

SAFETY DATA SHEET

CW2500 CircuitWorks(R) Epoxy Overcoat Part A

1. IDENTIFICATION OF THE SUBSTANCE/PREPARATION AND OF THE COMPANY/UNDERTAKING

Identification of the substance or preparation

Product name : CW2500 CircuitWorks(R) Epoxy Overcoat Part A
 Chemical name : Epoxy Overcoat Part A
 Product type : Liquid.

Company/undertaking identification

Manufacturer : ITW Chemtronics
 8125 Cobb Center Drive
 Kennesaw, GA 30152
 Tel. 770-424-4888 or toll free 800-645-5244

Distributor :

Importer : ITW Contamination Control
 Skejby Nordlandsvej 307
 DK-8200 Aarhus N
 Denmark
 Tel +45 87 400 220
 Fax +45 87 400 222
 Email: info@itw-cc.com

e-mail address of person responsible for this SDS : askchemtronics@chemtronics.com

Emergency telephone number (with hours of operation) : Emergency telephone number (with hours of operation)

2. HAZARDS IDENTIFICATION

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

Classification : Xi; R36/38
 R43
 N; R51/53

Human health hazards : Irritating to eyes and skin. May cause sensitisation by skin contact.

Environmental hazards : Toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

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
reaction product: bisphenol-A-(epichlorhydrin) and epoxy resin (number average molecular weight <= 700) See section 16 for the full text of the R-phrases declared above	25068-38-6	40 - 60	500-033-5	Xi; R36/38 [1] R43 N; R51/53

There are no additional ingredients present which, within the current knowledge of the supplier and in the concentrations applicable, are classified as hazardous to health or the environment and hence require reporting in this section.

[1] Substance classified with a health or environmental hazard

[2] Substance with a workplace exposure limit

Occupational exposure limits, if available, are listed in section 8.

4. FIRST AID MEASURES

First-aid measures

Inhalation : Move exposed person to fresh air. 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. Get medical attention if adverse health effects persist or are severe. 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.

4. FIRST AID MEASURES

- Ingestion** : 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. Get medical attention if adverse health effects persist or are severe. 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** : Flush contaminated skin with plenty of water. Remove contaminated clothing and shoes. Wash contaminated clothing thoroughly with water before removing it, 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.
- 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 it, 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** : 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 thermal decomposition products** : Decomposition products may include the following materials:
carbon dioxide
carbon monoxide
halogenated compounds
- 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 spilled 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 spilled 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.

Methods for cleaning up

- 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.
- 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 spill product. Note: see section 1 for emergency contact information and section 13 for waste disposal.

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. 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 breathe vapour or mist. Do not ingest. Avoid release to the environment. Refer to special instructions/safety data sheet. 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.

7. HANDLING AND STORAGE

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

<u>Ingredient name</u>	<u>Occupational exposure limits</u>
No exposure limit value known.	

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.
- 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 necessary.
- 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.
- 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.
- 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 level.

9. PHYSICAL AND CHEMICAL PROPERTIES

General information

Appearance

Physical state : Liquid. [Viscous liquid.]
Colour : Green. [Dark]

Important health, safety and environmental information

Boiling point : >293°C (559.4°F)
Flash point : Closed cup: Higher than 93.3°C (200°F).(Setaflash.)
Vapour pressure : <0.01 kPa (<0.1 mm Hg) (at 20°C)
Evaporation rate (butyl acetate = 1) : <1 compared with Butyl acetate.

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** : No known significant effects or critical hazards.
Ingestion : Irritating to mouth, throat and stomach.
Skin contact : Irritating to skin. May cause sensitisation by skin contact.
Eye contact : Irritating to eyes.

Acute toxicity**Potential chronic health effects**

- Chronic effects** : Once sensitized, a severe allergic reaction may occur when subsequently exposed to very low levels.
Carcinogenicity : No known significant effects or critical hazards.
Mutagenicity : No known significant effects or critical hazards.
Teratogenicity : No known significant effects or critical hazards.
Developmental effects : No known significant effects or critical hazards.
Fertility effects : No known significant effects or critical hazards.

Over-exposure signs/symptoms

- Inhalation** : No specific data.
Ingestion : No specific data.
Skin : Adverse symptoms may include the following:
irritation
redness
Eyes : Adverse symptoms may include the following:
irritation
watering
redness

12. ECOLOGICAL INFORMATION

- Environmental effects** : Toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

Aquatic ecotoxicity

- Conclusion/Summary** : Not available.

Biodegradability

- Conclusion/Summary** : Not available.

- 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. 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.

- Hazardous waste** : The classification of the product may meet the criteria for a hazardous waste.

14. TRANSPORT INFORMATION**International transport regulations**

Regulatory information	UN number	Proper shipping name	Classes	PG*	Label	Additional information
ADR/RID Class	Not regulated.	-	Not controlled under European ADR.	-		-
ADNR Class	Not regulated.	-	Not controlled under ADNR (Europe).	-		-
IMDG Class	Not available.	Not available.	Not controlled under IMDG.	-		-
IATA Class	Not available.	Not available.	Not controlled under IATA.	-		-

PG* : Packing group

15. REGULATORY INFORMATIONEU 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, Dangerous for the environment

- Risk phrases** : R36/38- Irritating to eyes and skin.
R43- May cause sensitisation by skin contact.
R51/53- Toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.
- Safety phrases** : S24- Avoid contact with skin.
S37- Wear suitable gloves.
S61- Avoid release to the environment. Refer to special instructions/safety data sheet.
- Contains** : reaction product: bisphenol-A-(epichlorhydrin) and epoxy resin (number average molecular weight <= 700)
- Product use** : Industrial applications.
- Europe inventory** : **Europe inventory:** Not determined.

16. OTHER INFORMATION

Full text of R-phrases referred to in sections 2 and 3 - United Kingdom (UK) : R36/38- Irritating to eyes and skin.
R43- May cause sensitisation by skin contact.
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 - United Kingdom (UK) : Xi - Irritant
N - Dangerous for the environment

History

- Date of printing** : 12/18/2008.
- Date of issue/Date of revision** : 12/18/2008.
- Date of previous issue** : No previous validation.
- Version** : 3
- Prepared by** : Not available.

☑ Indicates information that has changed from previously issued version.

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.

SECTION 1: CHEMICAL PRODUCT AND COMPANY INFORMATION**Company Address:**8125 Cobb Center Drive
Kennesaw, GA 30152Product Information: 800-TECH-401
Customer Service: 800-645-5244Emergency: (Chemtec) 800-424-9300
Revision Date: February 17, 2010**Product Identification****CIRCUITWORKS® EPOXY OVERCOAT - Part B****Product Code: CW2500 (Part B)****SECTION 2: COMPOSITION/INFORMATION ON INGREDIENTS**

Chemical Name	CAS No.	Wt. % Range
Modified aliphatic amine	68410-23-1	80.0-90.0
Triethylenetetramine	112-24-3	2.0-20.0

SECTION 3: HAZARDOUS IDENTIFICATION**Emergency Overview:** Tan paste with amine odor. This product is nonflammable. Harmful to eyes and skin. May cause chemical burns. Breathing high concentrations may produce headaches and dizziness. Overheating may rupture container.**Potential Health Effects:****Eyes:** May cause chemical burn in eye, damage irreversible.**Skin:** May cause chemical burn on skin. Sensitizer - may cause allergic skin reaction.**Ingestion:** May cause chemical burn in gastrointestinal tract. Slightly toxic.**Inhalation:** No specific information available. Heating can generate vapors that could cause headaches, nausea, dizziness and respiratory irritation if inhaled.**Pre-Existing Medical Conditions Aggravated by Exposure:** Liver, kidney, eye, skin**SECTION 4: FIRST AID MEASURES****Eyes:** Immediately flush with large amounts of water. After initial flushing, remove any contact lenses and continue flushing for at least 15 minutes. Have eyes examined by a Physician.**Skin:** Remove contaminated clothing and wash skin with soap and water. Get medical attention if irritation develops persists. Wash clothes separately before reuse.**Ingestion:** If appreciable quantities are swallowed, seek medical attention.**Inhalation:** In case of exposure to high concentrations of vapor or mist, remove to fresh air. If breathing is difficult, give oxygen and call a Physician. If breathing has stopped, apply artificial respiration and call a Physician.**SECTION 5: FIRE FIGHTING MEASURES****Flash Point:** > 212°F (Setaflash) **LEL/UEL:** NA (% by volume in air)**Extinguishing Media:** Use carbon dioxide or dry chemicals for small fires, aqueous foam or water for large fires involving this material.**Fire Fighting Instructions:** Remove all ignition sources. As in any fire, wear self-contained breathing apparatus (pressure demand, OSHA/NIOSH approved or equivalent) and full protective gear.**SECTION 6: ACCIDENTAL RELEASE MEASURES****Large Spills:** Remove all sources of ignition (sparks, open flames, etc.). Wear self-contained breathing apparatus and appropriate personal protective equipment. Ventilate area and contain spill by diking and/or absorbing with inert material. Collect spill by scooping up liquids and absorbent material and place in a chemical waste container for proper disposal. Do not flush to sewer. Prevent material from entering storm sewers, ditches that lead to waterways and ground.**Small Spills:** Absorb spill with absorbent material, then place in a chemical waste container for proper disposal.**SECTION 7: HANDLING AND STORAGE**

Avoid prolonged or repeated contact with skin, eyes or clothing. Wash hands before eating. Use with adequate ventilation. Avoid breathing product vapor. Do not reuse this container. Store in a cool dry place, away from heat, sparks or flames.

KEEP OUT OF REACH OF CHILDREN.**SECTION 8: EXPOSURE CONTROLS, PERSONAL PROTECTION****Exposure Guidelines:**

CHEMICAL NAME	ACGIH TLV	OSHA PEL	ACGIH STEL
Modified aliphatic amine	NA	NA	NA
Triethylenetetramine	NA	NA	NA

Work/Hygienic Practices: Good general ventilation should be sufficient to control airborne levels. Local exhaust ventilation may be necessary to control any air contaminants to within their TLVs during the use of this product. Wear safety glasses with side shields or goggles and rubber or other chemically resistant gloves when handling this material.**NFPA and HMIS Codes:**

	NFPA	HMIS
Health	3	3
Flammability	1	1
Reactivity	0	0
Personal Protection	-	B

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

Physical State: Tan Paste
Odor: Amine odor
pH: NA
Vapor Pressure: <1.0 mmHg @ 20°C
Percent Volatile: < 0.5%

Solubility in Water: Partially soluble
Specific Gravity: 0.97
Evaporation Rate: <1
 (Butyl acetate=1)
Boiling Range: >250°F

SECTION 10: STABILITY AND REACTIVITY

Stability: Stable under normal conditions.
Conditions to Avoid: Storage above 120°F, exposure to light, loss of dissolved air, loss of polymerization, inhibitor, contamination with incompatible materials.
Incompatibility: Avoid epoxy resins and isocyanates. Avoid strong acids, mineral acids and organic acids. Also avoid caustics, alkalis and alkali contamination.
Products of Decomposition: Carbon monoxide, carbon dioxide, and oxides of nitrogen
Hazardous Polymerization: Will not occur.
Conditions to avoid: Polymerization initiators include strong oxidizers, bases, epoxy resins and isocyanates.

SECTION 11: TOXICOLOGICAL INFORMATION

Ingredients	LD50 (rat) Oral	LD50 (rbt) Dermal	LC50 (ppm) (rat) Inhalation
Modified aliphatic amine	>5000 mg/kg	>8000 mg/kg	NA
Triethylenetetramine	>500 mg/kg	NA	NA

Cancer Information: No ingredients listed as human carcinogens by NTP or IARC
Reproductive effects: none Teratogenic effects: none Mutagenic effects: none

SECTION 12: ECOLOGICAL INFORMATION**Environmental Impact Information**

Avoid runoff into storm sewers and ditches which lead to waterways. Water runoff can cause environmental damage.

REPORTING

US regulations require reporting spills of this material that could reach any surface waters. The toll free number for the US Coast Guard National Response Center is: **1-800-424-8802**

SECTION 13: DISPOSAL CONSIDERATIONS

Dispose of in accordance with all federal, state and local regulations. Water runoff can cause environmental damage.

SECTION 14: TRANSPORTATION INFORMATIONAir and Ground Shipments:

Adhesives, sealants
 Not Regulated

SECTION 15: REGULATORY INFORMATION**SECTION 313 SUPPLIER NOTIFICATION**

This product contains no chemicals subject to the reporting requirements of Section 313 of the Emergency Planning and Community Right-To-Know Act of 1986 (40 CFR 372).

This information should be included on all MSDSs copied and distributed for this material.

TOXIC SUBSTANCES CONTROL ACT (TSCA)

All ingredients of this product are listed on the TSCA Inventory.

WHMIS: Class D2B

This product has been classified according to the hazard criteria of the CPR and the MSDS contains all of the information required by the CPR.

SECTION 16: OTHER INFORMATION

Normal ventilation for standard manufacturing practices is usually adequate. Local exhaust should be used when large amounts are released.

To the best of our knowledge, the information contained herein is accurate. However, all materials may present unknown hazards and should be used with caution. In particular, improper use of our products and their inappropriate combination with other products and substances may produce harmful results which cannot be anticipated. Final determination of the suitability of any material is the sole responsibility of the user. Although certain hazards are described herein, we cannot guarantee that these are the only hazards that may exist.