION

Section II. Hazardous Ingredients

Name	CAS #	% by Weight	TLV/PEL	LC_{50}/LD_{50}
Lead	7439-92-1	31.0-36.0	TWA: 0.05 (mg/m³) from OSHA/NIOSH [1993]. TWA: 0.05 (mg/m³) from ACGIH [1991]	Not available
Diethylene glycol dibutyl ether	112-73-2	1.0-5.0	Not available	ORAL (LD50) mg/kg: Acute: 3900 (Rat).

Section III. Physical Data

Physical state and appearance	Solid. (Paste.)
pH (1% soln/water)	Not applicable.
Odor threshold	Not available
Volatility	Not available
Melting point	183°C (361.4°F) based on metal alloy. Weighted average. 290.9°C (555.6°F)

Odor	Typical rosin
Taste	Not applicable
Color	Dark grey

Continued on Next Page

Material Safety Data Sheet

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Odor threshold	Not available
Volatility	Not available
Melting point	183°C (361.4°F) based on metal alloy. Weighted average: 290.9°C (555.6°F)

Odor	Typical rosin
Taste	Not applicable
Color	Dark grey

Continued on Next Page

Boiling point	Not available.
Specific gravity	Weighted average: 5.36 (Water = 1)
Vapor density	Not available.
Vapor pressure	Not available.
Evaporation rate	Not applicable
Viscosity	35-120 Kcps
Water/oil dist. coeff.	Insoluble in water and oil.
Ionicity (surface active agent)	Non-ionic.
Critical temperature	Not available.
Instability temperature	330°C (626°F) based on data for: Lead.
Conditions of instability	Stable in normal conditions. Over melting point,will emit toxic lead and tin oxides fumes.
Dispersion properties	Is not dispersed in cold water, hot water, methanol, diethyl ether, n-octanol, acetone. See solubility in diethyl ether.
Solubility	Partially soluble in diethyl ether. Very slightly soluble in methanol. Insoluble in cold water, hot water, n-octanol, acetone. Partially soluble in isopropyl alcohol.

Section IV. Fire and Explosion Data

The product is:	Combustible.
Auto-ignition temperature	Not available.
Fire degradation products	These products are carbon oxides (CO, CO2). Some metallic oxides.
Flash points	Not available.
Flammable limits	Not available.
Fire extinguishing procedures	SMALL FIRE: Use DRY chemicals, CO2, water spray or foam. LARGE FIRE: Use water spray, fog or foam. DO NOT use water jet.
Flammability	Slightly flammable in presence of alkalis. Very slightly flammable in presence of open flames and sparks, of heat, of oxidizing materials. Non-flammable in presence of shocks, of reducing materials, of combustible materials, of organic materials, of metals, of acids, of moisture.
	Remark Metallic part of product is nonflammable. The organic part may be flammable if exposed to direct flame.
Risks of explosion	Risks of explosion of the product in presence of static discharge: Not available Non-explosive in presence of shocks, of heat.
	Remark No additional remark.

Section V. Reactivity Data

Stability	The product is stable.
Hazardous decomp. products	Not available.
Degradability	Not available.
Products of degradation	These products are carbon oxides (CO, CO2). Some metallic oxides The products of degradation are more toxic.
	Remark No additional remark.

Continued on Next Page

Corrosivity	Slightly corrosive in presence of copper. Non-corrosive in presence of glass, of steel, of aluminum, of zinc, of stainless steel(304), of stainless steel(316).
	Remark No additional remark.
Reactivity	Slightly reactive with oxidizing agents, acids, alkalis.
	Remark Incompatible with halogens and halogen trifluorides. (Tin)

Section VI. Toxicological Properties

Routes of entry	Ingestion. Inhalation.
TLV	Lead TWA: 0.05 (mg/m³) from OSHA/NIOSH [1993] TWA: 0.05 (mg/m³) from ACGIH [1991] Tin TWA: 2 (mg/m³) from ACGIH [1982] TWA: 2 (mg/m³) from OSHA/NIOSH [1993] Consult local authorities for acceptable exposure limits.
Toxicity to animals	Not available.
	Remark No additional remark.
Chronic effects on humans	FUMES: Extremely dangerous in case of ingestion, of inhalation. Very dangerous in case of eye contact (irritant). Slightly dangerous in case of skin contact (irritant, sensitizer). CARCINOGENIC EFFECTS: Classified 2A by IARC [Lead]. MUTAGENIC EFFECTS: Not available. TERATOGENIC EFFECTS: Classified 2A by IARC [Lead]. The substance is toxic to lungs, liver and reproductive system. Repeated or prolonged exposure to the substance can produce target organs damage.
	Remark Overexposure to fumes may cause severe irritation to the respiratory tract and to the eyes. Overexposure to tin oxide fumes may result in benigne penumoconiosis (stannosis).
Acute effects on humans	FUMES: Very dangerous in case of ingestion, of inhalation. Very dangerous in case of eye contact (irritant). Slightly dangerous in case of skin contact (irritant, sensitizer). This product may irritate eyes and skin upon contact. Inflammation of the eye is characterized by redness, watering, and itching.
	Remark Contact with skin can cause irritation. Contact with eyes can cause irritation. Fumes may irritate eyes, digestive system and respiratory tract.

Section VII. Preventive Measures

Waste disposal	Recycle to process, if possible. Consult your local or regional authorities.
Storage	Keep container dry. Keep in a cool place. Carcinogenic, teratogenic or mutagenic materials should be stored in a separate locked safety storage cabinet or room.
Precautions	Keep locked up. Keep away from heat. Keep away from sources of ignition. DO NOT ingest. DO NOT breathe dust. In case of insufficient ventilation, wear suitable respiratory equipment. If ingested, seek medical advice immediately and show the container or the label. Avoid contact with skin and eyes. Keep away from incompatibles as oxidizing agents, acids, alkalis.
Small spill and leak	MOLTEN METAL: Let cool before picking up and returning to process or recycling. OTHER: Use appropriate tools to put the spilled solid in a container reserved to that effect.
Large spill and leak	Our data base contains no additional information in case of a large spill and/or a leak of the product
Protective clothing in case of large spill	Splash goggles. Full suit. Dust respirator. Boots. Gloves. A self contained breathing apparatus should be used to avoid inhalation of the product. Suggested protective clothing might not be sufficient; consult a specialist BEFORE handling this product.

Continued on Next Page

Section VIII. Classification

DOT

Not a DOT controlled material (United States).

Not applicable (PIN and PG).

Remark

Not applicable.

HCS

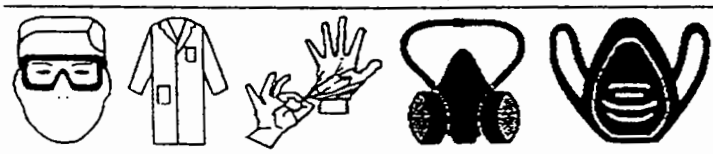
HCS CLASS: DANGEROUS MAY CAUSE CANCER.
HCS CLASS: Irritating substance.
HCS CLASS: Target organ effects.

Remark

No additional remark.

Section IX. Protective Clothing

Splash goggles. Lab coat. Gloves (disposable, vinyl). Fume respirator. Dust respirator. Be sure to use a MSHA/NIOSH approved respirator or equivalent. Wear appropriate respirator when ventilation is inadequate. Suggested protective clothing might not be sufficient; consult a specialist BEFORE handling this product.



Section X. Other Information

References

-Canada Gazette Part II, Vol. 122, No. 2 Registration SOR/88-64 31 December, 1987 Hazardous Products Act "Ingredient Disclosure List". -CFR29, OSHA's Permissible Exposure Limits, revision July, 1993. -CFR29, part 1910.1200, Hazard Communication. -Components' manufacturer's Material Safety Data Sheet. -CSST (Comission de Santé et Sécurité au Travail), document #RT-12: Classification of Certain Chemical Substances. -Material safety data sheet issued by: la Commission de la Santé et de la Sécurité du Travail du Québec. -NFPA, Fire Protection Guide to Chemical Hazards, 11th edition. -NIOSH, Pocket Guide to Chemical Hazards, revision June 1994. -TSCA (Toxic Substance Contral Act), Chemical Substance Inventory List, 1985.

-OSHA: Hazardous by definition of Hazard Communication Standard (29 CFR 1910.1200). -The following component(s) of this product is(are) subject to the reporting requirements of section 313 of Title III of SARA (Superfund Amendments and Reauthorization Act, 1988) and 40 CFR Part 372: LEAD. -This product is not regulated as hazardous by DOT, IMO, or IATA. -TSCA (Toxic Substance Control Act): The components of this product are listed on the TSCA Inventory. -ALL INGREDIENTS WITH SUSCEPTIBLE HAZARDS THAT ARE PRESENT IN A CONCENTRATION GREATER THAN 1 % (GREATER THAN 0.1 % FOR CARCINOGENS) HAVE BEEN DISCLOSED IN THIS SAFETY DOCUMENT.

Validated by C. Gosselin on 6/18/96.

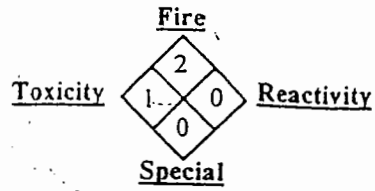
Verified by C. Gosselin.

Printed 6/18/96.

Emergency phone: Infotrac (800)535-5053 (USA), (708)918-1900 (International) ; (514)494-2000 (Canada)

JNJ Industries, Inc.
195 E. Main Street, Suite 303
Milford, MA 01757
Phone (800) 554-9994*Fax (508) 478-5290

HAZARD RATING
4 = Extreme
3 = High
2 = Moderate
1 = Slight
0 = Insignificant



MATERIAL SAFETY DATA SHEET

MATERIAL GlobalTech™ SEMI AQUEOUS FLUX REMOVER	CODE	KEY	HAZARD CLASS
		AFR	Combustible Liquid
FORMULA	**DATE ISSUED**	**CHEMICAL NAME OR SYNONYMS**	
NA	7/11/96	Aliphatic Glycol Ethers, DI Water	

I - APPROXIMATE COMPOSITIONAL INFORMATION

	APPROX. WEIGHT %	TWA/TLV
DI Water	<30.0	NE
Aliphatic Glycol Ethers	>63.0	100ppm OSHA 29 CFR 1910

II - PHYSICAL PROPERTY INFORMATION

APPEARANCE; ODOR; pH		VISCOSITY
Clear Liquid, Mild Odor		Water-Like
MELTING/FREEZING POINT	**BOILING POINT**	**VAPOR DENSITY (Air)=1)**
NE	208°F (98°C) @ 30mm Hg	3.0 - 4.0
SOLUBILITY IN WATER	**% VOLATILE (By Weight)**	**VAPOR PRESSURE (mm Hg)**
Complete @ 20° C	100%	16 - 18
SPECIFIC GRAVITY (Water = 1)	**EVAPORATION RATE (Butyl Acetate = 1)**	
0.97	NE	

III - FIRE AND EXPLOSION HAZARD INFORMATION

FLASH POINT	AUTO IGNITION TEMP	LOWER EXPLOSION LIMIT %	UPPER EXPLOSION LIMIT %
120°F (49°C), TCC	Will Not Occur	NA	NA

EXTINGUISHING MEDIA

___ Foam ___ "Alcohol" Foam _X_ CO_2 _X_ Dry Chemical _X_ Water Spray ___ Other

SPECIAL FIRE FIGHTING PROCEDURES
Wear self-contained breathing apparatus (SHA/NIOSH approved, pressure demand or equivalent) and full protective gear

UNUSUAL FIRE AND EXPLOSION HAZARDS
Under extreme conditions may produce floating fire hazard

IV - HEALTH HAZARD INFORMATION

RECOMMENDED WORK PLACE EXPOSURE LIMITS
1000 ppm

EFFECTS OF OVEREXPOSURE

Inhalation: Can irritate nose and throat. Prolonged or repeated exposure may cause headaches and palpitations
Eye Contact: Slightly irritating to eyes
Skin Contact: Slightly irritating upon prolonged or repeated contact
Ingestion: Possibly harmful if swallowed. May cause nausea, vomiting, dizziness, diarrhea

EMERGENCY AND FIRST AID PROCEDURES

Inhalation: Move subject to fresh air. Give artificial respiration if not breathing
Eye or Skin Contact: Flush with large amount of water for 15 mins, call physician. Remove contaminated clothing, wash before use
Ingestion: If conscious, drink 1 pint luke warm water. DO NOT induce vomiting. Obtain medical attention Immediately.

V - REACTIVITY INFORMATION

STABILITY	CONDITIONS TO AVOID
_X_ Stable ___ Unstable	Avoid heat, sparks, and flame

HAZARDOUS DECOMPOSITION PRODUCTS
Thermal Decomposition Generates Oxides of Carbon

HAZARDOUS POLYMERIZATION	CONDITIONS TO AVOID
___ May Occur _X_ Will Not Occur	NA

INCOMPATIBILITY (Materials To Avoid)
___ Water _X_ Other Strong: Oxidizers

VI - SPILL OR LEAK PROCEDURE INFORMATION

STEPS TO BE TAKEN IN CASE MATERIAL IS RELEASED OR SPILLED
Wear suitable protective equipment. Small spills may be collected with absorbent materials. For large spills flush area with water spray. Avoid discharge into sewers and waterways. Biodegradable in low aqueous concentrations. Follow personal protective equipment as in section VII

WASTE DISPOSAL METHODS
Incinerate where permitted under Federal, State, and Local regulations

VII - SPECIAL PROTECTION INFORMATION

VENTILATION TYPE
Use local exhaust ventilation to maintain vapor below TWA's. Also, see Section IV

RESPIRATORY PROTECTION
None required during normal use with adequate ventilation

PROTECTIVE GLOVES	EYE PROTECTION
Natural Rubber	Safety Glasses (ANSI Z-87.1 or equivalent)

OTHER PROTECTIVE EQUIPMENT
Eye Bath, Safety Shower

VIII - STORAGE AND HANDLING INFORMATION

STORAGE TEMPERATURE	INDOOR	HEATED	REFRIGERATED	OUTDOOR
Ambient	Ambient	NA	NA	Ambient

Avoid eye, skin and clothing contact. Keep away from children. Keep away from heat and flame. Use with adequate ventilation. Avoid inhalation of vapor or mist. Wash with soap and water after use

IX - TOXICITY INFORMATION

No Data: Components in this product are Non-Hazardous and do not require reporting under the Comprehensive Environmental and Liability Act (CERCLA) of 1980

X - MISCELLANEOUS INFORMATION

Ventilation Protection: Refer to current edition of "Industrial Ventilation; A Manual of Recommended Practice", ACGIH, for the design, installation, use, and maintenance of ventilation system

NA = Not Available NE = Non Established	KEY	DATE OF ISSUE	SUPERSEDES
	AFR	7/11/96	2/1/96

CHIP QUIK, INC.
The SMD Removal Solution
195 Falmouth Road Unit 1C
Mashpee, MA 02649

SMD 4.5

Material Safety Data Sheet

Section 1. Chemical Product and Company Identification

Common Name	AIM 58
Supplier	AIM
Synouym	Bi../In../Pb../Sn..
Trade name	AIM 58
Material Uses	Metal industry: Metallurgy. Low melting alloy
Manufacturer	AIM 9100 Henri-Bourassa east, Montreal, Quebec, H1E 2S4

Code	Not available.
MSDS#	Not available.
Validation Date	5/20/98
Print Date	8/20/99

In case of Emergency	USA: Infotrac (800)535-5053 INTERNATIONAL: Infotrac (708)918-1900 CANADA: not available

Section 2. Composition and Information on Ingredients

Name	CAS #	% by Weight	TLV/PEL	LC_{50}/LD_{50}
Indium	7440-74-6	10-30	TWA: 0.1 (mg/m³) from ACGIH (TLV) [1986] Total. TWA: 0.1 (mg/m³) from ACGIH TWA: 0.1 (mg/m³) from NIOSH	Not available.
Lead	7439-92-1	10-30	TWA: 0.05 (mg/m³) from ACGIH (TLV) TWA: 0.05 (mg/m³) from ACGIH TWA: 0.1 (mg/m³) from NIOSH	Not available.
Tin	7440-31-5	7-13	TWA: 2 STEL: 0.2 (mg/m³) from OSHA (PEL) [1997] Respirable. TWA: 2 (mg/m³) from OSHA (PEL) [1993] Respirable. TWA: 2 STEL: 0.2 (mg/m³) from ACGIH [1994] Respirable. TWA: 2 (mg/m³) from NIOSH	Not available.

Section 3. Hazards Identification

Routes of Entry

Eye contact. Ingestion. Inhalation. Skin contact.

Potential Acute Health Effects

Fumes and/or dusts produced by this product may be hazardous in case of eye contact (irritant), of ingestion, of inhalation. Inflammation of the eye is characterized by redness, watering, and itching. This product may be hazardous in case of skin contact (irritant, sensitizer).

Potential Chronic Health Effects

Fumes and/or dusts produced by this product may be hazardous in case of eye contact (irritant), of ingestion, of inhalation.
This product may be hazardous in case of skin contact (irritant, sensitizer).
CARCINOGENIC EFFECTS: [LEAD]: Classified + (Proven) by OSHA, A3 (Proven for animal) by ACGIH, 2B (Possible for human) by IARC.
MUTAGENIC EFFECTS: Not available.
TERATOGENIC EFFECTS: Not available.
DEVELOPMENTAL TOXICITY: PROVEN [Lead]
The product may be toxic to blood, kidneys, liver, heart, upper respiratory tract, skin, eyes, the nervous system, the reproductive system, spleen, brain, digestive system, gastro-intestinal tract, lungs.
Repeated or prolonged exposure to the substance can produce target organs damage. Repeated exposure to toxic material may produce general deterioration of health by an accumulation in one or many human organs.

Continued on Next Page

Section 4. First Aid Measures

Eye Contact	Check for and remove any contact lenses. DO NOT use an eye ointment. Seek medical attention.
Skin Contact	Prolonged and repeated contact with bare skin may cause irritation. Wash gently and thoroughly the contaminated skin with running water and non-abrasive soap.
Hazardous Skin Contact	MOLTEN METAL causes SEVERE BURNS! In case of BURNS: DO NOT USE WATER. Cover with antiseptic ointment and steril gauze. Seek IMMEDIATE medical attention.
Inhalation	Allow the victim to rest in a well ventilated area. Seek immediate medical attention.
Hazardous Inhalation	No additional information.
Ingestion	DO NOT induce vomiting. Examine the lips and mouth to ascertain whether the tissues are damaged, a possible indication that the toxic material was ingested; the absence of such signs, however, is not conclusive. Loosen tight clothing such as a collar, tie, belt or waistband. If the victim is not breathing, perform mouth-to-mouth resuscitation. Seek immediate medical attention.
Hazardous Ingestion	No additional information.

Section 5. Fire and Explosion Data

Flammability of the Product	Non-flammable.
Auto-Ignition Temperature	Not applicable.
Flash Points	Not applicable.
Flammable Limits	Not applicable.
Products of Combustion	Not applicable.
Fire Hazards in Presence of Various Substances	Not applicable.
Explosion Hazards in Presence of Various Substances	Non-explosive in presence of open flames and sparks, of shocks, of heat.
Fire Fighting Media and Instructions	Not applicable.
Special Remarks on Fire Hazards	Massive metal is nonflammable.
Special Remarks on Explosion Hazards	No additional remark.

Section 6. Accidental Release Measures

Small Spill	MOLTEN METAL: Let cool before picking up and returning to process or recycling. OTHER: Use appropriate tools to put the spilled solid in a container reserved to that effect.
Large Spill	MOLTEN METAL: Let cool before picking up and returning to process or recycling. OTHER: Use appropriate instruments to put the spilled material in a container reserved to that effect.

Section 7. Handling and Storage

Handling	Wear suitable protective clothing. Use in a well ventilated area. When using do not eat, drink or smoke. Avoid contact with skin and eyes. After handling, always wash hands thoroughly with soap and water.
Storage	Keep container tightly closed. Keep in a cool and well-ventilated area. Highly toxic or infectious materials should be stored in a separate locked safety storage cabinet or room.

Continued on Next Page

Section 8. Exposure Controls/Personal Protection

Engineering Controls	Use process enclosures, local exhaust ventilation, or other engineering controls to keep airborne levels below recommended exposure limits. If user operations generate dust, fume or mist, use ventilation to keep exposure to airborne contaminants below the exposure limit.
Personal Protection	HANDLING: gloves, safety glasses, dust respirator REMELTING: heat resistant gloves, splash goggles or face-shield, coveralls, dust and fume respirator. Wear suitable respirator if ventilation is inadequate. Be sure to use a MSHA/NIOSH approved respirator or equivalent.
Personal Protection in Case of a Large Spill	Splash goggles. Full suit. Dust respirator. Boots. Gloves. A self contained breathing apparatus should be used to avoid inhalation of the product. Suggested protective clothing might not be sufficient; consult a specialist BEFORE handling this product.

Chemical Name or Product Name	CAS #	Exposure Limits
Indium	7440-74-6	TWA: 0.1 (mg/m³) from ACGIH (TLV) [1986] Total TWA: 0.1 (mg/m³) from ACGIH TWA: 0.1 (mg/m³) from NIOSH
Lead	7439-92-1	TWA: 0.05 (mg/m³) from ACGIH (TLV) TWA: 0.05 (mg/m³) from ACGIH TWA: 0.1 (mg/m³) from NIOSH
Tin	7440-31-5	TWA: 2 STEL: 0.2 (mg/m³) from OSHA (PEL) [1997] Respirable TWA: 2 (mg/m³) from OSHA (PEL) [1993] Respirable TWA: 2 STEL: 0.2 (mg/m³) from ACGIH [1994] Respirable TWA: 2 (mg/m³) from NIOSH

Section 9. Physical and Chemical Properties

Physical state and appearance	Solid.
Molecular Weight	Not applicable.
pH (1% soln/water)	Not applicable.
Boiling Point	Not available.
Melting Point	58°C (136.4°F)
Critical Temperature	Not available.
Specific Gravity	9.24 (Water = 1)
Vapor Pressure	Not available
Vapor Density	Not available.
Volatility	Not available.
Odor Threshold	Not available.
Evaporation rate	Not available.
Viscosity	Not available.
Water/Oil Dist. Coeff.	The product is insoluble in water and oil.
Ionicity (in Water)	Non-ionic.
Dispersion Properties	Is not dispersed in cold water, hot water, methanol, diethyl ether, n-octanol, acetone.
Solubility	Insoluble in cold water, hot water, methanol, diethyl ether, n-octanol, acetone.
Physical Chemical Comments	Not available.

Odor	Odorless.
Taste	Not applicable.
Color	Silver-grey.

Section 10. Stability and Reactivity Data

Chemical Stability	The product is stable.
Conditions of Instability	Over melting point, toxic metallic oxides may be evolved.
Incompatibility with various substances	Molten metal reacts violently with water.
Hazardous Decomposition Products	Not available.
Hazardous Polymerization	No.

Continued on Next Page

Section 11. Toxicological Information

Toxicity to Animals	LD50: Not available. LC50: Not available.
Chronic Effects on Humans	CARCINOGENIC EFFECTS: [LEAD]: Classified + (Proven) by OSHA, A3 (Proven for animal) by ACGIH, 2B (Possible for human) by IARC. DEVELOPMENTAL TOXICITY: PROVEN [Lead] The product may be toxic to blood, kidneys, liver, heart, upper respiratory tract, skin, eyes, the nervous system, the reproductive system, spleen, brain, digestive system, gastro-intestinal tract, lungs.
Other Toxic Effects on Humans	Fumes and/or dusts produced by this product may be hazardous in case of eye contact (irritant), of ingestion, of inhalation. This product may be hazardous in case of skin contact (irritant, sensitizer).
Special Remarks on Toxicity to Animals	No additional remark.
Special Remarks on Chronic Effects on Humans	Human: LEAD crosses the placental barrier. CHRONIC OVEREXPOSURE EFFECTS; Increase of LEAD LEVEL in blood, muscle soreness, metallic taste, abdominal cramps, headaches. Overexposure to tin oxide fumes may result in benigne pneumoconiosis (stannosis). Overexposure to fumes may cause irritation to the respiratory tract, digestive system and to the eyes. Repeated and prolonged contact with bare skin may cause irritation, dermatitis and/or an allergic reaction (sensitization) in susceptible individuals.
Special Remarks on other Toxic Effects on Humans	MOLTEN METAL can cause severe BURNS!

Section 12. Ecological Information

Ecotoxicity	Not available.
BOD5 and COD	Not available.
Products of Biodegradation	Possibly hazardous short term degradation products are not likely. However, long term degradation products may arise.
Toxicity of the Products of Biodegradation	The products of degradation are more toxic.
Special Remarks on the Products of Biodegradation	No additional remark.

Section 13. Disposal Considerations

Waste Disposal	Recycle, if possible. Consult your local or regional authorities.

Section 14. Transport Information

DOT Classification	Not a DOT controlled material (United States).
Propper Shipping Name	Not applicable.
DOT Identification Number	Not applicable.
Packing Group	Not applicable.
Hazardous Substances Reportable Quantity	Not available.
Special Provisions for Transport	Not applicable.
TDG Classification	Not controlled under TDG (Canada).
IMDG Classification	Not controlled under IMDG.
IATA Classification	Not controlled under IATA.

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Section 15. Regulatory Information

Federal and State Regulations

California prop. 65: This product contains [LEAD] for which the State of California has found to cause cancer, birth defects or other reproductive harm (female, male), which would require a warning under the statute.
California prop. 65 (no significant risk level): Lead: 0.0005 mg/day (inhalation)

Rhode Island RTK hazardous substances: Lead; Tin;
Pennsylvania RTK: Indium; Lead; Tin;
Florida: Indium; Lead; Tin;
Minnesota: Indium; Lead; Tin;
Michigan critical material: Lead;
Massachusetts RTK: Indium; Lead; Tin;
New Jersey: Lead; Tin;

TSCA inventory: Bismuth; Indium; Lead; Tin;
SARA 311/312 MSDS distribution - chemical inventory - hazard identification: Lead: delayed health hazard;
SARA 313 toxic chemical notification and release reporting: Lead: 0.1%;
CERCLA hazardous substances: Lead: 10 lbs. (4.536 kg);

NOTE:
BE AWARE THAT THESE REGULATIONS MAY NOT APPLY TO THE PARTICULAR FORM IN WHICH THIS PRODUCT IS SOLD.
PLEASE CHECK WITH YOUR LOCAL AUTHORITIES.

Other Classifications		
	WHMIS (Canada)	WHMIS CLASS D-2A: Material causing other toxic effects (VERY TOXIC).
	DSCL (EEC)	R33- Danger of cumulative effects. R61- May cause harm to the unborn child. R62- Possible risk of impaired fertility. R20/22- Harmful by inhalation and if swallowed.

Section 16. Other Information

HMIS (U.S.A.)

*	1
	0
Reactivity	0
Personal Protection	j

National Fire Protection Association (U.S.A.)

References

-ACGIH, Threshold Limit Values, 1994-1995. -Canada Gazette Part II, Vol. 122, No. 2 Registration SOR/88-64 31 December, 1987 Hazardous Products Act "Ingredient Disclosure List". -CFR29, OSHA's Permissible Exposure Limits, revision July, 1993. -CFR29, part 1910.1200, Hazard Communication. -Components' manufacturer's Material Safety Data Sheet. -CRC Handbook of chemistry and physics, 67 th edition, CRC Press inc., Boca Rota, Florida. -CSST (Comission de Santé et Sécurité au Travail), document #RT-12: Classification of Certain Chemical Substances. -NFPA, Fire Protection Guide to Chemical Hazards, 11th edition. -NIOSH, Pocket Guide to Chemical Hazards, revision June 1994. -TSCA (Toxic Substance Contral Act), Chemical Substance Inventory List, 1985. - IATA, Dangerous Goods Regulations, 37th edition (January 1, 1996) - LOLIPRO vol. 13, Environmental Health & Safety Series II, Micromedex Inc.

Other Special Considerations

-ALL INGREDIENTS WITH SUSCEPTIBLE HAZARDS THAT ARE PRESENT IN A CONCENTRATION GREATER THAN 1 % (GREATER THAN 0.1 % FOR CARCINOGENS) HAVE BEEN DISCLOSED IN THIS SAFETY DOCUMENT.

Validated by C. Gosselin on 5/20/98.

Verified by C. Gosselin.

Printed 8/20/99.

USA: Infotrac (800)535-5053
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CANADA: not available