Conforms to EU Directive 91/155/EEC, as amended by 2001/58/EC

SAFETY DATA SHEET

Cookson Electronics ASSEMBLY MATERIALS

Bakers No.3 (box = 10LT)

1. Identification of the preparation and of the company

Product name : **Bakers No.3 (box = 10LT)**

Code : **61136**

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Material uses : soldering

2. Composition/information on ingredients

Substance/preparation : Preparation

Ingredient name	CAS number	%	EC number	Classification
Europe				
zinc chloride	7646-85-7	20 - 30	231-592-0	Xn; R22 C; R34 N; R50/53
ammonium chloride	12125-02-9	1 - 5	235-186-4	Xn; R22 Xi; R36
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, indecate the potential hazards of the ingredients**

3. Hazards identification

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

Classification : C; R34
N; R51/53

Effects and symptoms

Inhalation Inhalation of the spray or mist may produce severe irritation of respiratory tract, characterised by coughing, choking or shortness of breath. Over-exposure by inhalation may cause respiratory irritation. May be fatal if inhaled.

Ingestion May cause burns to mouth, throat and stomach.

Skin contact Hazardous by the following route of exposure: of skin contact (corrosive).

Eye contact Hazardous by the following route of exposure: of eye contact (corrosive).

Toxicity data Not available.

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

4. First-aid measures

First-aid measures

Inhalation : Get medical attention immediately. Move exposed person to fresh air. If it is suspected that fumes are still present, the rescuer should wear an appropriate mask or self-contained breathing apparatus. Keep person warm and at rest. 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. 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. In case of inhalation of decomposition products in a fire, symptoms may be delayed. The exposed person may need to be kept under medical surveillance for 48 hours.

Ingestion : Get medical attention immediately. Wash out mouth with water. Remove dentures if any. Move exposed person to fresh air. Keep person warm and at rest. 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. Chemical burns must be treated promptly by a physician. 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.

Skin contact : Get medical attention immediately. 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. Chemical burns must be treated promptly by a physician. Wash clothing before reuse. Clean shoes thoroughly before reuse.

Eye contact : Get medical attention immediately. 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. Chemical burns must be treated promptly by a physician.

Protection of first-aiders : No action shall be taken involving any personal risk or without suitable training. If it is suspected that fumes are still present, the rescuer should wear an appropriate mask or self-contained breathing apparatus. 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 : In case of inhalation of decomposition products in a fire, symptoms may be delayed. The exposed person may need to be kept under medical surveillance for 48 hours.

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 : In a fire or if heated, a pressure increase will occur and the container may burst.

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. This material is toxic to aquatic organisms. Fire water contaminated with this material must be contained and prevented from being discharged to any waterway, sewer or drain.

Hazardous combustion products : Decomposition products may include the following materials:
nitrogen oxides
halogenated compounds
metal oxide/oxides

5. Fire-fighting measures

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 : 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 spilt material. Avoid breathing vapour or mist. Provide adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Put on appropriate personal protective equipment (see 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). Water polluting material. May be harmful to the environment if released in large quantities.

Large spill : Stop leak if without risk. Move containers from spill area. Approach the release from upwind. Prevent entry into sewers, water courses, basements or confined areas. Wash spillages into an effluent treatment plant or proceed as follows. Contain and collect spillage with non-combustible, absorbent material e.g. sand, earth, vermiculite or diatomaceous earth and place in container for disposal according to local regulations (see section 13). Dispose of via a licensed waste disposal contractor. Contaminated absorbent material may pose the same hazard as the spilt product. Note: see section 1 for emergency contact information and section 13 for waste disposal.

Small spill : Stop leak if without risk. Move containers from spill area. Dilute with water and mop up if water-soluble or absorb with an inert dry material and place in an appropriate waste disposal container. Dispose of via a licensed waste disposal contractor.

7. Handling and storage

Handling : Put on appropriate personal protective equipment (see section 8). 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. Do not get in eyes or on skin or clothing. Do not breathe vapour or mist. Do not ingest. Avoid release to the environment. Refer to special instructions/safety data sheet. If during normal use the material presents a respiratory hazard, use only with adequate ventilation or wear appropriate respirator. 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.

Storage : 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 unlabelled containers. Use appropriate containment to avoid environmental contamination.

Packaging materials

Recommended : Use original container.

8. Exposure controls/personal protection

Exposure limit values

Ingredient name	Occupational exposure limits
Europe	
zinc chloride	**ACGIH TLV (United States, 1/2006).** STEL: 2 mg/m³ 15 minute(s). Form: Fume TWA: 1 mg/m³ 8 hour(s). Form: Fume
ammonium chloride	**ACGIH TLV (United States, 1/2006).** STEL: 20 mg/m³ 15 minute(s). Form: Fume TWA: 10 mg/m³ 8 hour(s). Form: Fume
Sweden	
zinc chloride	**AFS (Sweden, 6/2005).** TWA: 1 mg/m³ 8 hour(s). Form: respirable dust
Denmark	
zinc chloride	**Arbejdstilsynet (Denmark, 4/2005). Notes: Calculated as Zn** TWA: 0.5 mg/m³, (Calculated as Zn) 8 hour(s). TWA: 0.5 mg/m³, (Calculated as Zn) 8 hour(s). Form: Fume
ammonium chloride	**Arbejdstilsynet (Denmark, 4/2005).** TWA: 10 mg/m³ 8 hour(s). Form: Fume
Norway	
zinc chloride	**Arbeidstilsynet (Norway, 10/2003).** TWA: 1 mg/m³ 8 hour(s).
ammonium chloride	**Arbeidstilsynet (Norway, 10/2003).** TWA: 10 mg/m³ 8 hour(s).
France	
zinc chloride	**INRS (France, 6/2006). Notes: indicative exposure limits** TWA: 1 mg/m³ 8 hour(s). Form: Fume
ammonium chloride	**INRS (France, 6/2006). Notes: indicative exposure limits** TWA: 10 mg/m³ 8 hour(s). Form: Fume
Netherlands	
zinc chloride	**Nationale MAC-lijst (Netherlands, 7/2006). Notes: Administrative** OEL, 8-h TWA: 1 mg/m³ 8 hour(s). Form: fume
Germany	
No exposure limit value known.	
Finland	
zinc chloride	**Työterveyslaitos, Sosiaali- ja terveysministeriö (Finland, 4/2005).** TWA: 1 mg/m³ 8 hour(s). Form: fume
ammonium chloride	**Työterveyslaitos, Sosiaali- ja terveysministeriö (Finland, 4/2005).** TWA: 10 mg/m³ 8 hour(s).
United Kingdom (UK)	
zinc chloride	**EH40-WEL (United Kingdom (UK), 9/2006).** WEL 15 min limit: 2 mg/m³ 15 minute(s). Form: Fume WEL 8 hrs limit: 1 mg/m³ 8 hour(s). Form: Fume
ammonium chloride	**EH40-WEL (United Kingdom (UK), 9/2006).** WEL 15 min limit: 20 mg/m³ 15 minute(s). Form: Fume WEL 8 hrs limit: 10 mg/m³ 8 hour(s). Form: Fume
Austria	
No exposure limit value known.	
Switzerland	

8. Exposure controls/personal protection

zinc chloride	**SUVA (Switzerland, 2/2005). Notes: not temporary** TWA: 1 mg/m³ 8 hour(s). Form: respirable dust and fumes
ammonium chloride	**SUVA (Switzerland, 2/2005). Notes: not temporary** TWA: 3 mg/m³ 8 hour(s).

Belgium

zinc chloride	**Lijst Grenswaarden / Valeurs Limites (Belgium, 3/2006).** STEL: 2 mg/m³ 15 minute(s). Form: fume TWA: 1 mg/m³ 8 hour(s). Form: fume
ammonium chloride	**Lijst Grenswaarden / Valeurs Limites (Belgium, 3/2006).** STEL: 20 mg/m³ 15 minute(s). Form: fume TWA: 10 mg/m³ 8 hour(s). Form: fume

Spain

zinc chloride	**INSHT (Spain, 1/2006).** STEL: 2 mg/m³ 15 minute(s). Form: Fume TWA: 1 mg/m³ 8 hour(s). Form: Fume
ammonium chloride	**INSHT (Spain, 1/2006).** STEL: 20 mg/m³ 15 minute(s). Form: Fume TWA: 10 mg/m³ 8 hour(s). Form: Fume

Turkey

Zinc chloride	**NIOSH REL (United States, 6/2001).** STEL: 2 mg/m³ 15 minute(s). Form: Fume TWA: 1 mg/m³ 10 hour(s). Form: Fume
Ammonium chloride	**NIOSH REL (United States, 6/2001).** STEL: 20 mg/m³ 15 minute(s). Form: Fume TWA: 10 mg/m³ 10 hour(s). Form: Fume

Czech Republic

zinc chloride	**178/2001 (Czech Republic, 6/2004).** STEL: 2 mg/m³ 10 minute(s). TWA: 1 mg/m³ 8 hour(s).
ammonium chloride	**178/2001 (Czech Republic, 6/2004).** STEL: 10 mg/m³ 10 minute(s). TWA: 5 mg/m³ 8 hour(s).

Ireland

zinc chloride	**NAOSH (Ireland, 3/2002).** OELV-15min: 2 mg/m³ 15 minute(s). Form: Fume OELV-8hr: 1 mg/m³ 8 hour(s). Form: Fume
ammonium chloride	**NAOSH (Ireland, 3/2002).** OELV-15min: 20 mg/m³ 15 minute(s). Form: Fume OELV-8hr: 10 mg/m³ 8 hour(s). Form: Fume

Italy

No exposure limit value known.

Estonia

zinc chloride	**Sotsiaalminister (Estonia, 9/2001).** TWA: 1 MG/M3 8 hour(s). Form: inhalable dust

Lithuania

zinc chloride	**Del Lietuvos Higienos Normos (Lithuania, 12/2001).** TWA: 1 MG/M3 8 hour(s). Form: Respirable fraction
ammonium chloride	**Del Lietuvos Higienos Normos (Lithuania, 12/2001).** TWA: 10 MG/M3 8 hour(s).

Slovakia

No exposure limit value known.

Hungary

8. Exposure controls/personal protection

No exposure limit value known.

Poland

zinc chloride	**Ministra Pracy I Polityki Społecznej (Poland, 10/2005).** STEL: 2 mg/m³ 15 minute(s). Form: smokes TWA: 1 mg/m³ 8 hour(s). Form: smokes
ammonium chloride	**Ministra Pracy I Polityki Społecznej (Poland, 10/2005).** STEL: 20 mg/m³ 15 minute(s). Form: vapours and smokes TWA: 10 mg/m³ 8 hour(s). Form: vapours and smokes

Slovenia

No exposure limit value known.

Latvia

ammonium chloride	**LV Nat. Standardisation and Meterological Centre (Latvia, 11/2004).** TWA: 10 MG/M3 8 hour(s).

Greece

zinc chloride	**PD 90/1999 (Greece, 2/2003).** STEL: 2 MG/M3 15 minute(s). TWA: 1 MG/M3 8 hour(s).
ammonium chloride	**PD 90/1999 (Greece, 2/2003).** STEL: 20 MG/M3 15 minute(s). Form: Fume TWA: 10 MG/M3 8 hour(s). Form: Fume

Portugal

zinc chloride	**Instituto Português da Qualidade (Portugal, 7/2004).** STEL: 2 MG/M3 15 minute(s). Form: Fume TWA: 1 MG/M3 8 hour(s). Form: Fume
ammonium chloride	**Instituto Português da Qualidade (Portugal, 7/2004).** STEL: 20 MG/M3 15 minute(s). Form: Fume TWA: 10 MG/M3 8 hour(s). Form: Fume

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 : If user operations generate dust, fumes, gas, vapour or mist, use process enclosures, local exhaust ventilation or other engineering controls to keep worker exposure to airborne contaminants 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: inorganic gases/vapours filter (Type B)FFB2P3 EN405:2002

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.
4-8 hours (breakthrough time): nitrile rubber

8. Exposure controls/personal protection

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: face shield EN 166 3 9 -B

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 : Liquid.

Colour : Colourless.

Odour : Characteristic.

Important health, safety and environmental information

pH : <2 [Conc. (% w/w): 100%]

Boiling point : 100°C (212°F)

Solubility : Easily soluble in the following materials: cold water and hot water.

Viscosity : Kinematic: 0.02 cm^2/s (2 cSt)

10. Stability and reactivity

Stability : The product is stable. Under normal conditions of storage and use, hazardous polymerisation will not occur.

Conditions to avoid : Avoid release to the environment. Refer to special instructions/safety data sheet.

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 : May give off gas, vapor or dust that is very irritating or corrosive to the respiratory system. Exposure to decomposition products may cause a health hazard. Serious effects may be delayed following exposure.

Ingestion : May cause burns to mouth, throat and stomach.

Skin contact : Corrosive to the skin. Causes burns.

Eye contact : Corrosive to eyes. Causes burns.

Acute toxicity

Over-exposure signs/symptoms

Target organs : Contains material which causes damage to the following organs: lungs, cardiovascular system, upper respiratory tract, skin, eye, lens or cornea.

11. Toxicological information

12. Ecological information

Aquatic ecotoxicity

Product/ingredient name	Test	Result	Species	Exposure
zinc chloride	Intoxication	Acute EC50 93.8 mg/L	Daphnia	48 hours
	Intoxication	Acute EC50 2.8 mg/L	Daphnia	48 hours
	Mortality	Acute LC50 0.095 mg/L	Fish	96 hours
	Mortality	Acute LC50 0.093 mg/L	Fish	96 hours
	Mortality	Acute LC50 0.066 mg/L	Fish	96 hours
ammonium chloride	Mortality	Acute LC50 0.25 mg/L	Fish	96 hours
	Mortality	Acute LC50 0.25 mg/L	Fish	96 hours
	Mortality	Acute LC50 0.21 mg/L	Fish	96 hours
	Mortality	Acute LC50 0.16 mg/L	Fish	96 hours
	Mortality	Acute LC50 0.11 mg/L	Fish	96 hours
	Mortality	Acute LC50 0.08 mg/L	Fish	96 hours

Biodegradability

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

AOX : The product does not contain organically bound halogens which could lead to an AOX value in waste water.

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) : 16 03 03* inorganic wastes containing dangerous substances

Hazardous waste : Yes.

14. Transport information

International transport regulations

14. Transport information

Regulatory information	UN number	Proper shipping name	Classes	PG*	Label	Additional information
ADR/RID Class	1760	Corrosive liquid, n.o.s. (zinc chloride)	8	III		**Hazard identification number** 80 **CEFIC Tremcard** 80GC9-III
IMDG Class	1760	Corrosive liquid, n.o.s. (zinc chloride)	8	III		**Emergency schedules (EmS)** F-A, S-B
IATA Class	1760	Corrosive liquid, n.o.s. (zinc chloride)	8	III		**Passenger and Cargo Aircraft**Quantity limitation: 5 L **Cargo Aircraft Only** Quantity limitation: 60 L

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 :

Corrosive, Dangerous for the environment

Risk phrases : R34- Causes burns.
R51/53- Toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

Safety phrases : S26- In case of contact with eyes, rinse immediately with plenty of water and seek medical advice.
S36/37/39- Wear suitable protective clothing, gloves and eye/face protection.
S45- In case of accident or if you feel unwell, seek medical advice immediately (show the label where possible).
S57- Use appropriate containment to avoid environmental contamination.
S61- Avoid release to the environment. Refer to special instructions/safety data sheet.

Contains : zinc chloride 231-592-0

Product use : Industrial applications.

Europe inventory : **Europe inventory:** All components are listed or exempted.

Germany

Hazardous incident ordinance : Applicable. Category: 9b Dangerous for the environment.

Hazard class for water : 3 Appendix No. 4

Italy

Emission control directive : Not classified.

16. Other information

Full text of R-phrases referred to in sections 2 and 3 - Europe : R22- Harmful if swallowed.
R34- Causes burns.
R36- Irritating to eyes.
R50/53- Very toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.
R51/53- Toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

Full text of classifications referred to in sections 2 and 3 - Europe : C - Corrosive
Xn - Harmful
Xi - Irritant
N - Dangerous for the environment

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 soley TSCA and EINECS 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

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.