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MSDS-E-CS100L

Prepared to OSHA, ACC, ANSI, NOHSC, WHMIS, 2001/58/EC & 1272/2008/EC Standards

MSDS Revision: 2.0

MSDS Revision Date: 08/22/2012

1. PRODUCT IDENTIFICATION

CircuitSealerTM, (P/N CS100L and CS100L-UV)

1.2

Product Name:

See ingredients listed in section 3

1.3 Synonyms

1.1

1.7

CircuitSealer with and without UV Trace

1.4 Trade Names

CircuitSealer CS100L and CircuitSealer CS100L-UV

1.5

Conformal Coating For Sealing Various Materials

1.6 Manufacturer's Name:

CAIG Laboratories, Inc.

Manufacturer's Address:

12200 Thatcher Court, Poway, CA 92064-6876 USA

1.8 Emergency Phone:

CHEMTREC: +1 (703) 527-3887 / +1 (800) 424-3887

1.9 Business Phone:

+1 (800)-224-4123

Other Product Names:

CircuitSealer: Part No. K-CS100P, PEN Applicator, 7 ml; Part No. K-CS100P-UV, PEN Applicator with UV Tracer, 7 ml; Part No. CS100L-2DB, Brush Applicator, 7.4 ml; Part No. C\$100L-2DB-UV, Brush Applicator with UV Tracer, 7.4 ml; Part No. C\$100L-12, 354 ml Container; Part No. CS100L-12-UV, 354 ml Container with UV Tracer.

2. HAZARD IDENTIFICATION

Hazard Identification:

This product is classified as a HAZARDOUS SUBSTANCE but not as DANGEROUS GOODS according to the classification criteria of NOHSC: 1008(2004) and ADG Code (Australia).

DANGER! HIGHLY FLAMMABLE LIQUID AND VAPOR. Breathing high concentrations of product vapor may produce drowsiness or headache. Vapors displace air and can cause asphyxiation in confined spaces.

Hazard Statements (H): H225 - Highly flammable liquid and vapor. H317 - May cause an allergic skin reaction.

Precautionary Statements (P): P210 - Keep away from heat/sparks/open flames/hot surfaces - No Smoking. P233 -Keep container tightly closed. P243 – Take precautionary measures against static discharge. P280 – Wear protective gloves and eye protection. P303 + P361 + P353 - IF ON SKIN - Remove/take off immediately all contaminated clothing. Rinse skin water/shower. P312 - Call a Poison Control Center or doctor/physician if you feel unwell. P333 + P313 – If skin irritation or rash occurs, get medical advice/attention. P321 – Refer to section 4 of this Safety Data Sheet (First Aid). P305+P351+P338 – IF IN EYES - Rinse continuously with water for several minutes. Remove contact lenses if present and easy to do - continue rinsing. P403 + P235 - Store in a well-ventilated place. Keep cool. P501 - Dispose of contents/container through licensed treatment, storage or disposal facility.



22 Routes of Entry: Inhalation: YES Absorption: Ingestion: YES 2.3

Effects of Exposure:

May cause severe eye irritation, burning, blurred vision. EYES:

Prolonged or repeated contact can cause moderate irritation, defatting, dermatitis. SKIN:

INGESTION: May result in severe or permanent toxic effects.

INHALATION: Not harmful in low quantities.

2.4 Symptoms of Overexposure:

EYES: May cause severe eye irritation, burning, blurred vision.

SKIN: Prolonged or repeated contact can cause moderate irritation, defatting, dermatitis.

INGESTION: May result in severe or permanent toxic effects.

INHALATION: Repeated inhalation of concentration above permissible exposure limits may result in severe or permanent toxic

effects.

2.5 Acute Health Effects:

EYES: May cause severe eye irritation, burning, blurred vision.

SKIN: Prolonged or repeated contact can cause moderate irritation, defatting, dermatitis.

INGESTION: May result in severe or permanent toxic effects.

Repeated inhalation of concentration above permissible exposure limits may result in severe or permanent toxic INHALATION:

effects.

Chronic Health Effects:

May cause severe eye irritation, burning, blurred vision. EYES:

Prolonged or repeated contact can cause moderate irritation, defatting, dermatitis. SKIN:

INGESTION: May result in severe or permanent toxic effects.

Repeated inhalation of concentration above permissible exposure limits may result in severe or permanent toxic INHALATION:

effects.

Target Organs:

Eyes, skin.



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NA = Not Available; ND = Not Determined; NE = Not Established; C = Ceiling Limit; See Section 16 for Additional Definitions of Terms Used NOTE: all WHMIS required information is included. It is located in appropriate sections based on the ANSI Z400.1-2010 format.

	3. COMPOSITION & INGREDIENT INFORMATION												
					EXPOSURE LIMITS IN AIR (mg/m³)								
					AC	GIH		NOHS	2		OSHA		
					pp	om		ppm			ppm		OTHER
							ES-	ES-	ES-				
CHEMICAL NAME(S)	CAS No.	RTECS No.	EINECS No.	%	TLV	STEL	TWA	STEL	PEAK	PEL	STEL	IDLH	
METHYL ETHYL KETONE	78-93-3	EL6475000	201-159-0	60-100	200	300	445	890	NF	NA	300	NA	
ACRYLIC COPOLYMER	NA	NA	NA	15-40	NE	NE	NF	NF	NF	NE	NA	NA	
	•	•	•	•	•			•					
		4	EIDCT AID	AAEAC	HDEC	•							

4. FIRST AID MEASURES

4.1 First Aid:

SKIN:

EYES: Flush eyes thoroughly with copious amounts of water for at least 15 minutes, holding eyelid(s) open to ensure complete

flushing. If irritation persists, seek immediate medical attention.

Remove contaminated clothing and wash affected areas with soap and water. If irritation persists, seek prompt

medical attention. Do not wear contaminated clothing until after it has been properly cleaned.

INGESTION: keep person warm, quiet, and get medical attention immediately.

INHALATION: Remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Seek medical

attention.

1	4.2	Medical Conditions Aggravated by Exposure: None reported by the manufacturer.	HEALTH	1
			FLAMMABILITY	3

PHYSICAL HAZARDS
PROTECTIVE EQUIPMENT

5. FIREFIGHTING MEASURES

-4.5 °C	24 °F)	Setaflash	closed cup	
- 	47 1/	Jeiunasii	Closed Cop	

Autoignition Temperature:

NA

5.3

Flammability Limits: Lower Explosive Limit (LEL): 2.0 Upper Explosive Limit (UEL): 12.0

5.4 Fire & Explosion Hazards:

Carbon dioxide, carbon monoxide, hydrocarbons.

5.5 Extinguishing Methods:

5.1 Flashpoint & Method:

CO₂, Alcohol foam, Dry Chemical.

5.6 Firefighting Procedure:

Wear NIOSH/MSHA approved self-contained breathing apparatus and protective clothing. Do not use water. Prevent runoff from fire control or dilution from entering sewers, drains, drinking water supply, or any natural waterway.



0

В

6. ACCIDENTAL RELEASE MEASURES

6.1 Spill

Secure spill area and deny entry to all unprotected individuals. Individuals involved in the cleanup should wear appropriate personal protective equipment. Area may become slippery. Absorb product onto porous material, such as sand, clay, diatomaceous earth or commercial absorbent material. Place into leak-proof, U.S. DOT-approved containers. If necessary, cover all drains and dike well ahead of the spill to prevent runoff into sewers, drains, and all waterways. Contact appropriate local or provincial authorities for assistance and/or reporting requirements.



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7. HANDLING & STORAGE INFORMATION

7.1 Work & Hygiene Practices:

Wash hands thoroughly after using this product and before eating, drinking, or smoking. Remove soiled clothing to prevent prolonged skin contact.

7.2 Storage & Handling:

Do not expose to sunlight or elevated temperatures to prevent possible bursting. Use in well ventilated areas. Use and store in cool, dry, well ventilated areas away from heat, hot surfaces and all sources of ignition. Protect containers from physical damage. Indoor storage should meet OSHA standards and appropriate codes. Keep container tightly closed when not in use. Keep out of reach of children. Avoid prolonged or repeated contact with skin; eyes or clothing. Avoid breathing product vapor for extended periods of time. Avoid activities that could cause splashing of the spilled material or create mists.

7.3 Special Precautions:

NA

8. EXPOSURE CONTROLS & PERSONAL PROTECTION

8.1 Ventilation & Engineering Controls:

Use with adequate ventilation (e.g., open doors and windows, local exhaust ventilation). Ensure appropriate decontamination equipment is available (e.g., sink, safety shower, eye-wash station).

8.2 Respiratory Protection:

Not necessary unless used in an unventilated area or in high concentrations. If exceeded, a mechanical or self contained breathing apparatus is advised.

8.3 Eye Protection:

Wear splash goggles or other appropriate eye protection.

8.4 Hand Protection

Wear chemically resistant rubber gloves with repeated exposure.

B.5 Body Protection:

None required for normal conditions of use.

9. PHYSICAL & CHEMICAL PROPERTIES

9.1	Density:	0.87
9.2	Boiling Point:	80 °C - 176 °F
9.3	Melting Point:	NA NA
9.4	Evaporation Rate:	>1
9.5	Vapor Pressure:	71 mm Hg
9.6	Molecular Weight:	NA NA
9.7	Appearance & Color:	Clear to hazy liquid
9.8	Odor Threshold:	Pungent, sweet odor
9.9	Solubility:	ND
9.10	рН	ND
9.11	Viscosity:	1700 cps
9.12	Other Information:	Vapor density > 1(Air=1)

10. STABILITY & REACTIVITY

10.1 Stability:

Stable under normal conditions of use (see section 7).

10.2 Hazardous Decomposition Products:

CO, CO2

10.3 Hazardous Polymerization:

Will not occur.

Conditions to Avoid:

Avoid all possible sources of ignition.

10.5 Incompatible Substances:

Strong oxidizing agents.



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riepo	idied to Osha, ACC, ANSI, NOHSC, WHI	vis, 2001/58/EC & 12/2/2008/EC standards MSDS Revision: 2.0 MSDS Revision Date:	00/22/2012
		11. TOXICOLOGICAL INFORMATION	
11.1	Toxicity Data:	II. IOAICOLOGICAL INFORMATION	
11.1	This product has not been teste	ed on animals to obtain toxicological data. There are toxicology data for the ascientific literature. These data have not been presented in this document.	components of this
11.2	Acute Toxicity: See section 2.5		
11.3	Chronic Toxicity: See section 2.6		
11.4	Suspected Carcinogen: NE		
11.5	Reproductive Toxicity:	oduce reproductive toxicity in humans.	
	· · · · · · · · · · · · · · · · · · ·	This product is not reported to produce mutagenic effects in humans.	
		This product is not reported to produce embryotoxic effects in humans.	
		This product is not reported to produce teratogenic effects in humans.	
		This product is not reported to produce reproductive effects in humans.	
11.6	Irritancy of Product:		
	See Section 2.3		
11.7	Biological Exposure Indices: NE		
11.8	Physician Recommendations: Treat symptomatically.		
		12 ECOLOGICAL INFORMATION	
10.1	Environmental Stability	12. ECOLOGICAL INFORMATION	
12.1		om soil. Components of this product will slowly decompose into organic compound	ds.
12.2	Effects on Plants & Animals:		
10.0	There is no specific data availab Effects on Aquatic Life:	le for this product.	
12.3	·	product are expected to be harmful or fatal to overexposed aquatic life.	
	Releases of large voluntes of this	product dre expected to be fluitified of fulfal to overexposed adjudite file.	
	I	13. DISPOSAL CONSIDERATIONS	
13.1	Waste Disposal: Dispose of in accordance with fe	ederal, state or local regulations.	
13.2	Special Considerations: EPA Waste Code: D001 (characte	eristic – ignitability)	
		14. TRANSPORTATION INFORMATION	
		name, hazard class & division, ID Number, packing group) is shown for each mod	e of transportation.
14.1	49 CFR (GND):	y be required by 49 CFR, IATA/ICAO, IMDG and the CTDGR.	
	UN1993, FLAMMABLE LIQUIDS, N.	O.S. (METHYL ETHYL KETONE, ACRYLATES COPOLYMER), 3, II, LTD QTY (IP VOL ≤ 1.0 L)	
14.2	IATA (AIR):	O (IP VOL ≤ 1.0 L) – until 12/31/2013	
17.2	ID8000 CONSUMER COMMODITY		
14.3	IMDG (OCN):	O.S. (METHYL ETHYL KETONE, ACRYLATES COPOLYMER), 3, II, LTD QTY (IP VOL ≤ 1.0 L)	
14.5	` '	O.S. (METHYL ETHYL KETONE, ACRYLATES COPOLYMER), 3, II, LTD QTY (IP VOL ≤ 1.0 L)	
14.4	TDGR (Canadian GND): MARK PACKAGE "LIMITED QUANT	ITY" or "QUANTITÉ LIMITÉE" or "LTD QTY" or "QUANT LTÉE" (≤ 1.0 L)	FLAMMABLE LIQUID
			3
14.5	ADR/RID (EU): UN1993, FLAMMABLE LIQUIDS, N.	O.S. (METHYL ETHYL KETONE, ACRYLATES COPOLYMER), 3, II, LTD QTY (IP VOL ≤ 1.0 L)	
14.6	SCT (MEXICO): UN1993, LIQUIDOS INFLAMMABLE	S, N.E.P. (METAL ETIL KETONE, COPOLIMER ACRILATO), 3, II, LTD QTY (IP VOL ≤ 1.0 L)	Y
14.7	ADGR (AUS): UN1993, FLAMMABLE LIQUIDS, N.O.	O.S. (METHYL ETHYL KETONE, ACRYLATES COPOLYMER), 3, II, LTD QTY (IP VOL ≤ 1.0 L)	



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15. REGULATORY INFORMATION

15.1 SARA Reporting Requirements:

This product contains Methyl Ethyl Ketone, a substance which is subject to SARA 313 reporting requirements.

15.2 SARA Threshold Planning Quantity:

NA

15.3 TSCA Inventory Status:

All chemical substances of this product are listed on the TSCA inventory or are otherwise exempt from inventory status.

15.4 CERCLA Reportable Quantity (RQ):

Methyl Ethyl Ketone: 2,270 kg (5,000 lbs)

15.5 Other Federal Requirements:

NA

15.6 Other Canadian Regulations

This product has been classified according to the hazard criteria of the Controlled Products Regulations (CPR) and the MSDS contains all of the information required by the CPR. The components of this product are listed on the DSL/NDSL. None of the components of this product are listed on the Priorities Substances List. Class B2 Flammable Liquid.





15.7 State Regulatory Information:

Methyl Ethyl Ketone is listed on the following state criteria lists: California OSHA and California Proposition 65 (CA); Massachusetts Right to Know List of Chemicals (MA); New Jersey Right to Know List 8:59 Appendix A (NJ); Pennsylvania Hazardous Substances List 34 323 Appendix A (PA); Wisconsin Hazardous Substances List NR 605.09 (WI); Minnesota Hazardous Substances List (MN); and Florida Toxic Substances List (FL).

15.8 67/548/EEC (European Union) Requirements:

The primary component of this product is not listed in Annex I of EU Directive 67/548/EEC.

<u>Methyl Ethyl Ketone</u>: Flammable, Harmful (F, Xn). R: 11-36/37-66-67 – Flammable. Harmful: may cause lung damage if swallowed. S: 2-9-16 – Keep away from children. Do not breathe gas, fumes, vapor or spray. Avoid contact with skin. If swallowed, do not induce vomiting: seek medical advice immediately and show this MSDS or the container label.

DANGER! HIGHLY FLAMMABLE LIQUID AND VAPOR. Breathing high concentrations of product vapor may produce drowsiness or headache. Vapors displace air and can cause asphyxiation in confined spaces.

Hazard Statements (H): H225 – Highly flammable liquid and vapor. H317 - May cause an allergic skin reaction.

Precautionary Statements (P): P210 – Keep away from heat/sparks/open flames/hot surfaces – No Smoking. P233 – Keep container tightly closed. P243 – Take precautionary measures against static discharge. P280 – Wear protective gloves and eye protection. P303 + P361 + P353 – IF ON SKIN – Remove/take off immediately all contaminated clothing. Rinse skin water/shower. P312 – Call a Poison Control Center or doctor/physician if you feel unwell. P333 + P313 – If skin irritation or rash occurs, get medical advice/attention. P321 – Refer to section 4 of this Safety Data Sheet (First Aid). P305+P351+P338 – IF IN EYES - Rinse continuously with water for several minutes. Remove contact lenses if present and easy to do – continue rinsing. P403 + P235 – Store in a well-ventilated place. Keep cool. P501 – Dispose of contents/container through licensed treatment, storage or disposal facility.







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16.	OTH	ER IN	FORA	MATION
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6.1 Other Information:

NA

16.2 Terms & Definitions:

See last page of this MSDS.

16.3 Disclaime

This Material Safety Data Sheet is offered pursuant to OSHA's Hazard Communication Standard, 29 CFR §1910.1200. Other government regulations must be reviewed for applicability to this product. To the best of ShipMate's & CAIG Laboratories, Inc.'s knowledge, the information contained herein is reliable and accurate as of this date; however, accuracy, suitability or completeness are not guaranteed and no warranties of any type, either expressed or implied, are provided. The information contained herein relates only to the specific product(s). If this product(s) is combined with other materials, all component properties must be considered. Data may be changed from time to time. Be sure to consult the latest edition.

16.4 Prepared for:

CAIG Laboratories, Inc. 12200 Thatcher Court Poway, CA 92064-6876 Tel: +1 (800) CAIG-123 (244-4123) Fax: +1 (858) 486-8398 fax http://www.caig.com/



16.5 Prepared by:

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Fax: +1 (310) 370-5700 http://www.shipmate.com





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DEFINITION OF TERMS

A large number of abbreviations and acronyms appear on a MSDS. Some of these that are commonly used include the following:

GENERAL INFORMATION:

CAS No.	Chemical Abstract Service Number

EXPOSURE LIMITS IN AIR:

ACGIH	H American Conference on Governmental Industrial Hygienists			
TLV	TLV Threshold Limit Value			
OSHA	U.S. Occupational Safety and Health Administration			
PEL	Permissible Exposure Limit			
IDLH	Immediately Dangerous to Life and Health			

FIRST AID MEASURES:

	Cardiopulmonary resuscitation - method in which a person whose
	heart has stopped receives manual chest compressions and breathing
	to circulate blood and provide oxygen to the body

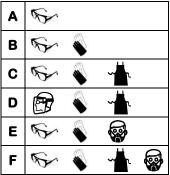
HAZARDOUS MATERIALS IDENTIFICATION SYSTEM: HMIS

HEALTH, FLAMMABILITY & REACTIVITY RATINGS:

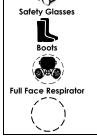
0	Minimal Hazard
1	Slight Hazard
2	Moderate Hazard
3	Severe Hazard
4	Extreme Hazard



PERSONAL PROTECTION RATINGS:













Note: the dotted circle indicates that this respiratory protective equipment is required for high concentrations or for large volume spills or releases of product.

OTHER STANDARD ABBREVIATIONS:

NA	Not Available
NR	No Results
NE	Not Established
ND	Not Determined
ML	Maximum Limit
SCBA	Self-Contained Breathing Apparatus

NATIONAL FIRE PROTECTION ASSOCIATION: NFPA

FLAMMABILIT	FLAMMABILITY LIMITS IN AIR:				
Autoignition Minimum temperature required to initiate combustion in air with no					
Temperature	other source of ignition				
LEL	Lower Explosive Limit - lowest percent of vapor in air, by volume, that				
	will explode or ignite in the presence of an ignition source				
UEL	Upper Explosive Limit - highest percent of vapor in air, by volume,				
	that will explode or ignite in the presence of an ignition source				

HAZARD RATINGS:

0	Minimal Hazard				
1	Slight Hazard				
2	Moderate Hazard				
3	Severe Hazard				
4	Extreme Hazard				
ACD	Acidic				
ALK	Alkaline				
COR	Corrosive				
₩	Use No Water				
OX	Oxidizer				
TREFOIL	Radioactive				



TOXICOLOGICAL INFORMATION:

LD ₅₀	Lethal Dose (solids & liquids) which kills 50% of the exposed animals s						
LC ₅₀	Lethal concentration (gases) which kills 50% of the exposed animal						
ppm Concentration expressed in parts of material per million							
TD _{Io}	Lowest dose to cause a symptom						
TCLo	CLo Lowest concentration to cause a symptom						
TD _{io} , LD _{io} , & LD _o or	Lowest dose (or concentration) to cause lethal or toxic						
TC, TCo, LCio, & LCo	effects						
IARC	International Agency for Research on Cancer						
NTP	National Toxicology Program						
RTECS	Registry of Toxic Effects of Chemical Substances						
BCF	BCF Bioconcentration Factor						
TLm	Median threshold limit						
log Kow or log Koc	Coefficient of Oil/Water Distribution						

REGULATORY INFORMATION:

WHMIS	Canadian Workplace Hazardous Material Information System					
DOT	U.S. Department of Transportation					
TC	Transport Canada					
EPA	U.S. Environmental Protection Agency					
DSL	Canadian Domestic Substance List					
NDSL	Canadian Non-Domestic Substance List					
PSL	Canadian Priority Substances List					
TSCA	U.S. Toxic Substance Control Act					
EU	European Union (European Union Directive 67/548/EEC)					
WGK	Wassergefährdungsklassen (German Water Hazard Class)					

WORKPLACE HAZARDOUS MATERIALS IDENTIFICATION (WHMIS) SYSTEM:

		(A)		\bigoplus	®		R
Α	В	С	D1	D2	D3	E	F
Compressed	Flammable	Oxidizing	Toxic	Irritation	Infectious	Corrosive	Reactive

EC (67/548/EEC) INFORMATION:

1		M	*			×	×
С	E	F	N	0	T+	Xi	Xn
Corrosive	Explosive	Flammable	Harmful	Oxidizing	Toxic	Irritant	Harmful

CLP/GHS (1272/2008/EC) PICTOGRAMS:

			\Diamond					*
GHS01	GHS02	GHS03	GHS04	GHS05	GHS06	GHS07	GHS08	GHS09
Explosive	Flammable	Oxidizer	Pressurized	Corrosive	Toxic	Harmful Irritating	Health Hazard	Environment