CLOCK SPRING

SAFETY DATA SHEET

Safety Data Sheet according to Regulation (EC) 1907/2006.
Version: 2.0
Revision Date: August 1, 2018
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SECTION 1: IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND OF THE COMPANY/ UNDERTAKING

1.1. Product identifier:

Product ID: CSC-700/702-A (Part A Epoxy Resin)

Product Name: High Temperature Contour (Part A Epoxy Resin)

1.2. Relevant identified uses of the substance or mixture and uses advised against

Relevant identified uses:

Uses advised against:

1.3. Details of the supplier of the safety data sheet

Supplier's name: Clock Spring Company L.P.

Address: 621 Lockhaven Drive. Houston, TX 77073

Information phone: 281-590-8491

1.4. Emergency telephone number

Supplier's emergency phone: 800-424-9300 Intl:703-527-3887
Chemtrec Contract # 5043

SECTION 2: HAZARDS IDENTIFICATION

2.1. Classification of the substance or mixture

Classification according to Regulation (EC) No 1278/2008 (CLP):

Skin Irritation - Category 2
Skin Sensitizer - Category 1
Eye Irritation - Category 2
Chronic Aquatic Toxicity - Category 2

2.2. Label elements

Labeling according to Regulation (EC) No 1272/2008 (CLP)

Hazard pictograms:

Signal word:

Attention

Hazard statements - Health:

H315 Causes skin irritation
H317 May cause an allergic skin reaction
H319 Causes serious eye irritation

Hazard statements – Environmental:

H411 Toxic to aquatic life with long lasting effects

Precautionary statements:

P273	Avoid release to the environment
P280	Wear protective gloves/protective clothing/eye protection/face protection.
P302+P352	IF ON SKIN: Wash with plenty of water.
P305+P351+P338	IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P362+P364	Take off contaminated clothing and wash it before reuse
P391	Collect spillage

EUH statements:

EUH205 Contains epoxy constituents. May produce an allergic reaction.

2.3. Other hazards

In normal use conditions and in its original form, the product itself does not involve any other risk for health and the environment.

SECTION 3. COMPOSITION / INFORMATION ON INGREDIENTS

3.1. Substances

NA

3.2. Mixtures

Common Name	CAS No.	EC No.	INDEX No.	REACH Registration No., if applicable.	% [weight]	International Chemical Identification	Classification according to Regulation (EC) No 1278/2008 (CLP). CLP
PHENOL, POLYMER WITH FORMALDEHYDE, GLYCIDYL ETH	28064-14-4	608-164-0	NA	NA	60-100%	2-(chloromethyl)oxirane; Formaldehyde; Phenol	Skin Irrit.2, H315 Eye Irrit. 2, H319 Skin Sens. 1, H317 Aquatic Chronic 2, H411.
BUTANE, 1,4-BIS(2,3-EPOXYPROPOXY)	2425-79-8	219-371-7	603-072-00-7	01-2119494060-45-XXXX	>40%	1,4-bis(2,3-epoxypropoxy)butane	Acute tox. 4, H312 Skin Irrit. 2, H315 Eye Irrit. 2, H319 Skin Sens. 1, H317 Acute Tox. 4, H332
BISPHENOL A DIGLYCIDYL ETHER POLYMER	25068-38-6	500-033-5	603-074-00-8	01-2119456619-26-XXXX	1-10%	4,4'-Isopropylidenediphenol, oligomeric reaction products with 1-chloro-2,3-epoxypropane	Skin Irrit.2, H315 Eye Irrit. 2, H319 Skin Sens. 1, H317 Aquatic Chronic 2, H411.

SECTION 4. FIRST AID MEASURES

4.1. Description of first aid measures

Skin Contact:

Take off contaminated clothing, shoes and leather goods (e.g. watchbands, belts). Wash with plenty of lukewarm, gently flowing water for a duration of 15-20 minutes. If skin irritation or rash occurs: Get medical advice/attention. Wash contaminated clothing before re-use.

Eye Contact:

Remove source of exposure or move person to fresh air. Rinse eyes cautiously with lukewarm, gently flowing water for several minutes, while holding the eyelids open. Remove contact lenses, if present and easy to do. Continue rinsing for a duration of 15-20 minutes. If eye irritation persists: Get medical advice/attention.

Ingestion:

Rinse mouth. Get medical attention/advice if you feel unwell. Do NOT induce vomiting unless directed by the poison control center or doctor.

Inhalation:

Remove source of exposure or move person to fresh air and keep comfortable for breathing. Call a POISON CENTER or doctor if you feel unwell.

4.2. Most important symptoms and effects, both acute and delayed

Not available.

4.3 Indication of any immediate medical attention and special treatment needed

Not available.

SECTION 5: FIREFIGHTING MEASURES

5.1. Extinguishing media

Suitable Extinguishing Media:

Dry chemical, foam, carbon dioxide water spray or fog is recommended. Water spray is recommended to cool or protect exposed

materials or structures. Carbon dioxide can displace oxygen. Use caution when applying carbon dioxide in confined spaces. Simultaneous use of foam and water on the same surface is to be avoided as water destroys the foam. Sand or earth may be used for small fires only.

Unsuitable Extinguishing Media:

High pressure water jet, Water may cause frothing.

5.2. Special hazards arising from the substance or mixture

Hazardous decomposition products formed under fire conditions.

5.3. Advice for firefighters

Isolate immediate hazard area and keep unauthorized personnel out. Stop spill/release if it can be done safely. Move undamaged containers from immediate hazard area if it can be done safely. Water spray may be useful in minimizing or dispersing vapors and to protect personnel. Water may be ineffective but can be used to cool containers exposed to heat or flame. Caution should be exercised when using water or foam as frothing may occur, especially if sprayed into containers of hot, burning liquid.

Dispose of fire debris and contaminated extinguishing water in accordance with official regulations.

Special Protective Actions:

Wear protective pressure self-contained breathing apparatus (SCBA) and full turnout gear.

SECTION 6: ACCIDENTAL RELEASE MEASURES

6.1. Personal precautions, protective equipment and emergency procedures

Personal Precautions:

Avoid breathing vapor. Avoid contact with skin, eye or clothing. Do not touch damaged containers or spilled materials unless wearing appropriate protective clothing.

Recommended Equipment:

Positive pressure, full-facepiece self-contained breathing apparatus (SCBA), or positive pressure supplied air respirator with escape SCBA (approved by EN-standards listed under Regulation (EU) 2016/425 on personal protective equipment and repealing Council Directive 89/686/EEC).

Emergency Procedure:

Isolate hazard area and keep unnecessary people away. Remove all possible sources of ignition in the surrounding area. Notify authorities if any exposure to the general public or the environment occurs or is likely to occur.

Cover the liquid with inert absorbent. Scoop all contaminated material into containers for proper disposal. Flush area with water to remove residues.

Do not touch or walk through spilled material.

ELIMINATE all ignition sources (no smoking, flares, sparks or flames in immediate area).

6.2. Environmental precautions

Stop spill/release if it can be done safely. Prevent spilled material from entering sewers, storm drains, other unauthorized drainage systems and natural waterways by using sand, earth, or other appropriate barriers.

6.3. Methods and material for containment and cleaning up

Not specified.

6.4. Reference to other sections

NA

SECTION 7: HANDLING AND STORAGE

7.1. Precautions for safe handling

General:

Wash hands after use.

Do not get in eyes, on skin or on clothing.

Do not breathe vapors or mists.

Use good personal hygiene practices.

Eating, drinking and smoking in work areas is prohibited.

Remove contaminated clothing and protective equipment before entering eating areas.

Eyewash stations and showers should be available in areas where this material is used and stored.

Ventilation Requirements:

Use process enclosures, local exhaust ventilation, or other engineering controls to keep airborne levels below recommended exposure limits. If user operations generate dust, fume or mist, use ventilation to keep exposure to airborne contaminants below the exposure limit.

7.2. Conditions for safe storage, including any incompatibilities

Keep container(s) tightly closed and properly labeled. Store in cool, dry, well-ventilated areas away from heat, direct sunlight, strong oxidizers and any incompatibilities. Store in approved containers and protect against physical damage. Keep containers securely sealed when not in use. Indoor storage should meet EN standards and appropriate fire codes. Containers that have been opened must be

carefully resealed to prevent leakage. Empty container retain residue and may be dangerous.
Do not cut, drill, grind, weld or perform similar operations on or near containers.
Crystalline silica may be generated when machining cured products.

7.3. Specific end use(s)

See section 13.

SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1. Control parameters

No Exposure Limits are set for any of the substances disclosed in Section 3.

8.2. Exposure controls

Follow established company guidelines

Appropriate Engineering Controls:

Provide exhaust ventilation or other engineering controls to keep the airborne concentrations of vapors below their respective threshold limit value.

Eye Protection:

Wear eye protection with side shields or goggles. Wear indirect-vent, impact and splash resistant goggles when working with liquids. If additional protection is needed for entire face, use in combination with a face shield.

Skin Protection:

Use of gloves approved to relevant standards made from the following materials may provide suitable chemical protection: PVC, neoprene or nitrile rubber gloves. Suitability and durability of a glove is dependent on usage, e.g. frequency and duration of contact, chemical resistance of glove material, glove thickness, dexterity. Always seek advice from glove suppliers. Contaminated gloves should be replaced. Chemical-resistant clothing is recommended to avoid prolonged contact. Avoid unnecessary skin contact.
Wear gloves, long sleeved shirt, long pants and other protective clothing as required to minimize skin contact.

Respiratory Protection:

If engineering controls do not maintain airborne concentrations to a level which is adequate to protect worker, a respiratory protection program that meets or is equivalent to OSHA 29 CFR 1910.134 and ANSI Z88.2 should be followed (European equivalence with EN standards listed under Regulation (EU) 2016/425 on personal protective equipment). Check with respiratory protective equipment suppliers.
Use EN approved organic vapor cartridge respirator when vapor mist exposure is likely.

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

9.1. Information on basic physical and chemical properties

% Solids By Weight	99.24%
% VOC	0.70%
VOC Actual	8.08 g/l
Specific Gravity	1.16
Appearance	Clear Liquid
Odor Description	N/A
pH	N/A
Flash Point	N/A
Flammability	N/A
Boiling Point	N/A
Evaporation Rate	<1 (Butyl Acetate=1)
Water Solubility	Negligible
Vapor Density	>1 (Air = 1)

9.2. Other information

NA

SECTION 10: STABILITY AND REACTIVITY

10.1. Reactivity

10.2. Chemical stability

Stable at normal temperature and pressure.

10.3. Possibility of hazardous reactions

No data available.

10.4. Conditions to avoid

Avoid contact with heat, flame, spark and other igniter. Avoid radical forming substances (metal-ions, peroxides).Uncontrolled polymerization may cause rapid evolution of heat and increase in pressure that could result in violent rupture of sealed storage vessels or containers.

10.5. Incompatible materials

Avoid oxidizing agents, acids and bases.

10.6. Hazardous decomposition products

Carbon monoxide, carbon dioxide and various hydrocarbons upon thermal decomposition.

SECTION 11: TOXICOLOGICAL INFORMATION

11.1. Information on toxicological effects

Acute Toxicity:

Ingestion: May cause gastrointestinal disturbances such as nausea, vomiting, diarrhea and effects similar to those described in inhalation. Aspiration of this product into the lungs during ingestion or vomiting may cause mild to severe pulmonary injury, possibly progressing to death.

CAS 2425-79-8 1, 4-bis (2, 3-epoxypropoxy) butane

LD50: 1118 - 1293 mg/kg bw (rat), oral route

LD50: 2150 mg/kg bw (rat), dermal route

Repeated-dose toxicity:

NOAEL (rat): 200 mg/kg bw/day

CAS 25068-38-6 4, 4'-Isopropylidenediphenol, oligomeric reaction products with 1-chloro-2, 3-epoxypropane

LD50 2000 mg/kg bw (rat)

Aspiration Hazard:

No Data Available

Carcinogenicity:

No Data Available

Germ Cell Mutagenicity:

No Data Available

Reproductive Toxicity:

No Data Available

Respiratory/Skin Sensitization:

May cause an allergic skin reaction

Serious Eye Damage/Irritation:

Causes serious eye irritation

Skin Corrosion/Irritation:

Causes skin irritation

Specific Target Organ Toxicity - Repeated Exposure:

May cause damage to organs through prolonged or repeated exposure.

Specific Target Organ Toxicity - Single Exposure:

Exposure to high concentrations of vapors may cause central nervous system effects, including headache, drowsiness, and incoordination.

Potential Health Effects - Miscellaneous

0025068-38-6 BISPHENOL A DIGLYCIDYL ETHER POLYMER

The following medical conditions may be aggravated by exposure: skin disorders. Laboratory studies with rats have shown that petroleum distillates can cause kidney damage and kidney or liver tumors. These effects were not seen in similar studies with guin

CAS 2425-79-8 1,4-bis(2,3-epoxypropoxy)butane

Data from ECHA Disclosure

Data for WORKERS

INHALATION Exposure	Threshold	Most sensitive study
Local Effects		
Long-term:	(DNEL) 4.7 mg/m³	Repeated dose toxicity

DERMAL Exposure	Threshold	Most sensitive study
Local Effects		
Long-term:	(DNEL) 6.6 mg/kg bw/day	Repeated dose toxicity

Data for the GENERAL POPULATION

INHALATION Exposure	Threshold	Most sensitive study
Systemic Effects		
Long-term:	(DNEL) 1.16 mg/m^3	repeated dose toxicity

DERMAL Exposure	Threshold	Most sensitive study
Systemic Effects		
Long-term:	(DNEL) 3.33 µg/kg bw/day	repeated dose toxicity

ORAL Exposure	Threshold	Most sensitive study
Systemic Effects		
Long-term:	(DNEL) 330 µg/kg bw/day	repeated dose toxicity

SECTION 12: ECOLOGICAL INFORMATION

12.1. Toxicity

Harmful to aquatic life with long lasting effects.

Available data from ECHA Brief Profile of substances:

CAS 2425-79-8; 1,4-bis(2,3-epoxypropoxy)butane

Hazard for Aquatic Organisms	**PNEC**
Freshwater	24 µg/L
Intermittent releases (freshwater)	240 µg/L
Marine water	2.4 µg/L
Sewage treatment plant (STP)	100 mg/L
Sediment (freshwater)	84 µg/kg sediment dw
Sediment (marine water)	8.4 µg/kg sediment dw

Short-term toxicity to fish, study results:
LC50 (4 days) 24 mg/L
LC50 (72 h) 24 mg/L
LC50 (48 h) 43 mg/L
LC50 (24 h) 61 mg/L
LC0 (4 days) 18 mg/L

Short–term toxicity to aquatic invertebrates:
EC50 (24 h) 75 - 76 mg/L
EC0 (24 h) 32 mg/L
EC100 (24 h) 100 mg/L

Toxicity to aquatic algae and cyanobacteria:
EL10 (72 h) 40 - 97 mg/L
EL20 (72 h) 57 - 140 mg/L
EL50 (72 h) 110 - 160 mg/L
NOELR (72 h) 40 mg/L
LOELR (72 h) 80 mg/L
Toxicity to microorganisms:
IC50 (3 h) 100 mg/L

CAS 25068-38-6 4,4'-Isopropylidenediphenol, oligomeric reaction products with 1-chloro-2,3-epoxypropane
Short–term toxicity to aquatic invertebrates:
EC50 (48 h) 2 mg/L

Toxicity to aquatic algae and cyanobacteria:
EC50 (48 h) 9 mg/L

12.2. Persistence and degradability

No data available.

12.3. Bioaccumulative potential

No data available.

12.4. Mobility in soil

No data available.

12.5. Results of PBT and vPvB assessment
No data available.

12.6. Other adverse effects
No data available.

SECTION 13: DISPOSAL CONSIDERATIONS

13.1. Waste treatment methods
According to DIRECTIVE 2008/98/EC the waste resulting is classified as H 13/14, according to Annex III.

Local, national and European waste management legislation for the particular form of containment used must be complied with.

It should be noted that final decisions on the appropriate waste management method, in line with regional, national and European legislation, and possible adaptation to local conditions, remains the responsibility of the waste treatment operator.

Empty containers retain product residue which may exhibit hazards of material, therefore do not pressurize, cut, glaze, weld or use for any other purpose. Return drums to reclamation centers for proper cleaning and reuse.

SECTION 14: TRANSPORT INFORMATION

14.1. UN number
3082

14.2. UN proper shipping name
Environmentally Hazardous Substance, Liquid, N.O.S. (Bisphenol A Epoxy Resin)

14.3. Transport hazard class(es)
9

14.4. Packing group
III

14.5. Environmental hazards
Environmentally Hazardous.

14.6. Special precautions for user
Label 9.

14.7. Transport in bulk according to Annex II of MARPOL and the IBC Code
IBC03.

SECTION 15: REGULATORY INFORMATION

15.1. Safety, health and environmental regulations/legislation specific for the substance or mixture
EU REGULATIONS:

- Regulation (EC) 1907/2006 of the European Parliament and of the Council of 18 December 2006 concerning the
- Registration, Evaluation, Authorization and Restriction of Chemicals (REACH), according to Annex II.
- Regulation (EC) 1272/2008 on the classification, labeling and packaging of substances and mixtures (CLP
- Regulation)
- Regulation (EU) 2016/425 of the European Parliament and of the Council of 9 March 2016 on personal protective equipment and repealing Council Directive 89/686/EEC.
- Directive (EC) 98/2008 on waste
- ADR: European Agreement Concerning the International Carriage of Dangerous Goods by Road

Restrictions of occupation

GESTIS INTERNATIONAL LIMIT VALUES, by IFRA Institut für Arbeitsschutz der Deutschen Gesetzlichen Unfallversicherung.

Information on chemical hazards:

ECHA webpage, brief profile of substances and summary disclosures.

AGENCIES:
ECHA: European Chemicals Agency.

15.2. Chemical safety assessment
NA

SECTION 16: OTHER INFORMATION

Glossary:

ACGIH- American Conference of Governmental Industrial Hygienists; ANSI- American National Standards Institute; Canadian TDG Canadian Transportation of Dangerous Goods; CAS- Chemical Abstract Service; Chemtrec- Chemical Transportation Emergency Center (US); CHIP- Chemical Hazard Information and Packaging; DSL- Domestic Substances List; EC- Equivalent Concentration;

EH40 (UK)- HSE Guidance Note EH40 Occupational Exposure Limits; EN- European Standard; EPCRA- Emergency Planning and Community Right-To-Know Act; ESL- Effects screening levels; HMIS- Hazardous Material Information Service; LC- Lethal Concentration; LD- Lethal Dose; NFPA National Fire Protection Association; OEL- Occupational Exposure Limits; OSHA- Occupational Safety and Health Administration, US

Department of Labor; PEL- Permissible Exposure Limit; SARA (Title III)- Superfund Amendments and Reauthorization Act; SARA 313- Superfund Amendments and Reauthorization Act, Section 313; SCBA- Self-Contained Breathing Apparatus; STEL- Short Term Exposure Limit; TCEQ- Texas Commission on Environmental Quality; TLV- Threshold Limit Value; TSCA- Toxic Substances Control Act Public Law 94-469; TWA- Time Weighted Value; US DOT- US Department of Transportation; WHMIS- Workplace Hazardous Materials Information System.

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