

SAFETY DATA SHEET

CW8300 CircuitWorks(R) Water Soluble Flux Dispensing Pen

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

Identification of the substance or mixture

Product name : CW8300 CircuitWorks(R) Water Soluble Flux Dispensing Pen
Chemical name : Water Soluble Organic Acid Soldering Flux - Halogen Free
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 BV
 Saffierlaan 5
 VZ-2132 Hoofddorp
 The Netherlands

Email: info@itw-cc.com

Tel: +31 88 1307 400
 FAX: +31 88 1307 499

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

Emergency telephone number (with hours of operation) : Chemtrec - 1-800-424-9300 or collect 703-527-3887

2. HAZARDS IDENTIFICATION

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

Classification : T; R23
 Xi; R36

Human health hazards : Toxic by inhalation. Irritating to eyes.

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
propan-2-ol	67-63-0	60 - 95	200-661-7	F; R11 [1] [2] Xi; R36 R67
GLYCERIN	56-81-5	10 - 30	200-289-5	Not classified. [2]
2,2'-iminodiethanol	111-42-2	1 - 10	203-868-0	Xn; R22, [1] [2] R48/22 Xi; R41, R38
dimethylammonium chloride	506-59-2	1 - 10	208-046-5	Xn; R22 [1]
glycollic acid	79-14-1	1 - 2	201-180-5	T+; R26 [1] Xn; R22
See Section 16 for the full text of the R-phrases declared above.				

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 : Get medical attention immediately. 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. 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.

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4. FIRST AID MEASURES

- 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. 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 it, or wear gloves. Continue to rinse for at least 10 minutes. 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. 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.
- 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.
- Hazardous thermal decomposition products** : Decomposition products may include the following materials:
carbon dioxide
carbon monoxide
nitrogen oxides
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 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).
- 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. Do not get in eyes or on skin or clothing. Do not breathe vapour or mist. Do not ingest. Use only with adequate ventilation. Wear appropriate respirator when ventilation is inadequate. 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>
propan-2-ol	ACGIH TLV (United States, 1/2007). STEL: 400 ppm 15 minute(s). TWA: 200 ppm 8 hour(s).
GLYCERIN	ACGIH TLV (United States, 1/2007). TWA: 10 mg/m ³ 8 hour(s). Form: Mist
2,2'-iminodiethanol	ACGIH TLV (United States, 1/2008). Skin TWA: 0.46 ppm 8 hour(s). TWA: 2 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 : Use only with adequate ventilation. 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.

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.

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 levels.

9. PHYSICAL AND CHEMICAL PROPERTIES

General information

Appearance

Physical state : Liquid.
Colour : Amber. Clear. [Light]
Odour : Alcohol-like. [Slight]

Important health, safety and environmental information

pH : 6.7
Boiling point : 82°C (179.6°F)
Melting point : May start to solidify at the following temperature: 19.9°C (67.8°F) This is based on data for the following ingredient: GLYCERIN. Weighted average: -62.08°C (-79.7°F)
Flash point : Lowest known value: Open cup: 11.9°C (53.4°F). (propan-2-ol)
Vapour pressure : 4.9 kPa (37 mm Hg) (at 20°C)
Relative density : 0.9 (Water = 1)
Vapour density : >1 (Air = 1)
Evaporation rate (butyl acetate = 1) : >1 compared with butyl acetate

Other information

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9. PHYSICAL AND CHEMICAL PROPERTIES

Auto-ignition temperature : Lowest known value: 369.9°C (697.8°F) (GLYCERIN).

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** : Toxic by inhalation. Exposure to decomposition products may cause a health hazard. Serious effects may be delayed following exposure.
- Ingestion** : No known significant effects or critical hazards.
- Skin contact** : No known significant effects or critical hazards.
- Eye contact** : Irritating to eyes.

Acute toxicity

Product/ingredient name	Result	Species	Dose	Exposure	
propan-2-ol	LD50 Dermal	Rabbit	12800 mg/kg	-	
	LD50 Intraperitoneal	Rat	2735 mg/kg	-	
	LD50 Intravenous	Rat	1088 mg/kg	-	
	LD50 Oral	Rat	5045 mg/kg	-	
	LD50 Oral	Rat	5000 mg/kg	-	
	TDL _o Intraperitoneal	Rat	800 mg/kg	-	
	GLYCERIN	LD50 Dermal	Rabbit	>10 g/kg	-
		LD50 Intraperitoneal	Rat	4420 mg/kg	-
		LD50 Intravenous	Rat	5566 mg/kg	-
		LD50 Oral	Rat	12600 mg/kg	-
LD50 Subcutaneous		Rat	100 mg/kg	-	
LDLo Intramuscular		Rat	10 mg/kg	-	
TDL _o Intramuscular		Rat	8 mL/kg	-	
TDL _o Intramuscular		Rat	5000 mg/kg	-	
2,2'-iminodiethanol		LD50 Dermal	Rabbit	7640 uL/kg	-
		LD50 Intramuscular	Rat	1500 mg/kg	-
	LD50 Intraperitoneal	Rat	120 mg/kg	-	
	LD50 Intravenous	Rat	778 mg/kg	-	
	LD50 Oral	Rat	620 uL/kg	-	
	LD50 Subcutaneous	Rat	2200 mg/kg	-	
	dimethylammonium chloride	LD50 Oral	Rat	1070 mg/kg	-
		LD50 Oral	Rat	1950 mg/kg	-
	glycollic acid	LC50 Inhalation	Rat	7.1 ug/m ³	4 hours
		Vapour			

Potential chronic health effects

- Chronic effects** : No known significant effects or critical hazards.
- 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** : No specific data.
- Eyes** : Adverse symptoms may include the following:
irritation
watering
redness

- Target organs** : Contains material which causes damage to the following organs: kidneys, upper respiratory tract, skin, central nervous system (CNS), eye, lens or cornea.

11. TOXICOLOGICAL INFORMATION**12. ECOLOGICAL INFORMATION**

Environmental effects : No known significant effects or critical hazards.

Aquatic ecotoxicity

Product/ingredient name	Test	Result	Species	Exposure	
propan-2-ol	-	Acute LC50 11130000 ug/L Fresh water	Fish - Fathead minnow - Pimephales promelas	96 hours	
	-	Acute LC50 10400000 to 10600000 ug/L Fresh water	Fish - Fathead minnow - Pimephales promelas	96 hours	
	-	Acute LC50 9640000 to 10000000 ug/L Fresh water	Fish - Fathead minnow - Pimephales promelas	96 hours	
	-	Acute LC50 6550000 to 7450000 ug/L Fresh water	Fish - Fathead minnow - Pimephales promelas	96 hours	
	-	Acute LC50 4200000 ug/L Fresh water	Fish - Harlequinfish, red rasbora - Rasbora heteromorpha	96 hours	
	-	Acute LC50 >1400000 ug/L	Fish - Western mosquitofish - Gambusia affinis	96 hours	
	-	Acute LC50 1400000 to 1950000 ug/L Marine water	Crustaceans - Common shrimp, sand shrimp - Crangon crangon	48 hours	
	GLYCERIN	-	Acute LC50 54 to 57 ml/L Fresh water	Fish - Rainbow trout,donaldson trout - Oncorhynchus mykiss	96 hours
		-	Acute EC50 72.92 to 86.04 mg/L Fresh water	Daphnia - Water flea - Ceriodaphnia dubia	48 hours
	2,2'-iminodiethanol	-	Acute LC50 >540 ppm Marine water	Fish - Sheepshead minnow - Cyprinodon variegatus	96 hours
-		Acute LC50 1400000 ug/L Fresh water	Fish - Western mosquitofish - Gambusia affinis	96 hours	
-		Acute LC50 1370000 to 1580000 ug/L Fresh water	Fish - Fathead minnow - Pimephales promelas	96 hours	
-		Acute LC50 100000 ug/L Fresh water	Fish - Fathead minnow - Pimephales promelas	96 hours	
-		Acute LC50 >100000 ug/L Fresh water	Fish - Fathead minnow - Pimephales promelas	96 hours	
-		Acute LC50 77900 to 93700 ug/L Fresh water	Daphnia - Water flea - Ceriodaphnia dubia	48 hours	
-		Acute LC50 77500 to 89500 ug/L Fresh water	Daphnia - Water flea - Daphnia magna	48 hours	
-		Acute LC50 55000 to 68000 ug/L Fresh water	Daphnia - Water flea - Daphnia magna	48 hours	
-		Acute LC50 31000 to 36200 ug/L Fresh water	Daphnia - Water flea - Ceriodaphnia dubia	48 hours	
-		Acute LC50 30400 to 47800 ug/L Fresh water	Daphnia - Water flea - Ceriodaphnia dubia	48 hours	
-		Acute LC50	Daphnia - Water	48 hours	

12. ECOLOGICAL INFORMATION

30100 to 39100 ug/L Fresh water	flea - Ceriodaphnia dubia	
- Acute LC50 28800 to 34600 ug/L Fresh water	Daphnia - Water flea - Ceriodaphnia dubia	48 hours
- Acute LC50 2640 ug/L Fresh water	Daphnia - Water flea - Daphnia pulex	48 hours
- Acute LC50 2150 ug/L Fresh water	Daphnia - Water flea - Daphnia pulex	48 hours
- Acute LC50 1550000 to 1990000 ug/L Fresh water	Fish - Fathead minnow - Pimephales promelas	96 hours
- Acute LC50 1480000 to 1630000 ug/L Fresh water	Fish - Fathead minnow - Pimephales promelas	96 hours
- Acute LC50 4710000 to 4980000 ug/L Fresh water	Fish - Fathead minnow - Pimephales promelas	96 hours
- Chronic NOEC 540 ppm Marine water	Fish - Sheepshead minnow - Cyprinodon variegatus	96 hours

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 available.	Not available.	Not available.	-		-
ADN/ADNR Class	Not available.	Not available.	Not available.	-		-
IMDG Class	Not available.	Not available.	Not available.	-		-
IATA Class	Not available.	Not available.	Not available.	-		-

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 :



Toxic

Risk phrases : R23- Toxic by inhalation.
R36- Irritating to eyes.

15. REGULATORY INFORMATION

Safety phrases	: S45- In case of accident or if you feel unwell, seek medical advice immediately (show the label where possible).
Contains	: glycollic acid
Product use	: Industrial applications.
Europe inventory	: Europe inventory: All components are listed or exempted.

16. OTHER INFORMATION

Full text of R-phrases referred to in sections 2 and 3 - Europe	: R11- Highly flammable. R26- Very toxic by inhalation. R23- Toxic by inhalation. R22- Harmful if swallowed. R48/22- Harmful: danger of serious damage to health by prolonged exposure if swallowed. R41- Risk of serious damage to eyes. R36- Irritating to eyes. R38- Irritating to skin. R67- Vapours may cause drowsiness and dizziness.
Full text of classifications referred to in sections 2 and 3 - Europe	: F - Highly flammable T+ - Very toxic T - Toxic Xn - Harmful Xi - Irritant

History

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Prepared by	: Not available.

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Notice to reader

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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.