

SAFETY DATA SHEET



Cookson Electronics ASSEMBLY MATERIALS

Sterox (Tablets)

1. Identification of the preparation and of the company

Product name : Sterox (Tablets)**Code** : 61013**Head Office** : **Cookson Electronics**
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Tel: +44(0)1483 758400
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Tel: +44(0)1483 758400
Fax: +44(0)1483 728837**Contact person** : shosken@cooksonelectronics.com**Material uses** : Water treatment agent.

2 Hazards identification

The product 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 troclosene sodium	2893-78-9	80 - 100	220-767-7	O; R8 Xn; R22 Xi; R36/37 R31 N; R50/53
boric acid See section 16 for the full text of the R-phrases declared above	10043-35-3	1 - 5	233-139-2	Not classified.

Occupational exposure limits, 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** : 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. Get 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 dioxide
carbon monoxide
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

<u>Ingredient name</u>	<u>Occupational exposure limits</u>
Europe boric acid	ACGIH TLV (United States, 1/2008). STEL: 6 mg/m ³ 15 minute(s). TWA: 2 mg/m ³ 8 hour(s).
Sweden chlorine	AFS (Sweden, 6/2005). CEIL: 3 mg/m ³ CEIL: 1 ppm TWA: 1.5 mg/m ³ 8 hour(s). TWA: 0.5 ppm 8 hour(s).
Denmark chlorine	Arbejdstilsynet (Denmark, 4/2005). TWA: 1.5 mg/m ³ 8 hour(s). TWA: 0.5 ppm 8 hour(s).
Norway chlorine	Arbejdstilsynet (Norway, 10/2003). CEIL: 3 mg/m ³ CEIL: 1 ppm TWA: 1.5 mg/m ³ 8 hour(s). TWA: 0.5 ppm 8 hour(s).
France chlorine	INRS (France, 6/2006). Notes: indicative exposure limits STEL: 3 mg/m ³ 15 minute(s). STEL: 1 ppm 15 minute(s).
Netherlands chlorine	Nationale MAC-lijst (Netherlands, 7/2006). Notes: Legal indicates a statutory value, Administrative indicates an administrative value that is not legally binding (see background). STEL, 15-min ref: 1.5 mg/m ³ 15 minute(s). STEL, 15-min ref: 0.5 ppm 15 minute(s).
Germany boric acid	TRGS900 AGW (Germany, 7/2008). TWA: 0.5 mg/m ³ 8 hour(s). PEAK: 1 mg/m ³ 15 minute(s).
Finland chlorine	Työterveyslaitos, Sosiaali- ja terveysministeriö (Finland, 4/2005). STEL: 1.5 mg/m ³ 15 minute(s). STEL: 0.5 ppm 15 minute(s).

8. Exposure controls/personal protection

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

boric acid

Lijst Grenswaarden / Valeurs Limites (Belgium, 6/2007).

STEL: 6 mg/m³ 15 minute(s).TWA: 2 mg/m³ 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

boric acid

ACGIH TLV (United States, 1/2008).

STEL: 6 mg/m³ 15 minute(s).TWA: 2 mg/m³ 8 hour(s).

Estonia

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

8. Exposure controls/personal protection

boric acid	Del Lietuvos Higienos Normos (Lithuania, 10/2007). TWA: 10 mg/m ³ 8 hour(s).
Slovakia	
chlorine	Nariadenie vlády Slovenskej republiky (Slovakia, 5/2006). CEIL: 1.5 mg/m ³
Hungary	
chlorine	EüM-SzCsM (Hungary, 11/2002). PEAK: 1.5 mg/m ³ 15 minute(s). TWA: 1.5 mg/m ³ 8 hour(s).
Poland	
chlorine	Ministra Pracy I Polityki Społecznej (Poland, 10/2005). STEL: 9 mg/m ³ 15 minute(s). TWA: 1.5 mg/m ³ 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	
boric acid	LV Nat. Standardisation and Meterological Centre (Latvia, 5/2007). TWA: 10 mg/m ³ 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	
boric acid	Instituto Português da Qualidade (Portugal, 3/2007). TWA: 2 mg/m ³ 8 hour(s). Form: inhalable fraction STEL: 6 mg/m ³ 15 minute(s). Form: inhalable fraction

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.

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 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.
- VOC content** : 0 % (w/w) [ISO % 11890-2]

10. Stability and reactivity

- Stability** : The product is stable.
- 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

- Target organs** : Contains material which may cause damage to the following organs: mucous membranes, skin, eye, lens or cornea.

12. Ecological information

Aquatic ecotoxicity

Product/ingredient name	Test	Result	Species	Exposure
troclosene sodium	-	Acute EC50 0.28 to 0.36 ppm Fresh water	Daphnia - Water flea - Daphnia magna - <24 hours	48 hours
	-	Acute EC50 0.19 to 0.24 ppm Fresh water	Daphnia - Water flea - Daphnia magna - <24 hours	48 hours
	-	Acute EC50 0.11 to 0.16 ppm Fresh water	Daphnia - Water flea - Daphnia magna - <24 hours	48 hours
	-	Acute EC50 150 ug/L Fresh water	Daphnia - Water flea - Daphnia magna	48 hours
	-	Acute LC50 1.77 to 3.3 ppm Fresh water	Fish - Bluegill - Lepomis macrochirus	96 hours
	-	Acute LC50 1.72 to 2.09 ppm Fresh water	Fish - Bluegill - Lepomis macrochirus	96 hours
	-	Acute LC50 0.65 to 0.9 ppm Fresh water	Fish - Rainbow trout, donaldson trout - Oncorhynchus mykiss	96 hours
	-	Acute LC50 0.62 to 0.8 ppm Fresh water	Fish - Rainbow trout, donaldson trout - Oncorhynchus mykiss	96 hours
	-	Acute LC50 0.46 to 1 ppm Fresh water	Fish - Bluegill - Lepomis macrochirus	96 hours
	-	Acute LC50 0.358 to 0.42 ppm Fresh water	Fish - Rainbow trout, donaldson trout - Oncorhynchus mykiss	96 hours
	-	Acute LC50 0.283 to 0.389 ppm Fresh water	Fish - Bluegill - Lepomis macrochirus	96 hours
	-	Acute LC50 0.25 to 0.36 ppm Fresh water	Fish - Rainbow trout, donaldson trout - Oncorhynchus mykiss	96 hours
	-	Acute LC50 0.217 to 0.267 ppm Fresh water	Fish - Rainbow trout, donaldson trout - Oncorhynchus mykiss	96 hours
	-	Acute LC50 290 ug/L Fresh water	Fish - Rainbow trout, donaldson trout - Oncorhynchus mykiss	96 hours
boric acid	-	Acute EC50 777 to 932 ppm Fresh water	Daphnia - Water flea - Daphnia magna - <24	48 hours

12. Ecological information

-	Acute EC50 226 to 246 ppm Fresh water	Daphnia - Water flea - Daphnia magna - <24 hours	48 hours
-	Acute EC50 133 to 153 ppm Fresh water	Daphnia - Water flea - Daphnia magna - <24 hours	48 hours
-	Acute LC50 92.83 to 148 mg/L Marine water	Crustaceans - Opossum shrimp - Americamysis bahia - Juvenile (Fledgling, Hatchling, Weanling) - <24 hours	48 hours
-	Acute LC50 89.07 to 100.7 mg/L Marine water	Crustaceans - Opossum shrimp - Americamysis bahia - Juvenile (Fledgling, Hatchling, Weanling) - <24 hours	48 hours
-	Acute LC50 50 to 100 ppm Fresh water	Fish - Rainbow trout, donaldson trout - Oncorhynchus mykiss	96 hours
-	Acute LC50 447000 ug/L Fresh water	Fish - Coho salmon, silver salmon - Oncorhynchus kisutch - FRY - 0.5 g	96 hours
-	Acute LC50 280000 ug/L Fresh water	Fish - Bonytail - Gila elegans - Swim-up - 11 to 18 days	96 hours
-	Acute LC50 279000 ug/L Fresh water	Fish - Colorado squawfish - Ptychocheilus lucius - Swim-up - 17 to 31 days	96 hours
-	Acute LC50 233000 to 293000 ug/L Fresh water	Fish - Razorback sucker - Xyrauchen texanus - Swim-up - 10 to 17 days	96 hours
-	Acute LC50 125000 to 162000 ug/L Fresh water	Fish - Flannelmouth sucker - Catostomus latipinnis - LARVAE - 12 to 13 days	96 hours
-	Acute LC50 >100000 ug/L Fresh water	Fish - Colorado squawfish - Ptychocheilus lucius - Juvenile (Fledgling, Hatchling,	96 hours

12. Ecological information

Weanling) - 99 to
115 days - 0.4 to
1.1 g

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. Empty containers or liners may retain some product residues. This material and its container must be disposed of in a safe way. 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.
S46- If swallowed, seek medical advice immediately and show this container or label.
S61- Avoid release to the environment. Refer to special instructions/safety data sheet.

Contains : troclosen sodium 220-767-7

Product use : Consumer applications.

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15. Regulatory information

Other EU regulations

Tactile warning of danger : Yes, applicable.

Germany

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

Hazard class for water : 2 Appendix No. 4

Technical instruction on air quality control : TA-Luft Number 5.2.1: 100%

Italy

Emission control directive : Not classified.

16. Other information

Full text of R-phrases referred to in sections 2 and 3 - Europe : R8- Contact with combustible material may cause fire.
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.

Full text of classifications referred to in sections 2 and 3 - Europe : O - Oxidising
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

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

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.