

**ForSField™ G-75H hardener**

Version 1.3

Revision Date 2016-07-20

SECTION 1: Identification of the substance/mixture and of the company/undertaking**Product information**

Product Name : ForSField™ G-75H hardener
Material : 1112357, 1112356

Company : Chevron Phillips Chemical Company LP
10001 Six Pines Drive
The Woodlands, TX 77380

Emergency telephone:**Health:**

866.442.9628 (North America)
1.832.813.4984 (International)

Transport:

CHEMTREC 800.424.9300 or 703.527.3887(int'l)
Asia: +800 CHEMCALL (+800 2436 2255) China:+86-21-22157316
EUROPE: BIG +32.14.584545 (phone) or +32.14583516 (telefax)
South America SOS-Cotec Inside Brazil: 0800.111.767 Outside Brazil: +55.19.3467.1600

Responsible Department : Product Safety and Toxicology Group
E-mail address : SDS@CPChem.com
Website : www.CPChem.com

SECTION 2: Hazards identification**Classification of the substance or mixture**

This product has been classified in accordance with the hazard communication standard 29 CFR 1910.1200; the SDS and labels contain all the information as required by the standard.

Emergency Overview**Danger**

Form: Liquid **Physical state:** Liquid **Color:** Amber, Dark Brown **Odor:** Mild

OSHA Hazards : Corrosive, Harmful by ingestion., Toxic by inhalation., Toxic by skin absorption, Respiratory sensitizer, Skin sensitizer

Classification

: Acute toxicity, Category 4, Oral
Acute toxicity, Category 4, Inhalation
Acute toxicity, Category 3, Dermal

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Skin corrosion, Category 1A
 Serious eye damage, Category 1
 Skin sensitization, Category 1

Labeling

Symbol(s)

:



Signal Word

:

Danger

Hazard Statements

: H302 + H332: Harmful if swallowed or if inhaled.
 H311: Toxic in contact with skin.
 H314: Causes severe skin burns and eye damage.
 H317: May cause an allergic skin reaction.

Precautionary Statements

:

Prevention:

P261 Avoid breathing dust/fume/gas/mist/vapors/spray.
 P264 Wash skin thoroughly after handling.
 P270 Do not eat, drink or smoke when using this product.
 P271 Use only outdoors or in a well-ventilated area.
 P272 Contaminated work clothing must not be allowed out of the workplace.
 P280 Wear protective gloves/ protective clothing/ eye protection/ face protection.

Response:

P301 + P312 + P330 IF SWALLOWED: Call a POISON CENTER/doctor if you feel unwell. Rinse mouth.
 P301 + P330 + P331 IF SWALLOWED: Rinse mouth. Do NOT induce vomiting.
 P303 + P361 + P353 IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower.
 P304 + P340 + P310 IF INHALED: Remove person to fresh air and keep comfortable for breathing. Immediately call a POISON CENTER/doctor.
 P305 + P351 + P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
 P305 + P351 + P338 + P310 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/doctor.
 P333 + P313 If skin irritation or rash occurs: Get medical advice/ attention.
 P362 Take off contaminated clothing and wash before reuse.

Storage:

P405 Store locked up.

Disposal:

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

Carcinogenicity:**IARC**

No ingredient of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed

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NTP

human carcinogen by IARC.

No ingredient of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP.

ACGIH

No ingredient of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by ACGIH.

SECTION 3: Composition/information on ingredients

Molecular formula : Mixture

Component	CAS-No.	Weight %
Cyclohexanamine, 4,4'-methylenebis[2-methyl-	6864-37-5	30 - 60
Amine-Terminated Poly(Acrylonitrile-Butadiene)	68683-29-4	10 - 30
Dipropylene glycol dibenzoate	27138-31-4	5 - 10
1-Piperazineethanamine	140-31-8	1 - 3

SECTION 4: First aid measures

- General advice : Move out of dangerous area. Consult a physician. Show this material safety data sheet to the doctor in attendance.
- If inhaled : Call a physician or poison control center immediately. If unconscious place in recovery position and seek medical advice.
- In case of skin contact : Immediate medical treatment is necessary as untreated wounds from corrosion of the skin heal slowly and with difficulty. If on skin, rinse well with water. If on clothes, remove clothes.
- In case of eye contact : Small amounts splashed into eyes can cause irreversible tissue damage and blindness. In the case of contact with eyes, rinse immediately with plenty of water and seek medical advice. Continue rinsing eyes during transport to hospital. Remove contact lenses. Protect unharmed eye. Keep eye wide open while rinsing. If eye irritation persists, consult a specialist.
- If swallowed : Keep respiratory tract clear. Never give anything by mouth to an unconscious person. If symptoms persist, call a physician.

SECTION 5: Firefighting measures

- Flash point : 140 °C (284 °F)
Method: closed cup
- Unsuitable extinguishing media : High volume water jet.

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| Specific hazards during fire fighting | : | Do not allow run-off from fire fighting to enter drains or water courses. |
| Special protective equipment for fire-fighters | : | Wear self-contained breathing apparatus for firefighting if necessary. |
| Further information | : | Collect contaminated fire extinguishing water separately. This must not be discharged into drains. Fire residues and contaminated fire extinguishing water must be disposed of in accordance with local regulations. |
| Fire and explosion protection | : | Normal measures for preventive fire protection. |

SECTION 6: Accidental release measures

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|---------------------------|---|---|
| Personal precautions | : | Use personal protective equipment. Ensure adequate ventilation. |
| Environmental precautions | : | Prevent product from entering drains. Prevent further leakage or spillage if safe to do so. If the product contaminates rivers and lakes or drains inform respective authorities. |
| Methods for cleaning up | : | Soak up with inert absorbent material (e.g. sand, silica gel, acid binder, universal binder, sawdust). Keep in suitable, closed containers for disposal. |

SECTION 7: Handling and storage**Handling**

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|---|---|--|
| Advice on safe handling | : | Avoid formation of aerosol. Do not breathe vapors/dust. Avoid exposure - obtain special instructions before use. Avoid contact with skin and eyes. For personal protection see section 8. Smoking, eating and drinking should be prohibited in the application area. Provide sufficient air exchange and/or exhaust in work rooms. To avoid spills during handling keep bottle on a metal tray. Dispose of rinse water in accordance with local and national regulations. Persons susceptible to skin sensitization problems or asthma, allergies, chronic or recurrent respiratory disease should not be employed in any process in which this mixture is being used. |
| Advice on protection against fire and explosion | : | Normal measures for preventive fire protection. |

Storage

- | | | |
|---|---|--|
| Requirements for storage areas and containers | : | Keep container tightly closed in a dry and well-ventilated place. Containers which are opened must be carefully resealed and kept upright to prevent leakage. Observe label precautions. Electrical installations / working materials must comply with the technological safety standards. |
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SECTION 8: Exposure controls/personal protection**Engineering measures**

Consider the potential hazards of this material (see Section 2), applicable exposure limits, job activities, and other substances in the work place when designing engineering controls and selecting personal protective equipment. If engineering controls or work practices are not adequate to prevent exposure to harmful levels of this material, the personal protective equipment listed below is recommended. The user should read and understand all instructions and limitations supplied with the equipment since protection is usually provided for a limited time or under certain circumstances.

Personal protective equipment

- | | | |
|--------------------------|---|--|
| Respiratory protection | : | Wear a supplied-air NIOSH approved respirator unless ventilation or other engineering controls are adequate to maintain minimal oxygen content of 19.5% by volume under normal atmospheric pressure. Wear a NIOSH approved respirator that provides protection when working with this material if exposure to harmful levels of airborne material may occur, such as:. Full-Face Supplied-Air Respirator. Use a positive pressure, air-supplying respirator if there is potential for uncontrolled release, exposure levels are not known, or other circumstances where air-purifying respirators may not provide adequate protection. |
| Hand protection | : | The suitability for a specific workplace should be discussed with the producers of the protective gloves. Please observe the instructions regarding permeability and breakthrough time which are provided by the supplier of the gloves. Also take into consideration the specific local conditions under which the product is used, such as the danger of cuts, abrasion, and the contact time. Gloves should be discarded and replaced if there is any indication of degradation or chemical breakthrough. |
| Eye protection | : | Eye wash bottle with pure water. Wear face-shield and protective suit for abnormal processing problems. |
| Skin and body protection | : | Choose body protection according to the amount and concentration of the dangerous substance at the work place. Wear as appropriate:. Protective suit. Safety shoes. |
| Hygiene measures | : | Avoid contact with skin, eyes and clothing. When using do not eat or drink. When using do not smoke. Wash hands before breaks and immediately after handling the product. |

SECTION 9: Physical and chemical properties**Information on basic physical and chemical properties****Appearance**

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|----------------|---|-------------------|
| Form | : | Liquid |
| Physical state | : | Liquid |
| Color | : | Amber, Dark Brown |
| Odor | : | Mild |

Safety data

- | | | |
|-------------|---|--------------------|
| Flash point | : | 140 °C (284 °F) |
| | | Method: closed cup |

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Lower explosion limit	: No data available
Upper explosion limit	: No data available
Molecular formula	: Mixture
Molecular weight	: Not applicable
pH	: No data available
Pour point	: -7 °C (19 °F)
Boiling point/boiling range	: > 100 °C (> 212 °F)
Vapor pressure	: < 1.00 MMHG
Density	: 8.176 L/G
Water solubility	: Negligible

SECTION 10: Stability and reactivity

Chemical stability	: This material is considered stable under normal ambient and anticipated storage and handling conditions of temperature and pressure.
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Possibility of hazardous reactions

Conditions to avoid	: No data available.
Other data	: No decomposition if stored and applied as directed.

SECTION 11: Toxicological information**ForSField™ G-75H hardener**

Acute oral toxicity	: Acute toxicity estimate: 1,350 mg/kg Method: Calculation method
	Acute toxicity estimate: 1,350 mg/kg Method: Calculation method

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Acute inhalation toxicity	: Acute toxicity estimate: 8.33 mg/l Test atmosphere: vapor Method: Calculation method
	Acute toxicity estimate: 1.17 mg/l Exposure time: 4 h Test atmosphere: dust/mist Method: Calculation method

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ForSField™ G-75H hardener**Acute dermal toxicity**: Acute toxicity estimate: 825 mg/kg
Method: Calculation methodAcute toxicity estimate: 826.76 mg/kg
Method: Calculation method**ForSField™ G-75H hardener****Skin irritation**

: Extremely corrosive and destructive to tissue.

ForSField™ G-75H hardener**Eye irritation**

: May cause irreversible eye damage.

ForSField™ G-75H hardener**Sensitization**

: Causes sensitization.

ForSField™ G-75H hardener**Further information**

: No data available.

SECTION 12: Ecological information**Toxicity to fish**Cyclohexanamine, 4,4'-
methylenebis[2-methyl-: LC50: > 21.5 - < 46.4 mg/l
Exposure time: 96 h
Species: Leuciscus idus (Golden orfe)
static test**Toxicity to daphnia and other aquatic invertebrates**Cyclohexanamine, 4,4'-
methylenebis[2-methyl-: EC50: 4.6 mg/l
Exposure time: 48 h
Species: Daphnia magna (Water flea)
Method: OECD Test Guideline 202

1-Piperazineethanamine

EC50: 58 mg/l
Exposure time: 48 h
Species: Daphnia magna (Water flea)
static test Method: OECD Test Guideline 202**Toxicity to algae**Cyclohexanamine, 4,4'-
methylenebis[2-methyl-: EC50: > 5.0 mg/l
Exposure time: 72 h
Species: Desmodesmus subspicatus (green algae)
static test Method: OECD Test Guideline 201

1-Piperazineethanamine

EC50: > 1,000 mg/l
Exposure time: 72 h
Species: Selenastrum capricornutum (algae)
Growth inhibition Method: OECD Test Guideline 201

Biodegradability

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Cyclohexanamine, 4,4'-methylenebis[2-methyl-1-piperazineethanamine] : Result: Not readily biodegradable.
0 %
Testing period: 28 d
Method: OECD Test Guideline 301

Ecotoxicology Assessment

Acute aquatic toxicity
1-Piperazineethanamine : Harmful to aquatic life.

Chronic aquatic toxicity
Cyclohexanamine, 4,4'-methylenebis[2-methyl-1-piperazineethanamine] : Toxic to aquatic life with long lasting effects.
: Harmful to aquatic life with long lasting effects.

Additional ecological information : Toxic to aquatic life with long lasting effects.

SECTION 13: Disposal considerations

The information in this SDS pertains only to the product as shipped.

Use material for its intended purpose or recycle if possible. This material, if it must be discarded, may meet the criteria of a hazardous waste as defined by US EPA under RCRA (40 CFR 261) or other State and local regulations. Measurement of certain physical properties and analysis for regulated components may be necessary to make a correct determination. If this material is classified as a hazardous waste, federal law requires disposal at a licensed hazardous waste disposal facility.

Product : The product should not be allowed to enter drains, water courses or the soil. Do not contaminate ponds, waterways or ditches with chemical or used container. Send to a licensed waste management company.

Contaminated packaging : Empty remaining contents. Dispose of as unused product. Do not re-use empty containers.

SECTION 14: Transport information

The shipping descriptions shown here are for bulk shipments only, and may not apply to shipments in non-bulk packages (see regulatory definition).

Consult the appropriate domestic or international mode-specific and quantity-specific Dangerous Goods Regulations for additional shipping description requirements (e.g., technical name or names, etc.) Therefore, the information shown here, may not always agree with the bill of lading shipping description for the material. Flashpoints for the material may vary slightly between the SDS and the bill of lading.

US DOT (UNITED STATES DEPARTMENT OF TRANSPORTATION)

UN2922, CORROSIVE LIQUIDS, TOXIC, N.O.S., (CYCLOALIPHATIC DIAMINE), 8 (6.1), II

IMO / IMDG (INTERNATIONAL MARITIME DANGEROUS GOODS)

UN2922, CORROSIVE LIQUID, TOXIC, N.O.S., (CYCLOALIPHATIC DIAMINE), 8 (6.1), II, (140 °C), MARINE POLLUTANT, (CYCLOALIPHATIC DIAMINE)

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IATA (INTERNATIONAL AIR TRANSPORT ASSOCIATION)

UN2922, CORROSIVE LIQUID, TOXIC, N.O.S., (CYCLOALIPHATIC DIAMINE), 8 (6.1), II

ADR (AGREEMENT ON DANGEROUS GOODS BY ROAD (EUROPE))

UN2922, CORROSIVE LIQUID, TOXIC, N.O.S., (CYCLOALIPHATIC DIAMINE), 8 (6.1), II, (E), ENVIRONMENTALLY HAZARDOUS, (CYCLOALIPHATIC DIAMINE)

RID (REGULATIONS CONCERNING THE INTERNATIONAL TRANSPORT OF DANGEROUS GOODS (EUROPE))

UN2922, CORROSIVE LIQUID, TOXIC, N.O.S., (CYCLOALIPHATIC DIAMINE), 8 (6.1), II, ENVIRONMENTALLY HAZARDOUS, (CYCLOALIPHATIC DIAMINE)

ADN (EUROPEAN AGREEMENT CONCERNING THE INTERNATIONAL CARRIAGE OF DANGEROUS GOODS BY INLAND WATERWAYS)

UN2922, CORROSIVE LIQUID, TOXIC, N.O.S., (CYCLOALIPHATIC DIAMINE), 8 (6.1), II, ENVIRONMENTALLY HAZARDOUS, (CYCLOALIPHATIC DIAMINE)

Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code

SECTION 15: Regulatory information**National legislation****SARA 311/312 Hazards** : Acute Health Hazard**EPCRA - EMERGENCY PLANNING COMMUNITY RIGHT - TO – KNOW**

CERCLA Reportable Quantity : This material does not contain any components with a CERCLA RQ.

SARA 302 Reportable Quantity : This material does not contain any components with a SARA 302 RQ.

SARA 302 Threshold Planning Quantity : No chemicals in this material are subject to the reporting requirements of SARA Title III, Section 302.

SARA 304 Reportable Quantity : This material does not contain any components with a section 304 EHS RQ.

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SARA 313 Ingredients : This material does not contain any chemical components with known CAS numbers that exceed the threshold (De Minimis) reporting levels established by SARA Title III, Section 313.

Clean Air Act

Ozone-Depletion Potential : This product neither contains, nor was manufactured with a Class I or Class II ODS as defined by the U.S. Clean Air Act Section 602 (40 CFR 82, Subpt. A, App.A + B).

This product does not contain any hazardous air pollutants (HAP), as defined by the U.S. Clean Air Act Section 112 (40 CFR 61).

This product does not contain any chemicals listed under the U.S. Clean Air Act Section 112(r) for Accidental Release Prevention (40 CFR 68.130, Subpart F).

This product does not contain any chemicals listed under the U.S. Clean Air Act Section 111 SOCMII Intermediate or Final VOC's (40 CFR 60.489).

US State Regulations

Pennsylvania Right To Know : 1-Piperazineethanamine - 140-31-8

New Jersey Right To Know : 1-Piperazineethanamine - 140-31-8

California Prop. 65 Ingredients : This product does not contain any chemicals known to the State of California to cause cancer, birth, or any other reproductive defects.

Notification status

Europe REACH	: Not in compliance with the inventory
United States of America TSCA	: On TSCA Inventory
Canada DSL	: This product contains one or several components that are not on the Canadian DSL nor NDSL.
Australia AICS	: Not in compliance with the inventory
New Zealand NZIoC	: Not in compliance with the inventory
Japan ENCS	: Not in compliance with the inventory
Korea KECI	: Not in compliance with the inventory
Philippines PICCS	: Not in compliance with the inventory
China IECSC	: Not in compliance with the inventory

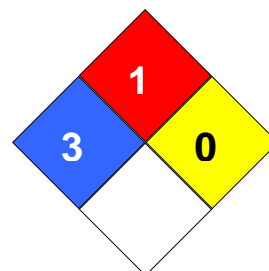
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SECTION 16: Other information

NFPA Classification : Health Hazard: 3
Fire Hazard: 1
Reactivity Hazard: 0

**Further information**

Significant changes since the last version are highlighted in the margin. This version replaces all previous versions.

The information in this SDS pertains only to the product as shipped.

The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text.

Key or legend to abbreviations and acronyms used in the safety data sheet

ACGIH	American Conference of Government Industrial Hygienists	LD50	Lethal Dose 50%
AICS	Australia, Inventory of Chemical Substances	LOAEL	Lowest Observed Adverse Effect Level
DSL	Canada, Domestic Substances List	NFPA	National Fire Protection Agency
NDSL	Canada, Non-Domestic Substances List	NIOSH	National Institute for Occupational Safety & Health
CNS	Central Nervous System	NTP	National Toxicology Program
CAS	Chemical Abstract Service	NZIoC	New Zealand Inventory of Chemicals
EC50	Effective Concentration	NOAEL	No Observable Adverse Effect Level
EC50	Effective Concentration 50%	NOEC	No Observed Effect Concentration
EGEST	EOSCA Generic Exposure Scenario Tool	OSHA	Occupational Safety & Health Administration
EOSCA	European Oilfield Specialty Chemicals Association	PEL	Permissible Exposure Limit
EINECS	European Inventory of Existing Chemical Substances	PICCS	Philippines Inventory of Commercial Chemical Substances
MAK	Germany Maximum Concentration Values	PRNT	Presumed Not Toxic
GHS	Globally Harmonized System	RCRA	Resource Conservation Recovery Act
>=	Greater Than or Equal To	STEL	Short-term Exposure Limit
IC50	Inhibition Concentration 50%	SARA	Superfund Amendments and Reauthorization Act.
IARC	International Agency for Research on Cancer	TLV	Threshold Limit Value
IECSC	Inventory of Existing Chemical Substances in China	TWA	Time Weighted Average
ENCS	Japan, Inventory of Existing and New Chemical Substances	TSCA	Toxic Substance Control Act

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KECI	Korea, Existing Chemical Inventory	UVCB	Unknown or Variable Composition, Complex Reaction Products, and Biological Materials
<=	Less Than or Equal To	WHMIS	Workplace Hazardous Materials Information System
LC50	Lethal Concentration 50%		