

**ForSField™ SG-11R epoxy resin**

Version 1.1

Revision Date 2020-11-19

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

Product Name : ForSField™ SG-11R epoxy resin
Material : 1122878, 1117080, 1116119, 1116118

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

Local : CHEVRON PHILLIPS CHEMICALS ASIA PTE. LTD.
C/O DONG WOO CORPORATION
#B-2601,JEONGJAIL-RO,
BUNDANG-GU,SEONGNAMI-SI,
GYEONGGI-DO,13557
SOUTH KOREA
Telephone no.: +612-9186-1132

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: CHEMWATCH (+612 9186 1132) China: 0532 8388 9090
EUROPE: BIG +32.14.584545 (phone) or +32.14583516 (telefax)
Mexico CHEMTREC 01-800-681-9531 (24 hours)
South America SOS-Cotec Inside Brazil: 0800.111.767 Outside Brazil: +55.19.3467.1600
Argentina: +(54)-1159839431

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**

Standards for classification and labeling of chemical substances and material safety data sheet (ministry of employment and labor public notice No. 2016-19) (GHS 2011)

Classification

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: Skin corrosion/irritation, Category 2
 Serious eye damage/eye irritation, Category 2
 Skin sensitization, Category 1
 Germ cell mutagenicity, Category 2
 Carcinogenicity, Category 2
 Specific target organ toxicity - repeated exposure, Category 2,
 Inhalation, Lungs
 Long-term (chronic) aquatic hazard, Category 2

Labeling

Symbol(s)



Signal Word

: Warning

Hazard Statements

: H315: Causes skin irritation.
 H317: May cause an allergic skin reaction.
 H319: Causes serious eye irritation.
 H341: Suspected of causing genetic defects.
 H351: Suspected of causing cancer.
 H373: May cause damage to organs (Lungs) through prolonged
 or repeated exposure if inhaled.
 H411: Toxic to aquatic life with long lasting effects.

Precautionary Statements

: **Prevention:**
 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 the contact area thoroughly after handling.
 P272: Contaminated work clothing should not be allowed out
 of the workplace.
 P273: Avoid release to the environment.
 P280: Wear protective gloves/ protective clothing/ eye
 protection/ face protection.
Response:
 P302 + P352: IF ON SKIN: Wash with plenty of soap and
 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.
 P308 + P313: IF exposed or concerned: Get medical advice/
 attention.
 P321: Specific treatment (see supplemental first aid
 instructions on this label).
 P333 + P313: If skin irritation or rash occurs: Get medical
 advice/ attention.
 P337 + P313: If eye irritation persists: Get medical advice/
 attention.
 P362 + P364: Take off contaminated clothing and wash it
 before reuse.
 P391: Collect spillage.
Storage:
 P405: Store locked up.
Disposal:
 P501: Dispose of contents and container according to wastes

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control act.

SECTION 3: Composition/information on ingredients

Chemical name	CAS-No.	Concentration	KECI Number
Epoxy Phenol Novolac	28064-14-4	30 % - 60%	KE-28226 (7)-2044
Aluminum Oxide	1344-28-1	25 % - 35%	KE-01012
o-Cresol Glycidyl Ether	2210-79-9	5 % - 15%	KE-24799
Titanium Dioxide	13463-67-7	0.1 % - 3%	KE-33900

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SECTION 4: First aid measures

- General advice : Move out of dangerous area. Show this material safety data sheet to the doctor in attendance.
- If inhaled : If unconscious, place in recovery position and seek medical advice. If symptoms persist, call a physician.
- In case of skin contact : If skin irritation persists, call a physician. If on skin, rinse well with water. If on clothes, remove clothes.
- In case of eye contact : Immediately flush eye(s) with plenty of water. Remove contact lenses. Protect unharmed eye. Keep eye wide open while rinsing. If eye irritation persists, consult a specialist.
- If swallowed : Do not induce vomiting without medical advice. Keep respiratory tract clear. Never give anything by mouth to an unconscious person. If symptoms persist, call a physician. Take victim immediately to hospital.

SECTION 5: Firefighting measures

- Flash point : >93°C (>200°F)
Method: ASTM D 93
- Unsuitable extinguishing media : High volume water jet.
- 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.

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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

Personal precautions : Use personal protective equipment.

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.

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SECTION 7: Handling and storage**Handling**

Advice on safe handling : 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. 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.

WARNING! For industrial/commercial use only. Mixture, use and application of the ForSField™ SG-11R epoxy resin with the ForSField™ SG-11H hardener must be performed by trained personnel only. Equipment used must include an appropriate plural component sprayer. Employ appropriate ventilation, and do not mix the epoxy resin with the hardener in a confined space. Avoid breathing fumes. Do not dispose of the mixed epoxy until the reaction is completed and the mixed epoxy has cooled

HEAT WARNING! Curing epoxy generates significant heat. Never handmix the ForSField™ SG-11R epoxy resin with the ForSField™ SG-11H hardener. Doing so will generate significant heat and the combined materials may reach temperatures which can cause severe burns to skin, melt plastic and foam, and ignite combustible materials (potentially as much as 300°F or higher). Do not mix the epoxy resin with the hardener in containers made of materials such as plastic, foam or glass. If a container of mixed epoxy resin and hardener starts to exotherm (heat up) take precautions to move the container to a safe location.

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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.

SECTION 8: Exposure controls/personal protection**Ingredients with workplace control parameters****KR**

Components	Basis	Value	Control parameters	Note
Aluminum Oxide	KR OEL	TWA	10 mg/m3	
Titanium Dioxide	KR OEL	TWA	10 mg/m3	Total fraction
	KR OEL	TWA	10 mg/m3	carc 2,

carc 2 Limited evidence of carcinogenicity in humans or animals, which is not sufficiently convincing to place the substance in Category 1

Engineering measures

Adequate ventilation to control airborne concentrations below the exposure guidelines/limits. 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: Air-Purifying Respirator for Organic Vapors. Use a positive pressure, air-supplying respirator if there is potential for uncontrolled release, aerosolization, 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. Tightly fitting safety goggles.

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- Skin and body protection : Choose body protection according to the amount and concentration of the dangerous substance at the work place. Wear as appropriate:. Personal protection through wearing a tightly closed chemical protection suit and a self-contained breathing apparatus. Remove and wash contaminated clothing before re-use. Footwear protecting against chemicals. Skin should be washed after contact.
- Hygiene measures : When using do not eat or drink. When using do not smoke. Wash hands before breaks and at the end of workday.

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

- Form : viscous
 Physical state : liquid
 Color : White
 Odor : Mild

Safety data

- Flash point : >93°C (>200°F)
 Method: ASTM D 93
- Lower explosion limit : No data available
- Upper explosion limit : No data available
- Thermal decomposition : No data available
- Molecular weight : Not applicable
- pH : Not applicable
- Melting point/range : No data available
- Pour point : No data available
- Vapor pressure : < 2.00 MMHG
 at 20°C (68°F)
- Density : 12.37 L/G
- Water solubility : negligible

SECTION 10: Stability and reactivity

- Reactivity** : Stable under recommended storage conditions.

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

Possibility of hazardous reactions

Hazardous reactions : Further information: No decomposition if stored and applied as directed.

Conditions to avoid : No data available.

Thermal decomposition : No data available

Other data : No decomposition if stored and applied as directed.

SECTION 11: Toxicological information

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Acute oral toxicity : No data available

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Acute inhalation toxicity : No data available

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Acute dermal toxicity : No data available

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Skin irritation : Irritating to skin.

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Eye irritation : Irritating to eyes.

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Sensitization : Causes sensitization.

Genotoxicity in vitro

Aluminum Oxide : Test Type: Ames test
Metabolic activation: with and without metabolic activation
Result: negative

CMR effects

o-Cresol Glycidyl Ether : Mutagenicity: In vitro tests showed mutagenic effects

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Further information : No data available.

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SECTION 12: Ecological information

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Toxicity to fish

Aluminum Oxide : NOEC: > 100 mg/l
Exposure time: 96 h
Species: *Salmo salar* (Atlantic salmon)
Method: OECD Test Guideline 203

o-Cresol Glycidyl Ether LC50: 2.8 - 5.1 mg/l
Exposure time: 96 h
Species: *Salmo gairdneri* (Rainbow trout)
static test Method: OECD Test Guideline 203

Toxicity to daphnia and other aquatic invertebrates

Aluminum Oxide : EC50: > 100 mg/l
Exposure time: 48 h
Species: *Daphnia magna* (Water flea)
Method: OECD Test Guideline 202

o-Cresol Glycidyl Ether EC50: 2.8 mg/l
Exposure time: 48 h
Species: *Daphnia magna* (Water flea)
static test Method: OECD Test Guideline 202

Toxicity to algae

Aluminum Oxide : NOEC: > 100 mg/l
Exposure time: 72 h
Species: *Selenastrum capricornutum* (algae)
Method: OECD Test Guideline 201

o-Cresol Glycidyl Ether 5.1 mg/l
Exposure time: 72 h
Species: *Pseudokirchneriella subcapitata* (microalgae)
Growth inhibition Method: OECD Test Guideline 201

Biodegradability : Taking into consideration the properties of several ingredients, the product is estimated not to be readily biodegradable according to OECD classification.

Elimination information (persistence and degradability)

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

Ecotoxicology Assessment

Short-term (acute) aquatic hazard

Epoxy Phenol Novolac : Toxic to aquatic life.

o-Cresol Glycidyl Ether : Toxic to aquatic life.

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Long-term (chronic) aquatic hazard

Epoxy Phenol Novolac : Toxic to aquatic life with long lasting effects.

o-Cresol Glycidyl Ether : 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.

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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)

NOT REGULATED AS A HAZARDOUS MATERIAL OR DANGEROUS GOODS FOR TRANSPORTATION BY THIS AGENCY.

IMO / IMDG (INTERNATIONAL MARITIME DANGEROUS GOODS)

UN3082, ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S., (EPOXY PHENOL NOVOLAC), 9, III, (>93°C), MARINE POLLUTANT, (EPOXY PHENOL NOVOLAC)

IATA (INTERNATIONAL AIR TRANSPORT ASSOCIATION)

UN3082, ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S., (EPOXY PHENOL NOVOLAC), 9, III

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

UN3082, ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S., (EPOXY

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PHENOL NOVOLAC), 9, III, ENVIRONMENTALLY HAZARDOUS, (EPOXY PHENOL NOVOLAC)

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

UN3082, ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S., (EPOXY PHENOL NOVOLAC), 9, III, ENVIRONMENTALLY HAZARDOUS, (EPOXY PHENOL NOVOLAC)

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

UN3082, ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S., (EPOXY PHENOL NOVOLAC), 9, III, ENVIRONMENTALLY HAZARDOUS, (EPOXY PHENOL NOVOLAC)

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

SECTION 15: Regulatory information**National legislation****Regulation under the Occupational Safety and Health Act**

A Material Safety Datasheet (MSDS) for this product is not required according to article 41 of the ISHA.

Regulation	Chemical name	Threshold limits
Harmful Substances Prohibited from Manufacturing	: Not applicable	
Harmful Substances Required Permission for Manufacture	: Not applicable	

Act on the Registration and Evaluation, etc. of Chemical Substances, Chemicals Control Act

Regulation	Chemical name	Threshold limits
Toxic Chemicals	: Not applicable	
Prohibited Chemicals	: Not applicable	
Restricted Chemicals	: Not applicable	
Toxic Release Inventory	: Alumina Oxide	>= 1 %

Dangerous Substances Safety Management Act

Dangerous Substances Safety Management Act : Not Applicable to Dangerous Materials

Notification status

Europe REACH : Not in compliance with the inventory
 United States of America (USA) TSCA : On or in compliance with the active portion of the TSCA inventory
 Canada DSL : All components of this product are on the Canadian DSL
 Australia AICS : On the inventory, or in compliance with the inventory

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New Zealand NZIoC	:	Not in compliance with the inventory
Japan ENCS	:	Not in compliance with the inventory
Korea KECI	:	A substance(s) in this product was not registered, notified to be registered, or exempted from registration by CPChem according to K-REACH regulations. Importation or manufacture of this product is still permitted provided the Korean Importer of Record has themselves notified the substance or the exported amount does not exceed the minimum threshold quantity of the non-registered substance(s).
China IECSC	:	On the inventory, or in compliance with the inventory
Taiwan TCSI	:	Not in compliance with the inventory
Philippines PICCS	:	On the inventory, or in compliance with the inventory

SECTION 16: Other information**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	TWA	Time Weighted Average

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	Substances in China		
ENCS	Japan, Inventory of Existing and New Chemical Substances	TSCA	Toxic Substance Control Act
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%		