

# SAFETY DATA SHEET



## Formula F Concentrate

Version 1.7

Revision Date 2016-08-16

### SECTION 1: Identification of the substance/mixture and of the company/undertaking

#### Product information

Product Name : Formula F Concentrate  
Material : 1107907, 1095337

Use : Intermediate

Company : Chevron Phillips Chemical Company LP  
Drilling Specialties Company LLC  
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

#### Globally Harmonized System of Classification and Labeling of Chemicals (GHS)

#### Emergency Overview

##### Warning

**Physical state:** Liquid    **Color:** Colorless    **Odor:** Slight hydrocarbon  
OSHA Hazards : Combustible Liquid

#### Classification

**Formula F Concentrate**

Version 1.7

Revision Date 2016-08-16

: Flammable liquids, Category 4

**Labeling**

Signal Word : Warning

Hazard Statements : H227: Combustible liquid.

Precautionary Statements : **Prevention:**  
 P210 Keep away from heat/sparks/open flames/hot surfaces.  
 No smoking.  
 P280 Wear protective gloves/ protective clothing/ eye  
 protection/ face protection.  
**Response:**  
 P370 + P378 In case of fire: Use dry sand, dry chemical or  
 alcohol-resistant foam for extinction.  
**Storage:**  
 P403 + P235 Store in a well-ventilated place. Keep cool.  
**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  
 human carcinogen by IARC.

**NTP**

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**

Synonyms : Drilling Mud Additive

Molecular formula : Mixture

Component	CAS-No.	Weight %
C12-C14 Isoalkanes	68551-19-9	0 - 95
Distillates (petroleum), hydrotreated light	64742-47-8	0 - 95

**SECTION 4: First aid measures**

General advice : No hazards which require special first aid measures.

If inhaled : If unconscious place in recovery position and seek medical  
 advice. If symptoms persist, call a physician.

**Formula F Concentrate**

Version 1.7

Revision Date 2016-08-16

- In case of skin contact : If on skin, rinse well with water. If on clothes, remove clothes.
- In case of eye contact : Flush eyes with water as a precaution. 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. Do not give milk or alcoholic beverages. Never give anything by mouth to an unconscious person. If symptoms persist, call a physician.

**SECTION 5: Firefighting measures**

- Flash point : 85 °C (185 °F)  
Method: Tag closed cup
- Autoignition temperature : No data available
- Suitable extinguishing media : Carbon dioxide (CO<sub>2</sub>).
- Unsuitable extinguishing media : High volume water jet.
- Special protective equipment for fire-fighters : Wear self-contained breathing apparatus for firefighting if necessary.
- Further information : For safety reasons in case of fire, cans should be stored separately in closed containments. Use a water spray to cool fully closed containers.
- Fire and explosion protection : Do not spray on an open flame or any other incandescent material. Keep away from open flames, hot surfaces and sources of ignition.
- Hazardous decomposition products : Carbon oxides.

**SECTION 6: Accidental release measures**

- Environmental precautions : 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 : Contain spillage, and then collect with non-combustible absorbent material, (e.g. sand, earth, diatomaceous earth, vermiculite) and place in container for disposal according to local / national regulations (see section 13). Keep in suitable, closed containers for disposal.

**SECTION 7: Handling and storage****Handling**

- Advice on safe handling : Avoid formation of aerosol. For personal protection see

**Formula F Concentrate**

Version 1.7

Revision Date 2016-08-16

section 8. Smoking, eating and drinking should be prohibited in the application area. Provide sufficient air exchange and/or exhaust in work rooms. Dispose of rinse water in accordance with local and national regulations.

Advice on protection against fire and explosion : Do not spray on an open flame or any other incandescent material. Keep away from open flames, hot surfaces and sources of ignition.

**Storage**

Requirements for storage areas and containers : No smoking. Keep container tightly closed in a dry and well-ventilated place. Observe label precautions. Electrical installations / working materials must comply with the technological safety standards.

**SECTION 8: Exposure controls/personal protection****Chevron Phillips Chemical Company LP**

Ingredients	Basis	Value	Control parameters	Note
C12-C14 Isoalkanes	Manufacturer	TWA	1,200 mg/m <sup>3</sup>	RCP,

**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 NIOSH approved respirator that provides protection when working with this material if exposure to harmful levels of airborne material may occur, such as: 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. Air-Purifying Respirator for Organic Vapors. 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. Tightly fitting safety goggles.

Skin and body protection : Choose body protection according to the amount and

**Formula F Concentrate**

Version 1.7

Revision Date 2016-08-16

concentration of the dangerous substance at the work place.  
Wear as appropriate: Protective suit. Safety shoes.

Hygiene measures : Wash hands before breaks and at the end of workday.

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

Physical state : Liquid  
Color : Colorless  
Odor : Slight hydrocarbon

**Safety data**

Flash point : 85 °C (185 °F)  
Method: Tag closed cup

Lower explosion limit : No data available

Upper explosion limit : No data available

Oxidizing properties : no

Autoignition temperature : No data available

Molecular formula : Mixture

Molecular weight : Not applicable

pH : Not applicable

Boiling point/boiling range : No data available

Vapor pressure : No data available

Relative density : 0.78  
at 15.6 °C (60.1 °F)

Water solubility : Insoluble

Viscosity, kinematic : 60000 cSt  
at 25 °C (77 °F)

Relative vapor density : No data available

Evaporation rate : No data available

**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.

**Formula F Concentrate**

Version 1.7

Revision Date 2016-08-16

**Possibility of hazardous reactions**

- Conditions to avoid : Heat, flames and sparks.
- Materials to avoid : May react with oxygen and strong oxidizing agents, such as chlorates, nitrates, peroxides, etc.
- Hazardous decomposition products : Carbon oxides
- Other data : No decomposition if stored and applied as directed.

**SECTION 11: Toxicological information****Acute oral toxicity**

- C12-C14 Isoalkanes : LD50: > 5000 milligram per kilogram  
Species: Rat  
Method: OECD Test Guideline 401  
Information given is based on data obtained from similar substances.

Distillates (petroleum),  
hydrotreated light : No data available

**Acute inhalation toxicity**

- C12-C14 Isoalkanes : LC50: > 5.0milligram per literExposure time: 4 h  
Species: Rat  
Test atmosphere: vapor  
Method: OECD Test Guideline 403  
An LC50/inhalation/4h/rat could not be determined because no mortality of rats was observed at the maximum achievable concentration.  
Information given is based on data obtained from similar substances.

Distillates (petroleum),  
hydrotreated light : No data available

**Acute dermal toxicity**

Distillates (petroleum),  
hydrotreated light : No data available

**Formula F Concentrate  
Skin irritation**

: No skin irritation

**Formula F Concentrate  
Eye irritation**

: No eye irritation

**Sensitization**

- C12-C14 Isoalkanes : Classification: Did not cause sensitization on laboratory animals.  
Information given is based on data obtained from similar substances.

**Formula F Concentrate**

Version 1.7

Revision Date 2016-08-16

Distillates (petroleum),  
hydrotreated light

Does not cause skin sensitization.  
Information given is based on data obtained from similar  
substances.

**Repeated dose toxicity**

C12-C14 Isoalkanes

: Species: Monkey  
Application Route: Inhalation  
Dose: 0, 654 ppm  
Exposure time: 4 wk  
Number of exposures: 6 h/d, 3 d/wk  
NOEL: > 654 ppm  
Method: OECD Test Guideline 412

Species: Rat, male and female  
Sex: male and female  
Application Route: oral gavage  
Dose: 0, 25, 150, 1000 mg/kg/d  
Exposure time: 4 wk  
Number of exposures: daily  
NOEL: >= 1000 mg/kg/d  
Method: OECD Guideline 422  
Information given is based on data obtained from similar  
substances.

**Reproductive toxicity**

C12-C14 Isoalkanes

: Species: Rat  
Sex: male  
Application Route: oral gavage  
Dose: 0, 750, 1500, 3000 mg/kg/bw/d  
Number of exposures: daily  
Test period: 90 d  
Method: OECD Test Guideline 415  
NOAEL Parent: >= 3000 mg/kg/bw/d  
Information given is based on data obtained from similar  
substances.

**Formula F Concentrate**

Version 1.7

Revision Date 2016-08-16

Species: Rat  
 Sex: female  
 Application Route: oral gavage  
 Dose: 0, 750, 1500 mg/kg/bw/d  
 Number of exposures: daily  
 Test period: 90 d  
 Method: OECD Test Guideline 415  
 NOAEL Parent:  $\geq$  1500 mg/kg/bw/d  
 NOAEL F1: 750 mg/kg/bw/d  
 Information given is based on data obtained from similar substances.

Species: Rat  
 Sex: male and female  
 Application Route: inhalation (vapor)  
 Dose: 100, 300 ppm  
 Number of exposures: 6 h/d/5d/wk  
 Test period: 8 wk  
 Method: OECD Guideline 421  
 NOAEL Parent:  $\geq$  300 ppm  
 NOAEL F1:  $\geq$  300 ppm  
 Information given is based on data obtained from similar substances.

**Developmental Toxicity**

C12-C14 Isoalkanes

: Species: Rat  
 Application Route: Inhalation  
 Dose: 100, 300 ppm  
 Exposure time: GD 6-15  
 Number of exposures: 6 h/d  
 NOAEL Teratogenicity:  $\geq$  300 ppm  
 Information given is based on data obtained from similar substances.

Species: Rat  
 Application Route: Inhalation  
 Dose: 300, 900 ppm  
 Exposure time: GD 6-15  
 Number of exposures: 6 h/d  
 Method: OECD Guideline 414  
 NOAEL Teratogenicity:  $\geq$  900 ppm  
 NOAEL Maternal:  $\geq$  900 ppm  
 Information given is based on data obtained from similar substances.

Species: Rat  
 Application Route: oral gavage  
 Dose: 0, 500, 1000, 1500 mg/kg/d  
 Exposure time: GD 6-15  
 Number of exposures: Daily  
 Method: OECD Guideline 414  
 NOAEL Teratogenicity: 1,000 mg/kg  
 NOAEL Maternal: 500 mg/kg  
 Information given is based on data obtained from similar substances.

**Formula F Concentrate**

**Formula F Concentrate**

Version 1.7

Revision Date 2016-08-16

<b>Aspiration toxicity</b>	: No aspiration toxicity classification.
<b>CMR effects</b>	
C12-C14 Isoalkanes	: Carcinogenicity: Limited evidence of carcinogenicity in animal studies Mutagenicity: Tests on bacterial or mammalian cell cultures did not show mutagenic effects., In vivo tests did not show mutagenic effects Teratogenicity: Animal testing did not show any effects on fetal development. Reproductive toxicity: No adverse effects expected
<b>Formula F Concentrate Further information</b>	: No data available.

**SECTION 12: Ecological information****Toxicity to fish**

C12-C14 Isoalkanes	: LL50: > 1,000 mg/l Exposure time: 96 h Species: Oncorhynchus mykiss (rainbow trout) semi-static test Method: OECD Test Guideline 203 Information given is based on data obtained from similar substances.
--------------------	---

**Toxicity to daphnia and other aquatic invertebrates**

C12-C14 Isoalkanes	: EL50: > 1,000 mg/l Exposure time: 48 h Species: Daphnia magna (Water flea) static test Method: OECD Test Guideline 202 Information given is based on data obtained from similar substances.
Distillates (petroleum), hydrotreated light	EL50: > 100 mg/l Exposure time: 48 h Species: Daphnia magna (Water flea) static test Method: OECD Test Guideline 202 Aquatic toxicity is unlikely due to low solubility.

**Toxicity to algae**

C12-C14 Isoalkanes	: EL50: > 1,000 mg/l Exposure time: 72 h Species: Pseudokirchneriella subcapitata (green algae) Growth inhibition Method: OECD Test Guideline 201 Information given is based on data obtained from similar substances.
--------------------	--

**Toxicity to fish (Chronic toxicity)**

**Formula F Concentrate**

Version 1.7

Revision Date 2016-08-16

C12-C14 Isoalkanes : NOELR: 0.316 mg/l  
 Exposure time: 28 d  
 Species: Oncorhynchus mykiss (rainbow trout)  
 Method: QSAR modeled data

Elimination information (persistence and degradability)

Biodegradability : No data available

**Ecotoxicology Assessment**

Results of PBT assessment

C12-C14 Isoalkanes : Non-classified PBT substance, Non-classified vPvB substance

Additional ecological information : No data available

**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 : Do not dispose of waste into sewer. 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. Do not burn, or use a cutting torch on, the empty drum.

**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.

Testing (ASTM D4206) has shown product does not sustain combustion.

**IMO / IMDG (INTERNATIONAL MARITIME DANGEROUS GOODS)**

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

**Formula F Concentrate**

Version 1.7

Revision Date 2016-08-16

**IATA (INTERNATIONAL AIR TRANSPORT ASSOCIATION)**

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

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

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

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

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

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

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

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** : Fire Hazard

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.

**Formula F Concentrate**

Version 1.7

Revision Date 2016-08-16

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 SOCM I Intermediate or Final VOC's (40 CFR 60.489).

**US State Regulations**

Pennsylvania Right To Know : No components are subject to the Pennsylvania Right to Know Act.

New Jersey Right To Know : No components are subject to the New Jersey Right to Know Act.

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	:	On the inventory, or in compliance with the inventory
Switzerland CH INV	:	On the inventory, or in compliance with the inventory
United States of America TSCA	:	On 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
New Zealand NZIoC	:	On the inventory, or in compliance with the inventory
Japan ENCS	:	On the inventory, or in compliance with the inventory
Korea KECI	:	On the inventory, or in compliance with the inventory
Philippines PICCS	:	Not in compliance with the inventory
China IECSC	:	On the inventory, or in compliance with the inventory

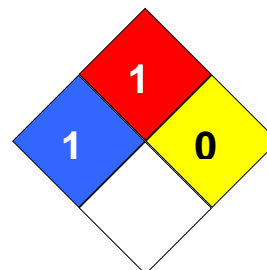
**Formula F Concentrate**

Version 1.7

Revision Date 2016-08-16

**SECTION 16: Other information**

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

**Further information**

Legacy SDS Number : CPC00406

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

**Formula F Concentrate**

Version 1.7

Revision Date 2016-08-16

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
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%		