

SECTION 1 - PRODUCT AND COMPANY IDENTIFICATION

PRODUCT NAME: CS 1741A **PART NUMBERS:** CS-400, CS-450A, CS-450B, CS-420, CS-452A, CS-452B

PRODUCT USE: Structural adhesive bonding

SUPPLIER: CLOCK SPRING COMPANY L.P.
621 LOCKHAVEN DRIVE
HOUSTON, TX 77073
PHONE: 281-590-8491
EMAIL: MSDS@CLOCKSPRING.COM

MANUFACTURER: IPS Corporation
600 Ellis Road, Durham, NC 27703 - United States
P.O. Box 12729, Research Triangle Park, NC 27709 - USA
Tel. 1-919-598-2400

EMERGENCY: CHEMTREC 800-424-9300 OR 703-527-3887

Medical: Tel. 800.451.8346, 760.602.8703 3E Company (International)

SECTION 2 - HAZARDS IDENTIFICATION

GHS CLASSIFICATION:

Health	Environmental	Physical
Acute Toxicity: Category 3	Acute Toxicity: Category III	Flammable Liquid: Category 2
Skin Irritation: Category 1	Chronic Toxicity: Category IV	
Skin Sensitization: YES		
Eye: Category 1		

GHS LABEL:



OR



Signal Word:
Danger

WHMIS CLASSIFICATION: CLASS B, DIVISION 2
CONTROLLED PRODUCT CLASS D, DIVISION 2B

Hazard Statements

H225: Highly flammable liquid and vapour
H302: Harmful if swallowed
H312: Harmful in contact with skin
H314: Causes severe skin burns and eye damage

H315: Causes skin irritation
H317: May cause an allergic skin reaction
H335: May cause respiratory irritation

Precautionary Statements

P233: Keep container tightly closed
P261: Avoid breathing dust/fume/gas/mist/vapours/spray
P262: Do not get in eyes, on skin, or on clothing
P271: Use only outdoors or in a well-ventilated area
P280: Wear protective gloves/protective clothing/eye protection/face protection

SECTION 3 - COMPOSITION/INFORMATION ON INGREDIENTS

	CAS#	EINECS #	REACH Pre-registration Number	CONCENTRATION % by Weight
Methyl Methacrylate Monomer (MMA),* Stabilized	80-62-6	201-297-1	05-2116297731-37-0000	20 - 40
Methacrylic Acid (MAA)	79-41-4	201-204-4	05-2116297727-26-0000	1 - 10

All of the constituents of this adhesive product are listed on the TSCA inventory of chemical substances maintained by the US EPA, or are exempt from that listing.

*Indicates this chemical is subject to the reporting requirements of Section 313 of the Emergency Planning and Community Right-to-Know Act of 1986 (40CFR372).

indicates that this chemical is found on Proposition 65's List of chemicals known to the State of California to cause cancer or reproductive toxicity.

SECTION 4 - FIRST AID MEASURES

Contact with eyes: Flush eyes immediately with plenty of water for 15 minutes and seek medical advice immediately.
Skin contact: Remove contaminated clothing and shoes. Wash skin thoroughly with soap and water. If irritation develops, seek medical advice.
Inhalation: Remove to fresh air. If breathing is stopped, give artificial respiration. If breathing is difficult, give oxygen. Seek medical advice.
Ingestion: Rinse mouth with water. Give 1 or 2 glasses of water or milk to dilute. Do not induce vomiting. Seek medical advice immediately.

SECTION 5 - FIREFIGHTING MEASURES

Suitable Extinguishing Media: Dry chemical powder, carbon dioxide gas, foam, Halon, water fog.
Unsuitable Extinguishing Media: Water spray or stream.
Exposure Hazards: Inhalation and dermal contact
Combustion Products: Oxides of carbon, oxides of nitrogen, hydrocarbons, hydrocarbons, acrid smoke and gases.
Protection for Firefighters: Self-contained breathing apparatus or full-face positive pressure air-supply masks.

	HMIS	NFPA	
Health	2	2	1-Slight
Flammability	3	3	2-Moderate
Reactivity	2	2	3-Serious
			4-Severe

SECTION 6 - ACCIDENTAL RELEASE MEASURES

Personal precautions: Keep away from heat, sparks and open flame.
Provide sufficient ventilation, use explosion-proof exhaust ventilation equipment or wear suitable respiratory protective equipment.
Prevent contact with skin or eyes (see section 8).
Environmental Precautions: Prevent product or liquids contaminated with product from entering sewers, drains, soil or open water course.
Methods for Cleaning up: Contain spill with sand or other inert adsorbent or absorbent material. Use non-sparking tools.
Transfer to a closable vessel (Metal or polyethylene [PE])

SECTION 7 - HANDLING AND STORAGE

Handling: Avoid breathing of vapor, avoid contact with eyes, skin and clothing.
Keep away from ignition sources, use only electrically grounded handling equipment and ensure adequate ventilation/fume exhaust hoods.
Do not eat, drink or smoke while handling.
Storage: Store in ventilated room or shade and away from direct sunlight. Keep container tightly closed when not in use.
Keep away from ignition sources and incompatible materials. Follow all precautionary information on container label and product bulletins.

SECTION 8 - PRECAUTIONS TO CONTROL EXPOSURE / PERSONAL PROTECTION

EXPOSURE LIMITS:	Component	ACGIH TLV	ACGIH STEL	OSHA PEL	OSHA STEL
	Methyl Methacrylate Mon.	50 ppm	100 ppm	100 ppm	N/E
	Methacrylic Acid	20 ppm skin	N/E	20 ppm skin	N/E

Engineering Controls: Use local exhaust as needed.

Monitoring: Maintain breathing zone airborne concentrations below exposure limits.

Personal Protective Equipment (PPE):

Eye Protection: Avoid contact with eyes, wear splashproof chemical goggles, face shield, safety glasses (spectacles) with brow guards and side shields.
Skin Protection: Prevent contact with the skin as much as possible. Butyl rubber gloves should be used for frequent immersion.
Use of solvent-resistant gloves or solvent-resistant barrier cream should provide adequate protection when normal adhesive application practices and procedures are used for making structural bonds.

Respiratory Protection: Use in a well-ventilated room. Use local exhaust ventilation to remove airborne contaminants from employee breathing zone and to keep contaminants below levels listed above. With normal use, the Exposure Limit Value will not usually be reached.
When limits approached, use respiratory protection equipment.

SECTION 9 - PHYSICAL AND CHEMICAL PROPERTIES

Appearance:	Off-white paste	Odor Threshold:	0.75 ppm: MMA
Odor:	Pungent odor	Evaporation Rate:	> 1.0 (BUAC = 1)
pH:	Not Applicable	Flammability:	Category 2
Boiling Point:	100.5°C (212.9°F) Based on first boiling component: MMA	Flammability Limits:	LEL: 1.6% based on MMA
Flash Point:	11.5°C (52.7°F) T.C.C. based on MMA		UEL: 12.5% based on MMA
Specific Gravity:	1.52 @23°C (73°F)	Vapor Pressure:	28 mm Hg @ 20°C (68°F): MMA
Solubility:	Slight in Water (MMA, MAA)	Vapor Density:	> 3.0 (Air = 1)
Auto-ignition Temperature:	421°C (789.8°F): MMA	VOC Content:	≤ 50 g/l mixed
Decomposition Temperature:	Not Applicable		

SECTION 10 - STABILITY AND REACTIVITY

Stability:	Stable, unless heated
Hazardous decomposition products:	None in normal use. Oxides of carbon, oxides of nitrogen, hydrogen chloride, hydrocarbons, acrid smoke and gases upon combustion.
Conditions to avoid:	Keep away from direct sunlight, heat, sparks, open flame and other ignition sources.
Incompatible Materials:	Reducing and oxidizing agents and metal contaminants

SECTION 11 - TOXICOLOGICAL INFORMATION

Likely Routes of Exposure:	Inhalation, Eye and Skin Contact
Acute symptoms and effects:	
Inhalation:	Severe overexposure may result in nausea, dizziness, headache. Can cause drowsiness, irritation of eyes and nasal passages.
Eye Contact:	Vapors slightly uncomfortable. Overexposure may result in severe eye injury with corneal or conjunctival inflammation on contact with the liquid.
Skin Contact:	Liquid contact may remove natural skin oils resulting in skin irritation. Dermatitis may occur with prolonged contact.
Ingestion:	May cause nausea, vomiting, diarrhea and mental sluggishness.
Chronic (long-term) effects:	None known to humans
Toxicity:	LD₅₀ Methyl Methacrylate Monomer (MMA) Oral: 7900 mg/kg (rat), Dermal: >35000 mg/kg (rabbit) Methacrylic Acid Oral: 1600 mg/kg (rat), Dermal: 500 mg/kg (rabbit)
	LC₅₀ Inhalation: 3 hrs. 7093 PPM (rat) Inhalation: 6.7 mg/l (rat)

Reproductive Effects	Teratogenicity	Mutagenicity	Embryotoxicity	Sensitization to Product	Synergistic Products
Not Established	Not Established	Not Established	Not Established	Not Established	Not Established

SECTION 12 - ECOLOGICAL INFORMATION

Ecotoxicity:	None known
Mobility:	In normal use, emission of volatile organic compounds (VOC's) to the air takes place, typically at a rate of ≤ 50 g/l
Degradability:	Not Established
Bioaccumulation:	Not Established

SECTION 13 - WASTE DISPOSAL CONSIDERATIONS

Follow local and national regulations. Consult local disposal expert.

SECTION 14 - TRANSPORT INFORMATION

Proper Shipping Name:	Adhesives
Hazard Class:	3
Secondary Risk:	None
Identification Number:	UN 1133
Packing Group:	PG III
Label Required:	Class 3 Flammable Liquid
Marine Pollutant:	NO

EXCEPTION for Ground Shipping

DOT Limited Quantity: Up to 5L per inner packaging, 30 kg gross weight per package.
Consumer Commodity: Depending on packaging, these quantities may qualify under DOT as "ORM-D".

TDG INFORMATION

TDG CLASS:	FLAMMABLE LIQUID 3
SHIPPING NAME:	ADHESIVES
UN NUMBER/PACKING GROUP:	UN 1133, PG III

SECTION 15 - REGULATORY INFORMATION

Precautionary Label Information:	Highly Flammable, Harmful	Ingredient Listings:	USA TSCA, Europe EINECS, Canada DSL, Australia AICS, Korea ECL/TCCL, Japan MITI (ENCS)
Symbols:	F, Xn		
Risk Phrases:	R-11 Highly Flammable R-20 Harmful by inhalation R-21 Harmful if contact with skin R-22 Harmful if swallowed	R34 Causes burns R-36/37/38 Irritating to eyes, respiratory system and skin R-43 May cause sensitization by skin contact.	
Safety Phrases:	S-2 Keep out of reach of children S-7 Keep container tightly closed when not in use S-9 Keep container in a well-ventilated place S-15/16 Keep away from heat and sources of ignition. No smoking S-23 Do not breathe vapor	S-24/25 Avoid contact with skin and eyes. S-29 Do not empty into drains S-37 Wear suitable gloves S-46 If swallowed, seek medical advice immediately and show this container or label S-51 Use only in well ventilated areas	

SECTION 16 - OTHER INFORMATION

Specification Information:		
Department issuing data sheet:	IPS, Safety Health & Environmental Affairs	All ingredients are compliant with the requirements of the European Directive on RoHS (Restriction of Hazardous Substances).
E-mail address:	<EHSinfo@ipscorp.com>	
Training necessary:	Yes, training in practices and procedures contained in product literature.	
Reissue date / reason for reissue:	07/31/2012 / Updated GHS Standard Format	
Intended Use of Product:	Structural adhesive bonding	

This product is intended for use by skilled individuals at their own risk. The information contained herein is based on data considered accurate based on current state of knowledge and experience. However, no warranty is expressed or implied regarding the accuracy of this data or the results to be obtained from the use thereof.

Prepared By: Clock Spring Company L.P.

From Information Supplied By: IPS CORPORATION

PREPARED: 7/31/12

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SUPERCEDES: 5/3/12

The Information in the Material Safety Data Sheet has been compiled from our experience and data presented in various technical publications. It is the user's responsibility to determine the suitability of this information for the adoption of the safety precautions as may be necessary. We reserve the right to revise Material Safety Data Sheets from time to time as new technical information becomes available. The user has the responsibility to contact the company to make sure that the sheet is the latest on issued.