

SAFETY DATA SHEET

Lead-Free Flux Remover Pen - CW9400

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

Identification of the substance or mixture

Product name : Lead-Free Flux Remover Pen - CW9400
Chemical name : Flux Remover
Synonyms : CW9400
Product type : Liquid.

Use of the substance/mixture : CLEANING PRODUCTS

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 : F; R11
Xi; R36
R67

Physical/chemical hazards : Highly flammable.

Human health hazards : Irritating to eyes. Vapors may cause drowsiness and dizziness.

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

3. COMPOSITION/INFORMATION ON INGREDIENTS

Substance/preparation : Mixture

Ingredient name	CAS number	%	EC number	Classification
acetone	67-64-1	10 - 20	200-662-2	F; R11 [1] [2] Xi; R36 R66, R67
1-methoxy-2-propanol	107-98-2	1 - 7	203-539-1	R10 [2]
N-methyl-2-pyrrolidone	872-50-4	1 - 5	212-828-1	Repr. Cat. 2; [1] [2] R61 Xi; R36/37/38
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

4. FIRST AID MEASURES

- Inhalation** : Remove victim to fresh air and keep at rest in a position comfortable for breathing. If it is suspected that fumes are still present, the rescuer should wear an appropriate mask or self-contained breathing apparatus. 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 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. Remove dentures if any. Remove victim to fresh air and keep at rest in a position comfortable for breathing. 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. 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 dry chemical, CO₂, water spray (fog) or foam.
- Not suitable** : Do not use water jet.
- Special exposure hazards** : Flammable liquid and vapor. Vapor may cause flash fire.
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. Move containers from fire area if this can be done without risk. Use water spray to keep fire-exposed containers cool.
- Hazardous thermal decomposition products** : Decomposition products may include the following materials:
carbon dioxide
carbon monoxide
nitrogen oxides
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. Clothing for fire-fighters (including helmets, protective boots and gloves) conforming to European standard EN 469 will provide a basic level of protection for chemical incidents.

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. Shut off all ignition sources. No flares, smoking or flames in hazard area. Avoid breathing vapor 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).
- 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. Alternatively, or if water-insoluble, absorb with an inert dry material and place in an appropriate waste disposal container. Use spark-proof tools and explosion-proof equipment. Dispose of via a licensed waste disposal contractor.
- Large spill** : Stop leak if without risk. Move containers from spill area. Approach 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. Use spark-proof tools and explosion-proof equipment. Dispose of via a licensed waste disposal contractor. Contaminated absorbent material may pose the same hazard as

6. ACCIDENTAL RELEASE MEASURES

the spilled product.

7. HANDLING AND STORAGE

- Handling** : Avoid contact with eyes, skin and clothing. Keep container closed. Use only with adequate ventilation. Keep away from heat, sparks and flame. Wash thoroughly after handling.
- Storage** : Keep container in a cool, well-ventilated area. Avoid all possible sources of ignition (spark or flame).
- Packaging materials**
- Recommended** : Use original container.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

<u>Ingredient name</u>	<u>Occupational exposure limits</u>
acetone	EH40/2005 WELs (United Kingdom (UK), 8/2007). STEL: 3620 mg/m ³ 15 minute(s). STEL: 1500 ppm 15 minute(s). TWA: 1210 mg/m ³ 8 hour(s). TWA: 500 ppm 8 hour(s).
1-methoxy-2-propanol	EH40/2005 WELs (United Kingdom (UK), 8/2007). Absorbed through skin. STEL: 560 mg/m ³ 15 minute(s). STEL: 150 ppm 15 minute(s). TWA: 375 mg/m ³ 8 hour(s). TWA: 100 ppm 8 hour(s).
N-methyl-2-pyrrolidone	EH40/2005 WELs (United Kingdom (UK), 8/2007). Absorbed through skin. STEL: 309 mg/m ³ 15 minute(s). STEL: 75 ppm 15 minute(s). TWA: 103 mg/m ³ 8 hour(s). TWA: 25 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. Use process enclosures, local exhaust ventilation or other engineering controls to keep worker exposure to airborne contaminants below any recommended or statutory limits. The engineering controls also need to keep gas, vapor or dust concentrations below any lower explosive limits. Use explosion-proof ventilation equipment.
- 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** : A respirator is not needed under normal and intended conditions of product use.
- Hand protection** : Use latex gloves.
- 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.
- 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.
- Color** : Colorless. Clear.

Important health, safety and environmental information

- Boiling point** : Lowest known value: 56.1°C (133°F) (2-Propanone). Weighted average: 80.42°C (176.8°F)
- Melting point** : May start to solidify at the following temperature: -24°C (-11.2°F) This is based on data for the following ingredient: N-methyl-2-pyrrolidone. Weighted average: -85.1°C (-121.2°F)

9. PHYSICAL AND CHEMICAL PROPERTIES

Flash point	: Closed cup: 2°C (35.6°F). (Tagliabue.)
Explosive properties	: Not considered to be a product presenting a risk of explosion.
Explosion limits	: Greatest known range: Lower: 0.99% Upper: 3.9% (N-methyl-2-pyrrolidone)
Relative density	: 0.79 (Water = 1)
Vapor density	: >1 (Air = 1)
Evaporation rate (butyl acetate = 1)	: <1 compared with butyl acetate
Other information	
Auto-ignition temperature	: Lowest known value: 270°C (518°F) (N-methyl-2-pyrrolidone).

10. STABILITY AND REACTIVITY

Stability	: The product is stable.
Conditions to avoid	: Avoid all possible sources of ignition (spark or flame). Do not pressurize, cut, weld, braze, solder, drill, grind or expose containers to heat or sources of ignition. Do not allow vapor to accumulate in low or confined areas.
Materials to avoid	: Highly reactive or incompatible with the following materials: oxidizing materials
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	: Vapors may cause drowsiness and dizziness.
Ingestion	: No known significant effects or critical hazards.
Skin contact	: May cause skin irritation.
Eye contact	: Irritating to eyes.

Acute toxicity

Product/ingredient name	Result	Species	Dose	Exposure
2-Propanone	LD50	Rat	5500 mg/kg	-
	Intravenous			
	LD50 Oral	Rat	5800 mg/kg	-
	LDLo Dermal	Rabbit	20 mL/kg	-
	LDLo	Rat	500 mg/kg	-
	Intraperitoneal			
	TDLo Oral	Rat	5 mL/kg	-
2-Propanol, 1-methoxy-	LC50 Inhalation Vapor	Rat	50100 mg/m3	8 hours
	LD50 Dermal	Rabbit	13 g/kg	-
	LD50	Rat	3720 mg/kg	-
	Intraperitoneal			
	LD50	Rat	>4200 mg/kg	-
	Intravenous			
	LD50 Oral	Rat	6600 mg/kg	-
	LD50	Rat	7800 mg/kg	-
	Subcutaneous			
	LDLo Oral	Rat	3739 mg/kg	-
N-methyl-2-pyrrolidone	LC50 Inhalation Gas.	Rat	10000 ppm	5 hours
	LD50 Dermal	Rabbit	8 g/kg	-
	LD50	Rat	2472 mg/kg	-
	Intraperitoneal			
	LD50	Rat	80500 ug/kg	-
	Intravenous			
	LD50 Oral	Rat	3914 mg/kg	-
	LD50	Rat	>2 g/kg	-
	Subcutaneous			
	LD50 Unreported	Rat	7 g/kg	-
TDLo Oral	Rat	750 mg/kg	-	

Potential chronic health effects

Product/ingredient name	Result	Species	Score	Exposure	Observation
N-methyl-2-pyrrolidone	Eyes - Moderate irritant	Rabbit	-	100 milligrams	-

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

11. TOXICOLOGICAL INFORMATION

Inhalation	: Adverse symptoms may include the following: nausea or vomiting headache drowsiness/fatigue dizziness/vertigo
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: eye, lens or cornea. Contains material which may cause damage to the following organs: upper respiratory tract, skin, central nervous system (CNS).

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Environmental effects : No known significant effects or critical hazards.

Aquatic ecotoxicity

Product/ingredient name	Test	Result	Species	Exposure
2-Propanone	-	Acute LC50 6900 mg/L Fresh water	Daphnia - Water flea - Daphnia magna	48 hours
	-	Acute LC50 5.54 to 6.33 ml/L Fresh water	Fish - Rainbow trout, donaldson trout - Oncorhynchus mykiss - 1 g	96 hours
	-	Acute LC50 13300000 ug/L Fresh water	Daphnia - Water flea - Daphnia magna - <24 hours	48 hours
	-	Acute LC50 12600000 ug/L Fresh water	Daphnia - Water flea - Daphnia magna - <24 hours	48 hours
	-	Acute LC50 12100000 ug/L Fresh water	Daphnia - Water flea - Daphnia magna - <24 hours	48 hours
	-	Acute LC50 11000000 to 11300000 ug/L Marine water	Fish - Bleak - Alburnus alburnus - 8 cm	96 hours
	-	Acute LC50 10700000 ug/L Fresh water	Fish - Fathead minnow - Pimephales promelas - 25 mm	96 hours
	-	Acute LC50 9218000 to 14400000 ug/L Fresh water	Daphnia - Water flea - Daphnia magna - Neonate - <12 hours	48 hours
	-	Acute LC50 9100000 to 9482000 ug/L Fresh water	Fish - Fathead minnow - Pimephales promelas - 2 to 3 months - 19 mm - 0.06 g	96 hours
	-	Acute LC50 8800000 ug/L Fresh water	Daphnia - Water flea - Daphnia pulex - <24 hours	48 hours
	-	Acute LC50 8300000 ug/L Fresh water	Fish - Bluegill - Lepomis macrochirus - 5.3 to 7.2 cm - 3.5 to 3.9 g	96 hours
	-	Acute LC50 8120000 to 8760000 ug/L Fresh water	Fish - Fathead minnow - Pimephales promelas - 33 days - 22.6 mm - 0.159 g	96 hours
	-	Acute LC50 8098000 to 8640000 ug/L Fresh water	Daphnia - Water flea - Ceriodaphnia dubia - Neonate - <12 hours	48 hours
	-	Acute LC50	Daphnia - Water	48 hours

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		7810000 ug/L Fresh water	flea - Daphnia cucullata - 11 days	
	-	Acute LC50 7550000 ug/L Fresh water	Crustaceans - Aquatic sowbug - Asellus aquaticus	48 hours
	-	Acute LC50 7460000 ug/L Fresh water	Daphnia - Water flea - Daphnia cucullata - 11 days	48 hours
	-	Acute LC50 7280000 to 7880000 ug/L Fresh water	Fish - Fathead minnow - Pimephales promelas - 28 days - 19.2 mm - 0.076 g	96 hours
	-	Acute LC50 6210000 to 7030000 ug/L Fresh water	Fish - Fathead minnow - Pimephales promelas - 32 days - 18 mm - 0.087 g	96 hours
	-	Acute LC50 >100000 ug/L Fresh water	Fish - Fathead minnow - Pimephales promelas - Juvenile (Fledgling, Hatchling, Weanling) - 0.2 to 0.5 g	96 hours
	-	Acute LC50 10000 ug/L Fresh water	Daphnia - Water flea - Daphnia magna	48 hours
N-methyl-2-pyrrolidone	-	Acute LC50 1.23 to 1.5 ppm Fresh water	Daphnia - Water flea - Daphnia magna - <24 hours	48 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 minimized wherever possible. Significant quantities of waste product residues should not be disposed of via the foul sewer but processed in a suitable effluent treatment plant. 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. Waste packaging should be recycled. Incineration or landfill should only be considered when recycling is not feasible. This material and its container must be disposed of in a safe way. Care should be taken when handling emptied containers that have not been cleaned or rinsed out. Empty containers or liners may retain some product residues. Vapor from product residues may create a highly flammable or explosive atmosphere inside the container. Do not cut, weld or grind used containers unless they have been cleaned thoroughly internally. Avoid dispersal of spilled 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	1993	FLAMMABLE LIQUIDS, N.O.S. (2-Propanone)	3	-		Tunnel code (D/E)
ADN/ADNR Class	1993	FLAMMABLE LIQUIDS, N.O.S. (2-Propanone)	3	-		-
IMDG Class	1993	FLAMMABLE LIQUIDS, N.O.S. (2-Propanone)	3	-		-Limited quantity

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14. TRANSPORT INFORMATION

IATA Class	1993	FLAMMABLE LIQUIDS, N.O.S. (2- Propanone)	3	-		Excepted quantity
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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 :



Highly flammable, Irritant

Risk phrases

: R11- Highly flammable.
R36- Irritating to eyes.
R67- Vapors may cause drowsiness and dizziness.

Safety phrases

: S16- Keep away from sources of ignition - No smoking. S24/25- Avoid contact with skin and eyes. S26- In case of contact with eyes, rinse immediately with plenty of water and seek medical advice. S2- Keep out of the reach of children.

Contains

: acetone

Product use

: 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.
- Industrial applications

Europe inventory

: All components are listed or exempted.

16. OTHER INFORMATION**Full text of R-phrases**

referred to in sections 2 and 3 - United Kingdom (UK)

: R11- Highly flammable.
R10- Flammable.
R61- May cause harm to the unborn child.
R36- Irritating to eyes.
R36/37/38- Irritating to eyes, respiratory system and skin.
R66- Repeated exposure may cause skin dryness or cracking.
R67- Vapors may cause drowsiness and dizziness.

Full text of classifications

referred to in sections 2 and 3 - United Kingdom (UK)

: F - Highly flammable
Repr. Cat. 2 - Toxic to reproduction category 2
Xi - Irritant

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: No previous validation.

Version

: 2

Prepared by

: Not available.

☑ Indicates information that has changed from previously issued version.

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.