

SAFETY DATA SHEET

1. PRODUCT AND COMPANY IDENTIFICATION

Product Code: 251116
Product Name: Chemstream FA-282HP
Category: Corrosion Inhibitor for High Pressure Steam Generators and Boilers
Company Name: Chemstream, Inc.
166 Commerce Drive
Stoystown, PA 15563
Emergency Contact: CHEMTREC (800)424-9300
Information: EPA #: 92757

2. HAZARDS IDENTIFICATION

Skin Corrosion/Irritation, Category 1B
Serious Eye Damage/Eye Irritation, Category 1
Toxic To Reproduction, Category 2
Specific Target Organ Toxicity (single exposure), Category 3
Specific Target Organ Toxicity (repeated exposure), Category 2
Aquatic Toxicity (Acute), Category 2
Aquatic Toxicity (Chronic), Category 3



GHS Signal Word: **Danger**

GHS Hazard Phrases: H314 - Causes severe skin burns and eye damage.
H318 - Causes serious eye damage.
H335 - May cause respiratory irritation.
H361 - Suspected of damaging fertility or the unborn child .
H373 - May cause damage to through prolonged or repeated exposure.
H401 - Toxic to aquatic life.
H412 - Harmful to aquatic life with long lasting effects.

GHS Precautionary Phrases: P201 - Obtain special instructions before use.
P202 - Do not handle until all safety precautions have been read and understood.
P260 - Do not breathe dust/fume/gas/mist/vapors/spray.
P264 - Wash hands thoroughly after handling.
P271 - Use only outdoors or in a well-ventilated area.
P273 - Avoid release to the environment.
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.
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.
P308+313 - IF exposed or concerned: Get medical attention/advice.
P363 - Wash contaminated clothing before reuse.

GHS Storage and Disposal Phrases: P403+233 - Store container tightly closed in well-ventilated place.
P405 - Store locked up.



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P501 - Dispose of contents/container to an approved waste disposal site.

Hazard Rating System:

HEALTH	2
FLAMMABILITY	1
PHYSICAL	0
PPE	D

HMIS:

Potential Health Effects (Acute and Chronic):

Inhalation: May cause respiratory irritation.
Skin Contact: Causes skin burns.
Eye Contact: Causes serious eye damage.
Ingestion: May cause gastrointestinal irritation with nausea, vomiting and diarrhea.

3. COMPOSITION/INFORMATION ON INGREDIENTS

CAS #	Ingredient(s)	Concentration
141-43-5	Ethanol, 2-Amino-	10.0 -25.0 %
108-91-8	Cyclohexylamine	2.5 -10.0 %
7173-62-8	1,3-Propanediamine, N-9-octadecenyl-, (Z)-	< 2.5 %
61791-26-2	Ethoxylated tallow amine	< 1.0 %

4. FIRST AID MEASURES

Emergency and First Aid Procedures:

In Case of Inhalation: Remove to fresh air and keep at rest in a position comfortable for breathing. If breathing is difficult, give oxygen. Seek medical advice/attention if you feel unwell.

In Case of Skin Contact: Wash exposed area with soap and water thoroughly. Remove contaminated clothing and wash before reuse. Seek medical advice/attention if irritation develops or persists.

In Case of Eye Contact: Immediately flush eyes with running water for at least 15 minutes. Remove contact lenses if present after the first 5 minutes. Seek medical advice/attention immediately.

In Case of Ingestion: Rinse mouth with water. Do NOT induce vomiting. Give plenty of water. Never give anything to an unconscious person. Seek medical advice/attention immediately.

Note to Physician: Based on the individual reactions of the patient, the physician's judgment should be used to treat symptomatically and supportively.

5. FIRE FIGHTING MEASURES

Flash Pt: > 93.3 C (> 200.00 F) Method Used: ASTM D Closed Cup

Explosive Limits: LEL: No data. UEL: No data.

Autoignition Pt: No data.

Suitable Extinguishing Media: Use water spray, dry chemical, carbon dioxide, or alcohol-resistant foam. Use very large quantities (flooding) of water applied as a mist or spray; solid streams of water may be ineffective.

Fire Fighting Instructions: Protective Equipment: Wear self-contained breathing apparatus and protective clothing to prevent contact with skin and eyes.

Flammable Properties and Hazards: No data available.

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6. ACCIDENTAL RELEASE MEASURES

Protective Precautions, Protective Equipment and Emergency Procedures:	Avoid contact with spilled material. Avoid breathing vapors, mist, or gas. Ventilate area of leak or spill. Wear appropriate personal protection equipment.
Environmental Precautions:	Prevent further leakage or spillage if safe to do so. Do not let product enter drains. Discharge into the environment must be avoided.
Steps To Be Taken In Case Material Is Released Or Spilled:	Collect liquid by absorbing with an inert material (e.g. vermiculite, dry sand, earth), clean contaminated surface thoroughly, and place in a container for disposal according to local regulations.

7. HANDLING AND STORAGE

Precautions To Be Taken in Handling:	Avoid prolonged or repeated contact with eyes, skin, or clothing. Wash thoroughly after handling. Avoid breathing product vapors or mists. Use with adequate ventilation. Keep containers closed when not in use.
Precautions To Be Taken in Storing:	Store in a dry, cool, and well ventilated area away from heat sources and incompatible materials. Keep containers securely sealed. Protect containers from physical damage and check regularly for leaks.

Product should be stored at temperatures above 40°F (5°C). At temperatures below 40°F (5°C), surfactant stratification is possible, giving the appearance of product separation. The product should then be slowly heated to above 40°F (5°C) and then gently agitated to return to original homogeneous state.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

CAS #	Components (Chemical Name)	OSHA TWA	ACGIH TWA	Other Limits
141-43-5	Ethanol, 2-Amino-	PEL: 3 ppm	TLV: 3 ppm STEL: 6 ppm	No data.
108-91-8	Cyclohexylamine	No data.	TLV: 10 ppm	No data.
7173-62-8	1,3-Propanediamine, N-9-octadecenyl-, (Z)-	No data.	No data.	No data.
61791-26-2	Ethoxylated tallow amine	No data.	No data.	No data.

Respiratory Equipment (Specify Type):	Use a NIOSH/MSHA or European Standard EN 149 approved respirator if exposure limits are exceeded or if irritation or other symptoms are experienced.
Eye Protection:	Splash goggles and/or face shield.
Protective Gloves:	Wear appropriate gloves to prevent skin exposure.
Other Protective Clothing:	Wear appropriate protective clothing to prevent skin exposure.
Engineering Controls (Ventilation etc.):	Use local and/or general exhaust ventilation to maintain airborne concentrations below irritating levels or airborne exposure limits, whichever is lower. Local exhaust is generally preferred because it can control the emission of the contaminant at its source, preventing dispersion of it into the general work area.
Work/Hygienic/Maintenance Practices:	An eye wash station should be accessible in the immediate area of use. Always observe good personal hygiene measures, such as washing after handling the material and before eating, drinking, and/or smoking. Routinely wash work clothing and protective equipment to remove contaminants. Discard contaminated clothing and footwear that cannot be cleaned. Practice good housekeeping.

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Environmental Exposure Controls: Prevent further leakage or spillage if safe to do so. Do not let product enter drains. Discharge into the environment must be avoided.

9. PHYSICAL AND CHEMICAL PROPERTIES

Physical States: [] Gas [X] Liquid [] Solid
Appearance and Odor: Colorless to pale yellow.
amine-like.
Freeze Point/Pour Point: -6.7 C (20.00 F) - 0.0 C (32.00 F)
Boiling Point: > 93.3 C (> 200.00 F)
Autoignition Pt: No data.
Flash Pt: > 93.3 C (> 200.00 F) Method Used: ASTM D Closed Cup
Explosive Limits: LEL: No data. UEL: No data.
Specific Gravity (Water = 1): 1.00+/-0.05
Vapor Pressure (vs. Air or mm Hg): No data.
Vapor Density (vs. Air = 1): No data.
Evaporation Rate: No data.
Solubility in Water: completely miscible
pH: 11.0 - 12.0 - (1%)
Percent Volatile: No data.

10. STABILITY AND REACTIVITY

Reactivity: No data available.
Stability: Unstable [] Stable [X]
Conditions To Avoid - Instability: Extremes of temperature and direct sunlight. flames and sparks.
Incompatibility - Materials To Avoid: Strong acids, Strong oxidizing agents, Mineral acids.
Hazardous Decomposition or Byproducts: Carbon monoxide, Carbon dioxide, Nitrogen oxides, Ammonia.
Will occur [] Will not occur [X]
Possibility of Hazardous Reactions: No data available.
Conditions To Avoid - Hazardous Reactions:

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11. TOXICOLOGICAL INFORMATION

Toxicological Information:	The product has not been tested. Any statements on toxicology have been derived from products of a similar structure and composition.
Carcinogenicity:	CAS# 141-43-5: Acute toxicity, LD50, Oral, Rat, 1720. MG/KG. Result: Behavioral: Coma. Lungs, Thorax, or Respiration: Cyanosis. Gastrointestinal: Nausea or vomiting. - Toxicology and Applied Pharmacology, Academic Press, Inc., 1 E. First St., Duluth, MN 55802, Vol/p/yr: 42,417, 1977 Acute toxicity, LD50, Skin, Species: Rabbit, 1.000 ML/KG. Result: Sense Organs and Special Senses (Nose, Eye, Ear, and Taste): Olfaction: Other changes. - Union Carbide Data Sheet, Union Carbide Corp., 39 Old Ridgebury Rd., Danbury, CT 06817, Vol/p/yr: 1/13, 1972 CAS# 108-91-8: Acute toxicity, LD50, Oral, Rat, 11.00 MG/KG. Result: Behavioral: Food intake (animal). Lungs, Thorax, or Respiration: Pulmonary emboli. Gastrointestinal: Other changes. - National Technical Information Service, Vol/p/yr: OTS05, 4836 Acute toxicity, LC50, Inhalation, Rat, 7500. MG/M3. Result: Behavioral: Excitement. Behavioral: Muscle contraction or spasticity. - Gigiena Truda i Professional'nye Zabolevaniya. (Labor Hygiene and Occupational Disease), V/O Mezhdunarodnaya Kniga, Moscow 113095 Russia, Vol/p/yr: 7(11), 51, 1963 Acute toxicity, LD50, Skin, Species: Rabbit, 320.0 UL/KG. Result: Kidney, Ureter, Bladder: Changes in liver weight. Kidney, Ureter, Bladder: Hematuria. Blood: Other changes. - American Industrial Hygiene Association Journal., AIHA, 475 Wolf Ledges Pkwy., Akron, OH 44311, Vol/p/yr: 30,470, 1969 NTP? No IARC Monographs? No OSHA Regulated? No

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12. ECOLOGICAL INFORMATION

General Ecological Information:

The product has not been tested. Any statements on eco-toxicology have been derived from products of a similar structure and composition.

Results of PBT and vPvB assessment:

CAS# 141-43-5:
 LC50, Bluegill (*Lepomis macrochirus*), 345900. UG/L, 72 H, Mortality, Water temperature: 22.00 C (71.6 F) C.
 Result:
 Age Effects.
 - Toxicity of CS-2 Decontamination Products, Wolverton, B.C., D.D. Harrison, and R.C. Voight, 1970

CAS# 108-91-8:
 LC50, Rainbow Trout (*Oncorhynchus mykiss*), 44000. UG/L, 96 H, Mortality, Water temperature: 15.00 C (59.0 F) C, pH: 7.40, Hardness: 20.00 MG/L.
 Result:
 No loss of equilibrium observed.
 - Biodegradation and Toxicity of Selected Amines on Aquatic Organisms, Calamari, D., R.D. Gasso, S. Galassi, A. Provini, and M. Vighi, 1980

LC50, Water Flea (*Daphnia magna*), 80.00 MG/L, 24 H, Intoxication,, Water temperature: 20.00 C (68.0 F) - 22.00 C (71.6 F) C, pH: 7.70, Hardness: 16.00 dH.
 Result:
 Abnormal development.
 - Results of the Damaging Effect of Water Pollutants on *Daphnia magna* (Befunde der Schadwirkung Wassergefahrdender Stoffe Gegen *Daphnia magna*), Bringmann, G., and R. Kuhn, 1977

13. DISPOSAL CONSIDERATIONS

Waste Disposal Method:

RCRA: It is the responsibility of the product user to determine at the time of disposal whether a material containing the product or derived from the product should be classified as a hazardous waste (40 CFR 261.20-24).

Disposal: Whatever cannot be saved for recovery or recycling should be disposed of in accordance with local, state, and federal regulations. Consult state or local regulation for any additional handling, treatment, or disposal requirements. For disposal, contact a properly licensed waste treatment, storage, disposal, or recycling facility.

14. TRANSPORT INFORMATION

LAND TRANSPORT (US DOT):

DOT Proper Shipping Name: Amines, liquid, corrosive, n.o.s., Ethanolamine, Cyclohexylamine
DOT Hazard Class: 8 CORROSIVE
UN/NA Number: UN2735 **Packing Group:** III





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LAND TRANSPORT (Canadian TDG):

TDG Shipping Name: Amines, liquid, corrosive, n.o.s., (Ethanolamine, Cyclohexylamine)
UN Number: 2735 **Packing Group:** III
Hazard Class: 8 - CORROSIVE **TDG Classification:**

MARINE TRANSPORT (IMDG/IMO):

IMDG/IMO Shipping Name: Amines, liquid, corrosive, n.o.s., (Ethanolamine, Cyclohexylamine)
UN Number: 2735 **Packing Group:** III
Hazard Class: 8 - CORROSIVE **IMDG MFAG Number:**

IMDG EMS Page:

AIR TRANSPORT (ICAO/IATA):

ICAO/IATA Shipping Name: Amines, liquid, corrosive, n.o.s., (Ethanolamine, Cyclohexylamine)
UN Number: 2735 **Packing Group:** III
Hazard Class: 8 - CORROSIVE

15. REGULATORY INFORMATION

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

CAS #	Ingredient(s)	S. 302 (EHS)	S. 304 RQ	S. 313 (TRI)
141-43-5	Ethanol, 2-Amino-	No	No	No
108-91-8	Cyclohexylamine	Yes 10000 LB	No	No
7173-62-8	1,3-Propanediamine, N-9-octadecenyl-, (Z)-	No	No	No
61791-26-2	Ethoxylated tallow amine	No	No	No

This material meets the EPA [] Yes [X] No Explosive
'Hazard Categories' defined [] Yes [X] No Flammable (gases, aerosols, liquid, or solid)
for SARA Title III Sections [] Yes [X] No Oxidizer (liquid, solid or gas)
311/312 as indicated: [] Yes [X] No Self-reactive
 [] Yes [X] No Pyrophoric (liquid or solid)
 [] Yes [X] No Pyrophoric gas
 [] Yes [X] No Self-heating
 [] Yes [X] No Organic peroxide
 [] Yes [X] No Corrosive to metal
 [] Yes [X] No Gas under pressure (compressed gas)
 [] Yes [X] No In contact with water emits flammable gas
 [] Yes [X] No Combustible Dust
 [] Yes [X] No (Physical) Hazard Not Otherwise Classified (HNOC)
 [] Yes [X] No Acute toxicity (any route of exposure)
 [X] Yes [] No Skin Corrosion or Irritation
 [X] Yes [] No Serious eye damage or eye irritation
 [] Yes [X] No Respiratory or Skin Sensitization
 [] Yes [X] No Germ cell mutagenicity
 [] Yes [X] No Carcinogenicity
 [X] Yes [] No Reproductive toxicity
 [X] Yes [] No Specific target organ toxicity (single or repeated exposure)
 [] Yes [X] No Aspiration Hazard
 [] Yes [X] No Simple Asphyxiant
 [X] Yes [] No (Health) Hazard Not Otherwise Classified (HNOC)

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CAS #	Ingredient(s)	Canadian NPRI	Canadian IDL	Canadian DSL
141-43-5	Ethanol, 2-Amino-	No	Yes	Yes
108-91-8	Cyclohexylamine	No	Yes	Yes
7173-62-8	1,3-Propanediamine, N-9-octadecenyl-, (Z)-	No	No	Yes
61791-26-2	Ethoxylated tallow amine	No	No	Yes

Canadian WHMIS Classification:



CLASS D, DIVISION 2: Materials Causing Other Toxic Effects

CLASS E: Corrosive Materials

Regulatory Information: Canadian regulations: This product has been classified in accordance with the hazard criteria of the Canadian Controlled Products Regulations (CPR) and the SDS contains all the information required by the CPR.

16. OTHER INFORMATION

Revision Date: 03/26/2019

Additional Information About No data available.

This Product:

Company Policy or

Disclaimer:

The information accumulated herein is believed to be accurate based on the information provided, although no guarantee or warranty, either expressed or implied is made as to the accuracy or completeness of this information, whether originating with this company or not. Recipients are advised to confirm in advance of need that the information is correct, applicable and suitable to their circumstances. The conditions or methods of handling, storage, use and disposal of the product and container are beyond our control and may be beyond our knowledge. For this and other reasons, we do not assume responsibility and expressly disclaim liability for loss, damage or expense arising out of or in any way connected with the handling, storage or use of this information or product. If the product is used as a component in another product, this information may not be applicable.