SAFETY DATA SHEET

Cookson Electronics ASSEMBLY MATERIALS

Sterox

1. Identification of the preparation and of the company

Product name : Sterox

Code : 61013

Head Office :
Cookson Electronics
Forsyth Road
Sheerwater
Woking
Surrey
England
GU21 5RZ
Tel: +44(0)1483 758400
Fax: +44(0)1483 728837

Manufacturer :
Cookson Electronics Assembly Materials Group
Ashford Manufacturing Site
Henwood Industrial Estate
Hythe Road
Ashford
Kent
England
TN24 8DH
Tel: +44 (0) 1233 610110
Fax: +44 (0) 1233 664323

Contact person : shosken@cooksonelectronics.com

Material uses : Water treatment agent.

2 Hazards identification

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

Classification :
Xn; R22
Xi; R36/37
R31
N; R50/53

Effects and symptoms

Inhalation Hazardous by the following route of exposure: of inhalation (lung irritant).

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

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

Toxicity data Not available.

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				
sodium dichloro isocyanurate	2093-78-9	80 - 100		Xn; R22 Xi; R36/37 R31
chlorine	7782-50-5	0.5 - 1	231-959-5	T; R23 Xi; R36/37/38 N; R50
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**

4. First-aid measures

First-aid measures

Inhalation : Move exposed person to fresh air. 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 : Wash out mouth with water. If vomiting occurs, the head should be kept low so that vomit does not enter the lungs. Get medical attention. Never give anything by mouth to an unconscious person. 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. Obtain medical attention if symptoms occur. 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.

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.

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 : 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. This material is very 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:
carbon oxides
nitrogen oxides
halogenated compounds
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 : No action shall be taken involving any personal risk or without suitable training. 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 : 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). 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 ingest. Avoid contact with eyes, skin and clothing. Do not reuse container.

Storage : 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. 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	
chlorine	**EU OEL (Europe, 5/2006). Notes: Indicative** short term: 1.5 mg/m³ 15 minute(s). short term: 0.5 ppm 15 minute(s).
Sweden	
chlorine	**AFS (Sweden, 6/2005).** CEIL: 3 mg/m³ CEIL: 1 ppm TWA: 1.5 mg/m³ 8 hour(s). TWA: 0.5 ppm 8 hour(s).
Denmark	
chlorine	**Arbejdstilsynet (Denmark, 4/2005).** TWA: 1.5 mg/m³ 8 hour(s). TWA: 0.5 ppm 8 hour(s).
Norway	
chlorine	**Arbeidstilsynet (Norway, 10/2003).** CEIL: 3 mg/m³ CEIL: 1 ppm TWA: 1.5 mg/m³ 8 hour(s). TWA: 0.5 ppm 8 hour(s).
France	
chlorine	**INRS (France, 6/2006). Notes: indicative exposure limits** STEL: 3 mg/m³ 15 minute(s). STEL: 1 ppm 15 minute(s).
Netherlands	
chlorine	**Nationale MAC-lijst (Netherlands, 7/2006). Notes: Legal indicates a statutory value, Admini¬strative indicates an administrative value that is not legally binding (see background).** STEL,15-min ref: 1.5 mg/m³ 15 minute(s). STEL,15-min ref: 0.5 ppm 15 minute(s).
Germany	
chlorine	**MAK-Werte Liste (Germany, 7/2006).** PEAK: 1.5 mg/m³, 4 times per shift, 15 minute(s). PEAK: 0.5 ppm, 4 times per shift, 15 minute(s). TWA: 1.5 mg/m³ 8 hour(s). TWA: 0.5 ppm 8 hour(s). **TRGS900 AGW (Germany, 1/2006).** PEAK: 1.5 mg/m³ 15 minute(s). PEAK: 0.5 ppm 15 minute(s). TWA: 1.5 mg/m³ 8 hour(s). TWA: 0.5 ppm 8 hour(s).

8. Exposure controls/personal protection

Finland

chlorine

Työterveyslaitos, Sosiaali- ja terveysministeriö (Finland, 4/2005).
STEL: 1.5 mg/m³ 15 minute(s).
STEL: 0.5 ppm 15 minute(s).

United Kingdom (UK)

chlorine

EH40-WEL (United Kingdom (UK), 9/2006).
WEL 15 min limit: 2.9 mg/m³ 15 minute(s).
WEL 15 min limit: 1 ppm 15 minute(s).
WEL 8 hrs limit: 1.5 mg/m³ 8 hour(s).
WEL 8 hrs limit: 0.5 ppm 8 hour(s).

Austria

chlorine

GKV_MAK (Austria, 6/2006).
PEAK: 1.5 mg/m³ 15 minute(s).
PEAK: 0.5 ppm 15 minute(s).
TWA: 1.5 mg/m³ 8 hour(s).
TWA: 0.5 ppm 8 hour(s).

Switzerland

chlorine

SUVA (Switzerland, 2/2005). Notes: not temporary
STEL: 1.5 mg/m³ 15 minute(s).
STEL: 0.5 ppm 15 minute(s).
TWA: 1.5 mg/m³ 8 hour(s).
TWA: 0.5 ppm 8 hour(s).

Belgium

chlorine

Lijst Grenswaarden / Valeurs Limites (Belgium, 3/2006).
STEL: 2.9 mg/m³ 15 minute(s).
STEL: 1 ppm 15 minute(s).
TWA: 1.5 mg/m³ 8 hour(s).
TWA: 0.5 ppm 8 hour(s).

Spain

chlorine

INSHT (Spain, 1/2006).
STEL: 3 mg/m³ 15 minute(s).
STEL: 1 ppm 15 minute(s).
TWA: 1.5 mg/m³ 8 hour(s).
TWA: 0.5 ppm 8 hour(s).

Turkey

chlorine

EU OEL (Europe, 5/2006). Notes: Indicative
short term: 1.5 mg/m³ 15 minute(s).
short term: 0.5 ppm 15 minute(s).

Czech Republic

chlorine

178/2001 (Czech Republic, 6/2004).
STEL: 3 mg/m³ 10 minute(s).
STEL: 1.032 ppm 10 minute(s).
TWA: 1.5 mg/m³ 8 hour(s).
TWA: 0.516 ppm 8 hour(s).

Ireland

chlorine

NAOSH (Ireland, 3/2002).
OELV-15min: 3 mg/m³ 15 minute(s).
OELV-15min: 1 ppm 15 minute(s).
OELV-8hr: 1.5 mg/m³ 8 hour(s).
OELV-8hr: 0.5 ppm 8 hour(s).

Italy

chlorine

EU OEL (Europe, 5/2006). Notes: Indicative
short term: 1.5 mg/m³ 15 minute(s).
short term: 0.5 ppm 15 minute(s).

Estonia

8. Exposure controls/personal protection

chlorine	**Sotsiaalminister (Estonia, 9/2001).** CEIL: 3 MG/M3 15 minute(s). CEIL: 1 PPM 15 minute(s). TWA: 1.5 MG/M3 8 hour(s). TWA: 0.5 PPM 8 hour(s).
Lithuania	
chlorine	**Del Lietuvos Higienos Normos (Lithuania, 12/2001).** CEIL: 3 MG/M3 CEIL: 1 PPM TWA: 1.5 MG/M3 8 hour(s). TWA: 0.5 PPM 8 hour(s).
Slovakia	
chlorine	**Nariadenie Vlády Slovenskej republiky (Slovakia, 5/2006).** CEIL: 1.5 mg/m³
Hungary	
chlorine	**EüM-SzCsM (Hungary, 11/2002).** PEAK: 1.5 mg/m³ 15 minute(s). TWA: 1.5 mg/m³ 8 hour(s).
Poland	
chlorine	**Ministra Pracy I Polityki Społecznej (Poland, 10/2005).** STEL: 9 mg/m³ 15 minute(s). TWA: 1.5 mg/m³ 8 hour(s).
Slovenia	
chlorine	**Uradni list Republike Slovenije (Slovenia, 4/2005).** PEAK: 1.5 MG/M3, 4 times per shift, 15 minute(s). PEAK: 0.5 PPM, 4 times per shift, 15 minute(s). TWA: 1.5 MG/M3 8 hour(s). TWA: 0.5 PPM 8 hour(s).
Latvia	
chlorine	**LV Nat. Standardisation and Meterological Centre (Latvia, 11/2004).** TWA: 1 MG/M3 8 hour(s).
Greece	
chlorine	**PD 90/1999 (Greece, 2/2003).** STEL: 3 MG/M3 15 minute(s). STEL: 1 PPM 15 minute(s). TWA: 3 MG/M3 8 hour(s). TWA: 1 PPM 8 hour(s).
Portugal	
chlorine	**Instituto Português da Qualidade (Portugal, 7/2004).** STEL: 1 PPM 15 minute(s). TWA: 0.5 PPM 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 : Use only with adequate ventilation. 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. Engineering controls may be required to control the primary or secondary risks associated with this product.

8. Exposure controls/personal protection

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.

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: None assigned.

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.

Colour : White.

Odour : Characteristic.

Important health, safety and environmental information

pH : 6 [Conc. (% w/w): 10%]

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

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 : Reactive or incompatible with the following materials: acids

Hazardous decomposition products : Contact with acids liberates toxic gas.

11. Toxicological information

Potential acute health effects

Inhalation : Irritating to respiratory system. Exposure to decomposition products may cause a health hazard. Serious effects may be delayed following exposure.

Ingestion : Harmful if swallowed.

Skin contact : No known significant effects or critical hazards.

Eye contact : Irritating to eyes.

Acute toxicity

Over-exposure signs/symptoms

11. Toxicological information

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

12. Ecological information

Aquatic ecotoxicity

Product/ingredient name	Test	Result	Species	Exposure
chlorine	Mortality	Acute LC50 0.291 mg/L	Fish	96 hours
	Mortality	Acute LC50 0.192 mg/L	Fish	96 hours
	Mortality	Acute LC50 0.159 mg/L	Fish	96 hours
	Mortality	Acute LC50 0.132 mg/L	Fish	96 hours
	Mortality	Acute LC50 0.029 mg/L	Fish	96 hours
	Mortality	Acute LC50 0.014 mg/L	Fish	96 hours

Biodegradability

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

AOX : The product contains organically bound halogens and can contribute to the 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.

16 03 03* inorganic wastes containing dangerous substances

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 :

Harmful, Dangerous for the environment

Risk phrases : R22- Harmful if swallowed.
R36/37- Irritating to eyes and respiratory system.
R31- Contact with acids liberates toxic gas.
R50/53- Very toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

Safety phrases : S2- Keep out of the reach of children.
S29- Do not empty into drains.
S61- Avoid release to the environment. Refer to special instructions/safety data sheet.

Contains : sodium dichloro isocyanurate

Product use : Consumer applications.

Other EU regulations

Tactile warning of danger : Yes, applicable.

Germany

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

Hazard class for water : 3 Appendix No. 4

Technical instruction on air quality control : TA-Luft Number 5.2.1: 99%

Italy

Emission control directive : Not classified.

16. Other information

Full text of R-phrases referred to in sections 2 and 3 - Europe : R23- Toxic by inhalation.
R22- Harmful if swallowed.
R36/37- Irritating to eyes and respiratory system.
R36/37/38- Irritating to eyes, respiratory system and skin.
R31- Contact with acids liberates toxic gas.
R50- Very toxic to aquatic organisms.
R50/53- Very 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 : T - Toxic
Xn - Harmful
Xi - Irritant
N - Dangerous for the environment

History

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Prepared by : Not available.

Indicates information that has changed from previously issued version.

References

16. Other information

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.