

Cycle PC-560



Technical Dossier

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S H E P A R D B R O S . I N C .

Cycle PC-560

Cooling Water Treatment

PRODUCT DESCRIPTION

CYCLE PC-560 is a custom blended formulation of corrosion inhibitors and polymer dispersants which provide excellent control of scale and corrosion in alkaline-treated cooling water systems. **CYCLE PC-560** is designed for industrial use in open recirculating cooling towers and evaporative condensers.

PROPERTIES AND BENEFITS

- Helps prevent scale and corrosion products from forming
- Continuously fed product will effectively disperse calcium, magnesium, sulfates and silica
- Designed to prevent corrosion in mild steel and admiralty brass heat exchange surfaces
- Effective in dispersing low levels of silts and clays that buildup over time due to environmental conditions

DIRECTIONS

CYCLE PC-560 should be fed continuously based on blowdown water losses to maintain a 100 – 150 ppm concentration in the treated system.

CYCLE PC-560 can be monitored in the treated system by testing for molybdate in the cycled up cooling system. More precise treatment guidelines can be prescribed based on an evaluation of your plant's make up water quality.

Consult your Shepard Bros. Inc representative for specific use instructions and recommended dispensary equipment.

SAFE HANDLING

A Safety Data Sheet containing detailed information regarding the properties and safe handling of **CYCLE PC-560** is available on request and should be reviewed prior to using this product.

(Rev. 07/18)

The technical information and use suggestions herein are presented in good faith and are believed to be reliable. They do not constitute a part of our terms and conditions of sale unless specifically incorporated in our Order Acknowledgement. Nothing herein shall be deemed to constitute a warranty, expressed or implied, that said information or data are correct, or that the product described is merchantable or fit for a particular purpose, or that said information, data or product can be used without infringing patents of a third party. The purchaser must determine individually, by preliminary tests or otherwise, the suitability of this product for the intended purpose.

1. PRODUCT AND COMPANY IDENTIFICATION

Product Code: CPC560
Product Name: Cycle-PC560
Company Name: Shepard Bros., Inc.
 503 S. Cypress St.
 La Habra, CA 90631
Phone Number: +1 (562)697-1366
Web site address: www.shepardbros.com
Emergency Contact: CHEMTREC +1 (800)424-9300
Product Category: Corrosion Inhibitor

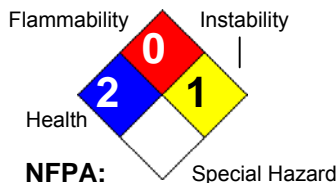
2. HAZARDS IDENTIFICATION

Skin Corrosion/Irritation, Category 1A
Serious Eye Damage/Eye Irritation, Category 1



GHS Signal Word: **Danger**
GHS Hazard Phrases: H314 - Causes severe skin burns and eye damage.
 H318 - Causes serious eye damage.
GHS Precaution Phrases: P260 - Do not breathe dust/fume/gas/mist/vapors/spray.
 P264 - Wash hands thoroughly after handling.
 P280 - Wear protective gloves/protective clothing/eye protection/face protection.
GHS Response Phrases: P301+330+331 - IF SWALLOWED: Rinse mouth. Do NOT induce vomiting.
 P303+361+353 - IF ON SKIN (or hair): Remove/take off immediately all contaminated clothing. Rinse skin with water/shower. P363 - Wash contaminated clothing before reuse.
 P304+340 - IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing.
 P305+351+338 - IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. P310 - Immediately call a POISON CENTER or doctor/physician.
 P321 - Specific treatment see Section 4 reference to supplemental first aid instruction - if immediate measures are required.
GHS Storage and Disposal Phrases: P405 - Store locked up. P501 - Dispose of contents and containers in accordance with local, regional, national, and international regulations.

Hazard Rating System:



Potential Health Effects (Acute and Chronic): Prolonged or repeated eye contact may cause conjunctivitis. Prolonged or repeated skin contact may cause dermatitis. Chronic: Effects may be delayed.
Inhalation: Material is irritating to mucous membranes and upper respiratory tract. Irritation may lead to chemical pneumonitis and pulmonary edema. May cause severe respiratory tract irritation with possible burns.
Skin Contact: Causes skin irritation. May cause skin rash (in milder cases), and cold and clammy skin with cyanosis or pale color. Causes redness and pain. May cause severe burns to the skin. Prolonged skin contact can be destructive to tissue.
Eye Contact: May cause burns to the eyes. May cause severe eye damage. May cause irreversible eye



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injury. Prolonged or repeated eye contact may cause conjunctivitis. Effects may be delayed.

Ingestion: Harmful if swallowed. May cause severe digestive tract irritation with possible burns.

3. COMPOSITION/INFORMATION ON INGREDIENTS

CAS #	Hazardous Components (Chemical Name)	Concentration
1310-58-3	Potassium hydroxide	<15.0 %
26099-09-2	Polymaleic acid	<12.0 %
9003-04-7	Sodium polyacrylate	<5.00 %
64665-57-2	Sodium tolytriazole	<3.00 %
2809-21-4	1-Hydroxyethylidene-1,1-diphosphonic acid	<3.00 %
10102-40-6	Sodium molybdate	<2.00 %

4. FIRST AID MEASURES

Emergency and First Aid

Procedures:

- In Case of Inhalation:** Remove from exposure and move to fresh air immediately. If breathing is difficult, give oxygen. If breathing has ceased apply artificial respiration using oxygen and a suitable mechanical device such as a bag and a mask. Get medical attention immediately.
- In Case of Skin Contact:** Flush skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes. Gently wash with plenty of soap and water. Wash contaminated clothing separately before reuse. Get medical attention immediately.
- In Case of Eye Contact:** Flush eyes with plenty of water for at least 15 minutes, occasionally lifting the upper and lower eyelids. Remove contact lenses, if present and easy to do after 5 minutes and continue rinsing for an additional 15 minutes. Get medical attention immediately.
- In Case of Ingestion:** Not significantly toxic or corrosive. Rinse mouth. Induce vomiting if a large amount is ingested. Never give anything by mouth to an unconscious person. Get medical attention immediately.
- Note to Physician:** Treat symptomatically and supportively. Show this safety data sheet to the doctor in attendance.

5. FIRE FIGHTING MEASURES

- Flash Pt:** NA Method Used: Not Applicable
- Explosive Limits:** LEL: No data. UEL: No data.
- Autoignition Pt:** NA
- Suitable Extinguishing Media:** Use water spray, dry chemical, carbon dioxide, or alcohol-resistant foam.
- Fire Fighting Instructions:** As in any fire, wear a self-contained breathing apparatus in pressure-demand, MSHA/NIOSH approved (or equivalent), and full protective gear. During a fire, irritating and highly toxic gases may be generated by thermal decomposition or combustion. Use water spray to cool containers and knock down fumes.
- Flammable Properties and Hazards:** High temperatures and fire conditions can result in the formation of carbon monoxide and carbon dioxide, hydrogen gas, and oxides of: nitrogen, phosphorus, sodium, molybdenum, Contact of this product with many "active" metals such as aluminum, copper and zinc, can cause formation of flammable hydrogen gas.



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6. ACCIDENTAL RELEASE MEASURES

Protective Precautions, Protective Equipment and Emergency Procedures: Use proper personal protective equipment as indicated in Section 8.

Environmental Precautions: Do not let product enter drains, sewers, watersheds or water systems. Observe all federal, state, and local environmental regulations.

Steps To Be Taken In Case Material Is Released Or Spilled: Spills/Leaks: Isolate hazard area. Keep unnecessary and unprotected personnel from entering. ELIMINATE all ignition sources (no smoking, flares, sparks or flames in immediate area). Provide ventilation. Dike spill, pump to drums, or collect with absorbent material and place in plastic or stainless steel containers.

7. HANDLING AND STORAGE

Precautions To Be Taken in Handling: Use with adequate ventilation. Avoid contact with eyes, skin, and clothing. Avoid breathing spray or mist. Avoid ingestion and inhalation. Wash thoroughly after handling. Remove contaminated clothing and wash before reuse.

Precautions To Be Taken in Storing: Store in a cool, dry, well-ventilated area away from incompatible substances. Store away from sparks, flames. Store away from oxidizers. Store away from acids. Store in a tightly closed container. Keep container closed when not in use. Protect containers against damage. Insure label precautions also apply to any empty containers. Dispose of and/or recondition empty containers in accordance with governmental regulations. Product should be clearly marked for industrial use only.

Other Precautions: Handle in accordance with good industrial hygiene and safety practices. Keep out of reach of children.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

CAS #	Partial Chemical Name	OSHA TWA	ACGIH TWA	Other Limits
1310-58-3	Potassium hydroxide	No data.	CEIL: 2 mg/m ³	No data.
26099-09-2	Polymaleic acid	No data.	No data.	No data.
9003-04-7	Sodium polyacrylate	No data.	No data.	No data.
64665-57-2	Sodium tolytriazole	No data.	No data.	No data.
2809-21-4	1-Hydroxyethylidene-1,1-diphosphonic acid	No data.	No data.	No data.
10102-40-6	Sodium molybdate	No data.	No data.	No data.

Respiratory Equipment (Specify Type): Use a NIOSH/MSHA approved respirator with nuisance dust/mist cartridges.

Eye Protection: Chemical safety goggles.

Protective Gloves: Wear appropriate protective gloves to prevent skin exposure. Neoprene gloves.

Other Protective Clothing: Wear appropriate protective clothing to prevent skin exposure. Neoprene boots. Chemical resistant apron.

Engineering Controls (Ventilation etc.): Use adequate general or local exhaust ventilation to minimize exposure levels. Facilities storing or utilizing this material should be equipped with an eyewash facility and a safety shower.

Work/Hygienic/Maintenance Practices: Handle in accordance with good industrial hygiene and safety practice. Wash hands before breaks and at the end of workday. Wash thoroughly after handling.



9. PHYSICAL AND CHEMICAL PROPERTIES

Physical States:	[] Gas [X] Liquid [] Solid
Appearance and Odor:	Appearance: Clear. Orange to brownish. Liquid. Odor: Low odor.
Melting Point:	NA
Boiling Point:	212 F (100 C)
Decomposition Temperature:	NA
Autoignition Pt:	NA
Flash Pt:	NA Method Used: Not Applicable
Explosive Limits:	LEL: No data. UEL: No data.
Specific Gravity (Water = 1):	NA
Density:	10.05 LB/GA at 25.0 C (77.0 F)
Bulk density:	NA
Vapor Pressure (vs. Air or mm Hg):	NA
Vapor Density (vs. Air = 1):	NA
Evaporation Rate:	NA
Solubility in Water:	Soluble
Saturated Vapor Concentration:	NA
Viscosity:	NA
pH:	11.55 - (1% soln)
Percent Volatile:	NA
VOC / Volume:	NA
Particle Size:	NA
Heat Value:	NA
Corrosion Rate:	NA

10. STABILITY AND REACTIVITY

Reactivity:	Contact of this product with many "active" metals such as aluminum, copper and zinc, can cause formation of flammable hydrogen gas.
Stability:	Unstable [] Stable [X]
Conditions To Avoid - Instability:	High temperatures, Ignition sources, Incompatible materials.
Incompatibility - Materials To Avoid:	Acids, Strong oxidizing agents. Contact of this product with many "active" metals such as aluminum, copper and zinc, can cause formation of flammable hydrogen gas.
Hazardous Decomposition or Byproducts:	High temperatures and fire conditions can result in the formation of carbon monoxide and carbon dioxide, hydrogen gas, and oxides of: nitrogen, phosphorus, sodium, molybdenum.
Possibility of Hazardous Reactions:	Will occur [] Will not occur [X]
Conditions To Avoid - Hazardous Reactions:	No data available.



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11. TOXICOLOGICAL INFORMATION

Toxicological Information: Epidemiology: No information available.
Teratogenicity: No information available.
Reproductive Effects: No information available.
Mutagenicity: No information available.
Neurotoxicity: No information available.

Other Studies: CAS# 10102-40-6:
Acute toxicity, LD50, Intraperitoneal, Rat 520 mg/kg.

Other Studies: CAS# 1310-58-3:
Acute toxicity, LD50, Oral, Rat, 273 mg/kg

Other Studies: CAS# 2809-21-4:
Acute toxicity, LD50, Oral, Mouse, 1800 mg/kg.

Other Studies: CAS# 9003-04-7:
Acute toxicity, LD50, Oral, Rat, > 40 gm/kg.

Irritation or Corrosion: Other Studies: CAS# 1310-58-3:
Standard Draize Test, Skin, Species: Rabbit, 50.0 mg, 24H
Other Studies: CAS# 9003-04-7
Standard Draize Test, Skin, Species: Rabbit, 2.0 mg.

Carcinogenicity: NTP? No IARC Monographs? No OSHA Regulated? No

12. ECOLOGICAL INFORMATION

General Ecological Information: Environmental: No information available.
Physical: No information available.

Other Studies: CAS# 1310-58-3:
LC50, Western Mosquitofish (Gambusia affinis), adult(s), 80000 ug/L, 96H, Mortality

Results of PBT and vPvB assessment: No data available.

Persistence and Degradability: No data available.

Bioaccumulative Potential: No data available.

Mobility in Soil: No data available.

13. DISPOSAL CONSIDERATIONS

Waste Disposal Method: Chemical waste generators must determine whether a discarded chemical is classified as a hazardous waste. US EPA guidelines for the classification determination are listed in 40 CFR Parts 261. Additionally, waste generators must consult state and local hazardous waste regulations to ensure complete and accurate classification. Observe all federal, state, and local environmental regulations.

14. TRANSPORT INFORMATION

LAND TRANSPORT (US DOT):

DOT Proper Shipping Name: Potassium hydroxide, solution.
DOT Hazard Class: 8 CORROSIVE
UN/NA Number: UN1814 **Packing Group:** II



15. REGULATORY INFORMATION

EPA SARA (Superfund Amendments and Reauthorization Act of 1986) Lists

CAS #	Hazardous Components (Chemical Name)	S. 302 (EHS)	S. 304 RQ	S. 313 (TRI)
1310-58-3	Potassium hydroxide	No	Yes 1000 LB	No
26099-09-2	Polymaleic acid	No	No	No
9003-04-7	Sodium polyacrylate	No	No	No
64665-57-2	Sodium tolytriazole	No	No	No
2809-21-4	1-Hydroxyethylidene-1,1-diphosphonic acid	No	No	No
10102-40-6	Sodium molybdate	No	No	No

CAS # Hazardous Components (Chemical Name)

Other US EPA or State Lists

1310-58-3	Potassium hydroxide	TSCA: Yes - Inventory; CA PROP.65: No; CA TAC, Title 8: Title 8
26099-09-2	Polymaleic acid	TSCA: Yes - Inventory; CA PROP.65: No; CA TAC, Title 8: No
9003-04-7	Sodium polyacrylate	TSCA: Yes - Inventory; CA PROP.65: No; CA TAC, Title 8: No
64665-57-2	Sodium tolytriazole	TSCA: Yes - Inventory, 4 Test; CA PROP.65: No; CA TAC, Title 8: No
2809-21-4	1-Hydroxyethylidene-1,1-diphosphonic acid	TSCA: Yes - Inventory; CA PROP.65: No; CA TAC, Title 8: No
10102-40-6	Sodium molybdate	TSCA: Yes - Inventory; CA PROP.65: No; CA TAC, Title 8: Title 8

16. OTHER INFORMATION

Revision Date: 09/05/2015
Preparer Name: Crystal Maira
Additional Information: 09/05/2015 - SDS updated with formulary change.
Company Policy or Disclaimer: Information presented herein is believed to be accurate and reliable to the best of our knowledge. However, we make no warranty or merchantability or any other warranty, express or implied, with respect to such information, and we assume no liability resulting from its use. The information relates only to the specific material designated and may not be valid for such material used in combination with any other material or in any process. Users should make their own investigations to determine the suitability of the information for their particular purposes.

CYCLE PC-560

CORROSION INHIBITOR

Now with PTSA



DANGER

Causes serious eye damage.

Causes severe skin burns and eye damage.

Precautionary Statements: Do not breathe mist/vapors/spray. Wear protective gloves, protective clothing, eye protection, and face protection. Wash hands thoroughly after handling.

Response Phrases:

IF ON SKIN (or hair): Immediately remove all contaminated clothing. Rinse skin with water. Wash contaminated clothing before reuse.

IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Immediately call a POISON CENTER or doctor/physician.

IF SWALLOWED: Rinse mouth. Do NOT induce vomiting.

IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing.

SPECIFIC TREATMENT: See Section 4 of the SDS to reference supplemental first aid instruction if immediate measures are required.

Storage/Disposal: Dispose of contents and containers in accordance with local, regional, national, and international regulations.

Supplemental Information: This product may be harmful if swallowed. At elevated temperatures, this product may react with the reducing sugars in foods and beverages to produce toxic carbon monoxide. When entering a tank, even an empty one, follow all appropriate confined entry procedures (ANSI Z117.1).

KEEP OUT OF REACH OF CHILDREN.

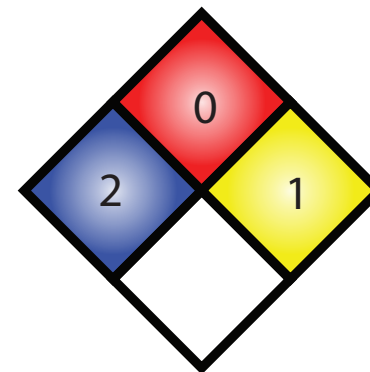


SHEPARD BROS., INC.
503 S. CYPRESS ST.
La Habra, CA 90631 • (562) 697-1366

CONTAINS: POTASSIUM HYDROXIDE, SODIUM POLYACRYLATE, POLYMALEIC ACID, 1-HYDROXYETHYLIDENE-1, 1-DIPHOSPHONIC ACID.

AVOID CONTACT WITH ACTIVE METALS SUCH AS ALUMINUM, COPPER AND ZINC.

Contact your Shepard Bros., Inc. representative for more specific use instructions and recommended dispensing equipment.



Read safety data sheets for more detailed information.

PROPER SHIPPING NAME:

UN1814,
POTASSIUM HYDROXIDE, SOLUTION, 8, PGII

PRODUCT ID:

BATCH NO.:

NET CONTENTS:

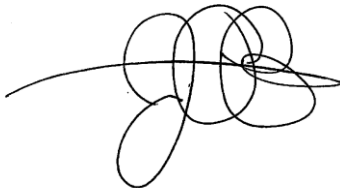
January 1, 2020

Based on current U.S. Food and Drug Administration Guidelines, this Letter of Guarantee certifies that the Shepard Bros., Inc. product, **Cycle PC-560**, is safe and suitable for use as a cooling water treatment in establishments processing food for human or animal consumption.

When used according to the product label directions and in accordance with Good Manufacturing Practice this product will have no deleterious effects on the foods being processed.

This product must be used, handled and stored in a manner that will not adulterate food products. This product must always be used according to applicable label directions.

Sincerely,



Jose Arias
Director of Compliance & Regulatory Affairs
Shepard Bros., Inc.