

SAFETY DATA SHEET



Cookson Electronics ASSEMBLY MATERIALS

Alpha OM-338 Solder Paste 95.5Sn/4.0Ag/0.5Cu 83.3-3-M04 10cc Syr/0.04Kg

1. Identification of the preparation and of the company

Product name : Alpha OM-338 Solder Paste
95.5Sn/4.0Ag/0.5Cu 83.3-3-
M04 10cc Syr/0.04Kg

Code : 144540

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Material uses : soldering

2 Hazards identification

The preparation is classified as dangerous according to Directive 1999/45/EC and its amendments.

Classification : R43

Skin contact

Slightly hazardous by the following route of exposure: of skin contact (irritant).

Toxicity data

rosin, hydrogenated: Caution: exposure to this material may cause certain sensitive individuals to develop eczema and/or asthma.

Sensitised persons may subsequently show asthmatic symptoms when exposed to atmospheric concentrations well below the OEL.

denatured acid hydrogenation gum resin: Caution: exposure to this material may cause certain sensitive individuals to develop eczema and/or asthma.

Sensitised persons may subsequently show asthmatic symptoms when exposed to atmospheric concentrations well below the OEL.

See section 11 for more detailed information on health effects and symptoms.

3 Composition/information on ingredients

Substance/preparation : Preparation

Ingredient name	CAS number	%	EC number	Classification
Europe				
tin	7440-31-5	80 - 100	231-141-8	Not classified.
silver	7440-22-4	1 - 5	231-131-3	N; R50
rosin, hydrogenated	65997-06-0	1 - 5	266-041-3	R43
denatured acid hydrogenation gum resin	144413-22-9	1 - 5	434-230-1	R43
See section 16 for the full text of the R-phrases declared above				

* Occupational Exposure Limit(s), if available, are listed in Section 8

* The classifications listed, indicate the potential hazards of the ingredients

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4. First-aid measures

First-aid measures

- | | |
|-----------------------------------|---|
| Inhalation | : Get medical attention if adverse health effects persist or are severe. If unconscious, place in recovery position and get medical attention immediately. |
| Ingestion | : Wash out mouth with water. Keep person warm and at rest. If unconscious, place in recovery position and get medical attention immediately. |
| Skin contact | : Flush contaminated skin with plenty of water. Remove contaminated clothing and shoes. Wash contaminated clothing thoroughly with water before removing 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. |
| 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. |
| 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 or wear gloves. |
| Notes to physician | : No specific treatment. Treat symptomatically. Contact poison treatment specialist immediately if large quantities have been ingested or inhaled. |

See section 11 for more detailed information on health effects and symptoms.

5. Fire-fighting measures

Extinguishing media

- | | |
|---|--|
| Suitable | : Use an extinguishing agent suitable for the surrounding fire. |
| Not suitable | : None known. |
| Special exposure hazards | : No specific fire or explosion hazard.
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. |
| Hazardous combustion products | : Decomposition products may include the following materials:
carbon oxides
metal oxide/oxides |
| 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. |

6. Accidental release measures

- | | |
|----------------------------------|--|
| Personal precautions | : Keep unnecessary personnel away. Use suitable protective equipment (section 8). |
| Environmental precautions | : Avoid dispersal of spilt 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). |
| Large spill | : Move containers from spill area. Approach the release from upwind. Prevent entry into sewers, water courses, basements or confined areas. Vacuum or sweep up material and place in a designated, labelled waste container. Dispose of via a licensed waste disposal contractor. Note: see section 1 for emergency contact information and section 13 for waste disposal. |
| Small spill | : Move containers from spill area. Vacuum or sweep up material and place in a designated, labelled waste container. Dispose of via a licensed waste disposal contractor. |

7. Handling and storage

Handling

- : Put on appropriate personal protective equipment (see section 8). Workers should wash hands and face before eating, drinking and smoking. 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. Do not reuse container.

Storage

- : Containers that have been opened must be carefully resealed and kept upright to prevent leakage. Do not store in unlabelled containers. Use appropriate containment to avoid environmental contamination.

Packaging materials

Recommended

- : Use original container.

8. Exposure controls/personal protection

Exposure limit values

<u>Ingredient name</u>	<u>Occupational exposure limits</u>
Europe	
tin	ACGIH TLV (United States, 1/2007). TWA: 2 mg/m ³ 8 hour(s).
silver	EU OEL (Europe, 5/2006). Notes: Indicative 8 hours: 0.1 mg/m ³ 8 hour(s).
Sweden	
silver	AFS 2005:17 (Sweden, 6/2007). TWA: 0.1 mg/m ³ 8 hour(s). Form: total dust
Denmark	
silver	Arbejdstilsynet (Denmark, 4/2005). Notes: Calculated as Ag TWA: 0.01 mg/m ³ , (Calculated as Ag) 8 hour(s). Form: Powder and dust
Norway	
silver	Arbejdstilsynet (Norway, 6/2007). TWA: 0.1 mg/m ³ 8 hour(s). Form: Dust and fumes
France	
silver	INRS (France, 6/2006). Notes: Regulatory indicative exposure limits TWA: 0.1 mg/m ³ 8 hour(s).
Netherlands	
silver	Nationale MAC-lijst (Netherlands, 12/2006). Notes: Administrative MAC-TGG, 8 uur: 0.1 mg/m ³ 8 hour(s).
Germany	
silver	MAK-Werte Liste (Germany, 7/2007). PEAK: 0.8 mg/m ³ , 4 times per shift, 15 minute(s). Form: aerosol / measured as the inhalable fraction TWA: 0.1 mg/m ³ 8 hour(s). Form: aerosol / measured as the inhalable fraction TRGS900 AGW (Germany, 3/2007). PEAK: 0.8 mg/m ³ 15 minute(s). Form: Inhalable fraction TWA: 0.1 mg/m ³ 8 hour(s). Form: Inhalable fraction
Finland	
tin	Työterveyslaitos (Finland, 2002). TWA: 2 mg/m ³ 8 hour(s).
	Työterveyslaitos, Sosiaali- ja terveysministeriö (Finland, 4/2005). Notes: Calculated as Sn TWA: 2 mg/m ³ , (Calculated as Sn) 8 hour(s).
silver	Työterveyslaitos (Finland, 2002). TWA: 0.1 mg/m ³ 8 hour(s).
	Työterveyslaitos, Sosiaali- ja terveysministeriö (Finland, 4/2005). TWA: 0.1 mg/m ³ 8 hour(s).

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8. Exposure controls/personal protection

United Kingdom (UK)

tin	EH40-OES (United Kingdom (UK), 2002). TWA: 2 mg/m ³ 8 hour(s). STEL: 4 mg/m ³ 15 minute(s).
silver	EH40-WEL (United Kingdom (UK), 8/2007). WEL 8 hrs limit: 0.1 mg/m ³ 8 hour(s).
rosin, hydrogenated	EH40-MEL (United Kingdom (UK), 2002). Skin sensitiser, Inhalation sensitiser TWA: 0.05 mg/m ³ 8 hour(s). Form: Rosin-based solder flux fume STEL: 0.15 mg/m ³ 15 minute(s). Form: Rosin-based solder flux fume
denatured acid hydrogenation gum resin	EH40-MEL (United Kingdom (UK), 2002). Skin sensitiser, Inhalation sensitiser TWA: 0.05 mg/m ³ 8 hour(s). Form: Rosin-based solder flux fume STEL: 0.15 mg/m ³ 15 minute(s). Form: Rosin-based solder flux fume

Austria

tin	GKV_MAK (Austria, 6/2006). STEL: 4 mg/m ³ , 4 times per shift, 15 minute(s). Form: Inhalable fraction
silver	TWA: 2 mg/m ³ 8 hour(s). Form: Inhalable fraction GKV_MAK (Austria, 6/2006). STEL: 0.1 mg/m ³ , 1 times per shift, 30 minute(s). Form: Inhalable fraction TWA: 0.01 mg/m ³ 8 hour(s). Form: Inhalable fraction

Switzerland

silver	SUVA (Switzerland, 1/2007). Notes: not temporary STEL: 0.8 mg/m ³ 15 minute(s). Form: inhalable dust TWA: 0.1 mg/m ³ 8 hour(s). Form: inhalable dust
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Belgium

tin	Lijst Grenswaarden / Valeurs Limites (Belgium, 6/2007). Skin TWA: 2 mg/m ³ 8 hour(s).
silver	Lijst Grenswaarden / Valeurs Limites (Belgium, 6/2007). TWA: 0.1 mg/m ³ 8 hour(s).

Spain

tin	INSHT (Spain, 1/2007). TWA: 2 mg/m ³ 8 hour(s).
silver	INSHT (Spain, 1/2007). TWA: 0.1 mg/m ³ 8 hour(s).

Turkey

silver	EU OEL (Europe, 5/2006). Notes: Indicative 8 hours: 0.1 mg/m ³ 8 hour(s).
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Czech Republic

silver	178/2001 (Czech Republic, 6/2004). STEL: 0.3 mg/m ³ 10 minute(s). TWA: 0.1 mg/m ³ 8 hour(s).
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Ireland

silver	NAOSH (Ireland, 3/2002). OELV-8hr: 0.1 mg/m ³ 8 hour(s).
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Italy

silver	Ministero della Salute (Italy, 3/2004). TWA: 0.1 mg/m ³ 8 hour(s).
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Estonia

silver	Sotsiaalminister (Estonia, 9/2001). TWA: 0.1 mg/m ³ 8 hour(s).
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Lithuania

8. Exposure controls/personal protection

silver	Del Lietuvos Higienos Normos (Lithuania, 12/2001). TWA: 0.1 mg/m ³ 8 hour(s).
Slovakia	
silver	Nariadenie vlády Slovenskej republiky (Slovakia, 6/2007). TWA: 0.1 mg/m ³ 8 hour(s).
Hungary	
silver	EüM-SzCsM (Hungary, 3/2006). PEAK: 0.4 mg/m ³ 15 minute(s). TWA: 0.1 mg/m ³ 8 hour(s).
Poland	
tin	Ministra Pracy i Polityki Społecznej (Poland, 9/2007). Notes: Calculated as Sn TWA: 2 mg/m ³ , (Calculated as Sn) 8 hour(s). Form: smokes and dusts
silver	Ministra Pracy i Polityki Społecznej (Poland, 9/2007). TWA: 0.05 mg/m ³ 8 hour(s). Form: smokes and dusts
Slovenia	
silver	EU OEL (Europe, 5/2006). Notes: Indicative 8 hours: 0.1 mg/m ³ 8 hour(s).
Latvia	
silver	LV Nat. Standardisation and Meteorological Centre (Latvia, 5/2007). TWA: 0.1 mg/m ³ 8 hour(s).
Greece	
tin	PD 90/1999 (Greece, 2/2003). TWA: 2 mg/m ³ 8 hour(s).
silver	PD 90/1999 (Greece, 2/2003). TWA: 0.1 mg/m ³ 8 hour(s).
Portugal	
tin	Instituto Português da Qualidade (Portugal, 3/2007). TWA: 2 mg/m ³ 8 hour(s).
silver	Instituto Português da Qualidade (Portugal, 3/2007). TWA: 0.1 mg/m ³ 8 hour(s).

Recommended monitoring procedures : If this product contains ingredients with exposure limits, personal, workplace atmosphere or biological monitoring may be required to determine the effectiveness of the ventilation or other control measures and/or the necessity to use respiratory protective equipment. Reference should be made to European Standard EN 689 for methods for the assessment of exposure by inhalation to chemical agents and national guidance documents for methods for the determination of hazardous substances.

Exposure controls

Occupational exposure controls : No special ventilation requirements. Good general ventilation should be sufficient to control worker exposure to airborne contaminants. If this product contains ingredients with exposure limits, use process enclosures, local exhaust ventilation or other engineering controls to keep worker exposure below any recommended or statutory limits.

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. Wash contaminated clothing before reusing. Ensure that eyewash stations and safety showers are close to the workstation location.

Respiratory protection : Use a properly fitted, air-purifying or air-fed respirator complying with an approved standard if a risk assessment indicates this is necessary. Respirator selection must be based on known or anticipated exposure levels, the hazards of the product and the safe working limits of the selected respirator.
Recommended: None assigned.

8. Exposure controls/personal 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.
<1 hours (breakthrough time): disposable vinyl
- Eye 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.
Recommended: safety glasses with side-shields EN 166 1F
- Skin 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.
Recommended: overall
- 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.

9. Physical and chemical properties

General information

Appearance

- Physical state** : Solid. [paste]
- Colour** : Grey.

Important health, safety and environmental information

- Melting point** : 217°C (422.6°F)
- Solubility** : Insoluble in the following materials: cold water and hot water.
- VOC content** : 6.9 %

10. Stability and reactivity

- Stability** : The product is stable. Under normal conditions of storage and use, hazardous polymerisation will not occur.
- Conditions to avoid** : No specific data.
- Materials to avoid** : No specific data.
- Hazardous decomposition products** : Under normal conditions of storage and use, hazardous decomposition products should not be produced.

11. Toxicological information

Potential acute health effects

- Inhalation** : No known significant effects or critical hazards.
- Ingestion** : No known significant effects or critical hazards.
- Skin contact** : May cause sensitisation by skin contact.
- Eye contact** : No known significant effects or critical hazards.

Acute toxicity

Over-exposure signs/symptoms

- Target organs** : Contains material which causes damage to the following organs: upper respiratory tract, eye, lens or cornea.
Contains material which may cause damage to the following organs: mucous membranes, skin, nose/sinuses.

11. Toxicological information

Product name	List name	Name on list	Classification	Notes
Netherlands rosin, hydrogenated		(complexe) aardolie- en steenkoolderivaten EG nrs. beginnend met 263, 265-275, 277, 278, 283-285, 287, 289, 291-298, 300, 302, 305-310 en EG-nr. 232-489-3		

12. Ecological information

Aquatic ecotoxicity

Product/ingredient name	Test	Result	Species	Exposure
silver	-	Acute EC50 9.2 ppb Fresh water	Daphnia - Water flea - Daphnia magna	48 hours
	-	Acute EC50 9.5 ug/L Fresh water	Daphnia - Water flea - Daphnia magna	48 hours
	-	Acute EC50 9.5 ug/L Fresh water	Daphnia - Water flea - Daphnia magna	48 hours
	-	Acute EC50 0.24 ug/L Fresh water	Daphnia - Water flea - Daphnia magna	48 hours
	-	Acute EC50 0.24 ug/L Fresh water	Daphnia - Water flea - Daphnia magna	48 hours
	-	Acute LC50 0.0062 mg/L Fresh water	Fish - Rainbow trout, donaldson trout - Oncorhynchus mykiss	96 hours
	-	Acute LC50 6.25 to 7.3 ug/L Fresh water	Fish - Fathead minnow - Pimephales promelas	96 hours
	-	Acute LC50 4.7 to 5.62 ug/L Fresh water	Fish - Fathead minnow - Pimephales promelas	96 hours
	-	Acute LC50 3.42 to 4.05 ug/L Fresh water	Fish - Fathead minnow - Pimephales promelas	96 hours
	-	Acute LC50 3.12 to 3.73 ug/L Fresh water	Fish - Fathead minnow - Pimephales promelas	96 hours
	-	Acute LC50 2.76 to 3.33 ug/L Fresh water	Fish - Fathead minnow - Pimephales	96 hours

12. Ecological information

-	Acute LC50 2.38 to 3.04 ug/L Fresh water	promelas Fish - Fathead minnow - Pimephales promelas	96 hours
-	Acute LC50 2.13 to 2.93 ug/L Fresh water	Fish - Fathead minnow - Pimephales promelas	96 hours
-	Acute LC50 0.013 mg/L Fresh water	Fish - Rainbow trout,donaldson trout - Oncorhynchus mykiss	96 hours
-	Acute LC50 0.0081 mg/L Fresh water	Fish - Rainbow trout,donaldson trout - Oncorhynchus mykiss	96 hours
-	Acute LC50 14 ug/L Fresh water	Daphnia - Water flea - Daphnia pulex	48 hours
-	Acute LC50 11 to 14 ug/L Fresh water	Daphnia - Water flea - Ceriodaphnia reticulata	48 hours

Biodegradability

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

13. Disposal considerations

Methods of disposal : The generation of waste should be avoided or minimised wherever possible. Dispose of surplus and non-recyclable products via a licensed waste disposal contractor. 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. Avoid dispersal of spilt material and runoff and contact with soil, waterways, drains and sewers.

European waste catalogue (EWC) : 10 08 11 dross and skimmings other than those mentioned in 10 08 10

Hazardous waste : Yes.

14. Transport information

International transport regulations

Regulatory information	UN number	Proper shipping name	Classes	PG*	Label	Additional information
ADR/RID Class	Not regulated.	-	-	-		-
IMDG Class	Not regulated.	-	-	-		-
IATA Class	Not regulated.	-	-	-		-

PG* : Packing group

15. Regulatory information

EU regulations

Classification and labeling have been determined according to EU Directives 67/548/EEC and 1999/45/EC (including amendments) and take into account the intended product use.

Hazard symbol or symbols :



Irritant

Risk phrases : R43- May cause sensitisation by skin contact.

Safety phrases : S24- Avoid contact with skin.
S37- Wear suitable gloves.

Contains : rosin, hydrogenated 266-041-3
denatured acid hydrogenation gum resin 434-230-1

Product use : Industrial applications.

France

Professional disease or diseases : rosin, hydrogenated 65, 66
denatured acid hydrogenation gum resin 65, 66

Germany

Hazard class for water : 1 Appendix No. 4

Technical instruction on air quality control : TA-Luft Number 5.2.1: 95.7%

Italy

Emission control directive : 99.998% Not classified.

16. Other information

Full text of R-phrases referred to in sections 2 and 3 - Europe : R43- May cause sensitisation by skin contact.
R50- Very toxic to aquatic organisms.

Full text of classifications referred to in sections 2 and 3 - Europe : None assigned.

History

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Prepared by : Simon Hosken
Environmental, Health and Safety Manager

Indicates information that has changed from previously issued version.

References

The Health and Safety At Work Act 1974, section 6.
Control of Substances Hazardous to Health (CoSHH) Regulations 2002 and its amendments.

Preparation contains solely TSCA and REACH 1907/2006 listed substances.

This safety data sheet has been prepared in accordance with the requirements of the Chemicals (Hazard Information and Packaging for Supply) Regulations 2002 which implement EC Directives 1999/45/EC and 2001/58/EC and their amendments.

Notice to reader

16. Other information

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.