# **SAFETY DATA SHEET**



GHS product identifier	:	Clarion® Food Grade FR Fluid
Synonyms	:	Fire resistant hydraulic fluid; Hydraulic fluid
Code	÷	632503009
MSDS #	÷	632503009

Relevant identified uses of the substance or mixture and uses advised against Not applicable.

Supplier's details	: CITGO Petroleum Corporation P.O. Box 4689 Houston, TX 77210 sdsvend@citgo.com
Emergency telephone number (with hours of operation)	<ul> <li>Technical Contact: (800) 248-4684 (M-F, 8 AM to 4 PM) Medical Emergency: (832) 486-4700 (24 Hr) CHEMTREC Emergency: (800) 424-9300 (24 Hr) (United States Only)</li> </ul>

## Section 2. Hazards identification

OSHA/HCS sta	itus
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: This material is considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200).

Classification of the<br/>substance or mixture: SKIN IRRITATION - Category 2<br/>EYE IRRITATION - Category 2A

**GHS label elements** 

Hazard pictograms



Signal word	/arning	
Hazard statements	auses skin irritation. auses serious eye irritation.	
Precautionary statements		
General	eep out of reach of children.	
Prevention	ear protective gloves. Wear eye or face protection. Do not get in eyes, on skin, or o othing. Wash thoroughly after handling.	on
Response	ake off contaminated clothing and wash it before reuse. IF ON SKIN: Wash with enty of water. If skin irritation occurs: Get medical advice or attention. IF IN EYES: inse cautiously with water for several minutes. Remove contact lenses, if present ar asy to do. Continue rinsing. If eye irritation persists: Get medical advice or attention	nd
Storage	ore in accordance with all local, regional, national and international regulations. Store and a closed container. Empty containers may contain material residue	

in a dry place and a closed container. Empty containers may contain material residues which can ignite with explosive force. Misuse of empty containers can be dangerous if used to store toxic, flammable, or reactive materials. Cutting or welding of empty containers can cause fire, explosion, or release of toxic fumes from residues. Do not pressurize or expose empty containers to open flame, sparks, or heat. Keep container closed and drum bungs in place. All label warnings and precautions must be observed. Return empty drums to a qualified reconditioner. Consult appropriate federal, state and local authorities before reusing, reconditioning, reclaiming, recycling, or disposing of empty containers and/or waste residues of this material.

LUBRICANTS

## Section 2. Hazards identification

Disposal	: Dispose of contents and container in accordance with all local, regional, national and international regulations.
Hazards not otherwise classified	<ul> <li>Injection of pressurized hydrocarbons can cause severe permanent tissue damage. Initial symptoms may be minor. Injection of petroleum hydrocarbons requires immediate medical attention.</li> </ul>

## Section 3. Composition/information on ingredients

Substance/mixture	: Mixture
Other means of	: Fire resistant hydraulic fluid;
identification	Hydraulic fluid

### **CAS number/other identifiers**

%	CAS number
≥25 - ≤50 ≤3	57-55-6 334-48-5
	≥25 - ≤50

\* = Various \*\* = Mixture \*\*\* = Proprietary

Any concentration shown as a range is to protect confidentiality or is due to process variation.

There are no additional ingredients present which, within the current knowledge of the supplier and in the concentrations applicable, are classified and hence require reporting in this section.

Occupational exposure limits, if available, are listed in Section 8.

### Section 4. First aid measures

### Description of necessary first aid measures

Eye contact	mmediately flush eyes with plenty of water, occasionally lifting the upper and lower eyelids. Check for and remove any contact lenses. Continue to rinse for at least 10 ninutes. Get medical attention.
Inhalation	Remove victim to fresh air and keep at rest in a position comfortable for breathing. If not breathing, if breathing is irregular or if respiratory arrest occurs, provide artificial espiration or oxygen by trained personnel. It may be dangerous to the person providing id to give mouth-to-mouth resuscitation. Get medical attention if adverse health effects persist or are severe. If unconscious, place in recovery position and get medical attention immediately. Maintain an open airway. Loosen tight clothing such as a collar, ie, belt or waistband.
Skin contact	Flush contaminated skin with plenty of water. Remove contaminated clothing and hoes. Continue to rinse for at least 10 minutes. Get medical attention. Wash clothing before reuse. Clean shoes thoroughly before reuse.
Ingestion	Vash out mouth with water. Remove dentures if any. Remove victim to fresh air and acep at rest in a position comfortable for breathing. Do not induce vomiting unless lirected to do so by medical personnel. If vomiting occurs, the head should be kept low to that vomit does not enter the lungs. Get medical attention if adverse health effects persist or are severe. Never give anything by mouth to an unconscious person. If unconscious, place in recovery position and get medical attention immediately. Maintair an open airway. Loosen tight clothing such as a collar, tie, belt or waistband.

Most important symptoms/effects, acute and delayed

Eye contact	: Causes serious eye irritation.
Inhalation	: No known significant effects or critical hazards.
Skin contact	<ul> <li>Injection of pressurized hydrocarbons can cause severe permanent tissue damage Initial symptoms may be minor. Causes skin irritation.</li> </ul>
Ingestion	: No known significant effects or critical hazards.

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## Section 4. First aid measures

Eye contact	: Adverse symptoms may include the following: pain or irritation watering redness
Inhalation	: No specific data.
Skin contact	: Adverse symptoms may include the following: irritation redness
Ingestion	: No specific data.
Indication of immediate med	ical attention and special treatment needed, if necessary
Notes to physician	: In the event of injection in underlying tissue, immediate treatment should include extensive incision, debridement and saline irrigation. Inadequate treatment can result in ischemia and gangrene. Early symptoms may be minimal.
Specific treatments	: Treat symptomatically and supportively.
Protection of first-aiders	: No action shall be taken involving any personal risk or without suitable training. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation.

See toxicological information (Section 11)

## Section 5. Fire-fighting measures

	-
Extinguishing media	
Suitable extinguishing media	: Use an extinguishing agent suitable for the surrounding fire.
Unsuitable extinguishing media	: None known.
Specific hazards arising from the chemical	: In a fire or if heated, a pressure increase will occur and the container may burst.
Hazardous thermal decomposition products	: Decomposition products may include the following materials: carbon dioxide carbon monoxide metal oxide/oxides
Special protective actions for fire-fighters	<ul> <li>Promptly isolate the scene by removing all persons from the vicinity of the incident if there is a fire. No action shall be taken involving any personal risk or without suitable training.</li> </ul>
Special protective equipment for fire-fighters	: Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode.

## Section 6. Accidental release measures

Personal precautions, protect	tiv	e equipment and emergency procedures
For non-emergency personnel	:	No action shall be taken involving any personal risk or without suitable training. Evacuate surrounding areas. Keep unnecessary and unprotected personnel from entering. Do not touch or walk through spilled material. Avoid breathing vapor or mist. Provide adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Put on appropriate personal protective equipment.
For emergency responders	:	If specialized clothing is required to deal with the spillage, take note of any information in Section 8 on suitable and unsuitable materials. See also the information in "For non-emergency personnel".
Environmental precautions	:	Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers. Inform the relevant authorities if the product has caused environmental pollution (sewers, waterways, soil or air).

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### Section 6. Accidental release measures

### Methods and materials for containment and cleaning up

Small spill	: Stop leak if without risk. Move containers from spill area. Dilute with water and mop up if water-soluble. Alternatively, or if water-insoluble, absorb with an inert dry material and place in an appropriate waste disposal container. Dispose of via a licensed waste disposal contractor.
Large spill	: Stop leak if without risk. Move containers from spill area. Approach release from upwind. Prevent entry into sewers, water courses, basements or confined areas. Wash spillages into an effluent treatment plant or proceed as follows. Contain and collect spillage with non-combustible, absorbent material e.g. sand, earth, vermiculite or diatomaceous earth and place in container for disposal according to local regulations (see Section 13). Dispose of via a licensed waste disposal contractor. Contaminated absorbent material may pose the same hazard as the spilled product. Note: see Section 1 for emergency contact information and Section 13 for waste disposal.

### Section 7. Handling and storage

### Precautions for safe handling

Protective measures	:	Put on appropriate personal protective equipment (see Section 8). Do not ingest. Avoid contact with eyes, skin and clothing. Avoid breathing vapor or mist. Keep in the original container or an approved alternative made from a compatible material, kept tightly closed when not in use. Empty containers retain product residue and can be hazardous. Do not reuse container.
Advice on general occupational hygiene	:	Eating, drinking and smoking should be prohibited in areas where this material is handled, stored and processed. Workers should wash hands and face before eating, drinking and smoking. Remove contaminated clothing and protective equipment before entering eating areas. See also Section 8 for additional information on hygiene measures.
Conditions for safe storage, including any incompatibilities	:	Store in accordance with local regulations. Store in original container protected from direct sunlight in a dry, cool and well-ventilated area, away from incompatible materials (see Section 10) and food and drink. Keep container tightly closed and sealed until ready for use. Containers that have been opened must be carefully resealed and kept upright to prevent leakage. Do not store in unlabeled containers. Use appropriate containment to avoid environmental contamination. See Section 10 for incompatible materials before handling or use.
		Bulk Storage Conditions: Maintain all storage tanks in accordance with applicable regulations. Use necessary controls to monitor tank inventories. Inspect all storage tanks on a periodic basis. Test tanks and associated piping for tightness. Maintain the automatic leak detection devices to assure proper working condition.

## Section 8. Exposure controls/personal protection

### Control parameters

propane-1,2-diol

Occupational exposure limits

### OARS WEEL (United States).

TWA: 10 mg/m<sup>3</sup> 8 hours. Form: Aerosol. **OARS WEEL (United States, 1/2021).** TWA: 10 mg/m<sup>3</sup> 8 hours.

Appropriate engineering controls	: Good general ventilation should be sufficient to control worker exposure to airborne contaminants.
Environmental exposure controls	: Emissions from ventilation or work process equipment should be checked to ensure they comply with the requirements of environmental protection legislation. In some cases, vapor controls, filters or engineering modifications to the process equipment will be necessary to reduce emissions to acceptable levels.

### Individual protection measures

## Section 8. Exposure controls/personal protection

-	
Hygiene measures	: Wash hands, forearms and face thoroughly after handling chemical products, before eating, smoking and using the lavatory and at the end of the working period. Appropriate techniques should be used to remove potentially contaminated clothing. Wash contaminated clothing before reusing. Ensure that eyewash stations and safety showers are close to the workstation location.
Eye/face protection	: Safety glasses equipped with side shields are recommended as minimum protection in industrial settings. If contact is possible, the following protection should be worn, unless the assessment indicates a higher degree of protection: chemical splash goggles. Safety eyewear complying with an approved standard should be used when a risk assessment indicates this is necessary to avoid exposure to liquid splashes, mists, gases or dusts. If inhalation hazards exist, a full-face respirator may be required instead.
Skin protection	
Hand protection	: Avoid skin contact with liquid. Chemical-resistant gloves complying with an approved standard should be worn at all times when handling chemical products if a risk assessment indicates this is necessary. Considering the parameters specified by the glove manufacturer, check during use that the gloves are still retaining their protective properties. It should be noted that the time to breakthrough for any glove material may be different for different glove manufacturers. Leather gloves are not protective for liquid contact.
Body protection	: Personal protective equipment for the body should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.
Other skin protection	: Avoid skin contact with liquid. Appropriate footwear and any additional skin protection measures should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product. Leather boots are not protective for liquid contact.
Respiratory protection	: Avoid inhalation of gases, vapors, mists or dusts. Use a properly fitted, air-purifying or supplied-air respirator complying with an approved standard if a risk assessment indicates this is necessary. Respirator selection must be based on known or anticipated exposure levels, the hazards of the product and the safe working limits of the selected respirator.

## Section 9. Physical and chemical properties

The conditions of measurement of all properties are at standard temperature and pressure unless otherwise indicated.

Relative density Date of issue/Date of revision	: 1.06 : 10/31/2022 Date of (	orevious is	\$110	: 10/11/2022		Version	:6	5/11
Relative vapor density	: 1.3 [Air = 1]							
Vapor pressure	: 1.9 kPa (14 mm Hg)	I						
Lower and upper explosive (flammable) limits	: Not available.							
Evaporation rate	: 0.9 (butyl acetate =	1)						
	decanoic acid	>109.85	>229.7					
	propane-1,2-diol	99	210.2					
	Ingredient name	°C	°F	Method	°C	°F	Method	
			Closed	cup		Open o	cup	
Flash point	: [Product does not s	ustain co	mbustion	l.]				
Boiling point, initial boiling point, and boiling range	: 105°C (221°F)							
Melting point	: -26°C (-14.8°F)							
рН	: 8.5							
Odor	: Mild.							
Color	: Colorless to light yel	low.						
Physical state	: Liquid.							

Density lbs/gal	: Estimated 8.84 lbs/gal
Density gm/cm <sup>3</sup>	: Not available.
Gravity, °API	: Estimated 2 @ 60 F
Solubility	: Easily soluble in the following materials: cold water.
Auto-ignition temperature	: Not applicable.
Viscosity	: Kinematic (40°C (104°F)): 46 mm²/s (46 cSt)
Viscosity SUS	: Estimated 213 SUS @104 F
Flow time (ISO 2431)	: Not available.
Particle characteristics	
Median particle size	: Not applicable.

## Section 10. Stability and reactivity

Reactivity	: Not expected to be Explosive, Self-Reactive, Self-Heating, or an Organic Peroxide under US GHS Definition(s).
Chemical stability	: The product is stable.
Possibility of hazardous reactions	: Under normal conditions of storage and use, hazardous reactions will not occur.
Conditions to avoid	: No specific data.
Incompatible materials	: No specific data.
Hazardous decomposition products	: Under normal conditions of storage and use, hazardous decomposition products should not be produced.

## Section 11. Toxicological information

### Information on toxicological effects

**Acute toxicity** 

Result	Species	Dose	Exposure
LD50 Dermal	Rabbit	20800 mg/kg	-
LD50 Oral	Guinea pig	18350 mg/kg	-
LD50 Oral	Mouse	00	-
LD50 Oral	Rabbit		-
LD50 Oral	Rat	20 g/kg	-
LD50 Subcutaneous	Rat	22500 mg/kg	-
LD50 Oral	Rat	>10 g/kg	-
	LD50 Dermal LD50 Oral LD50 Oral LD50 Oral LD50 Oral LD50 Oral LD50 Subcutaneous	LD50 DermalRabbitLD50 OralGuinea pigLD50 OralMouseLD50 OralRabbitLD50 OralRatLD50 OralRatLD50 SubcutaneousRat	LD50 DermalRabbit20800 mg/kgLD50 OralGuinea pig18350 mg/kgLD50 OralMouse22 g/kgLD50 OralRabbit18500 mg/kgLD50 OralRat20 g/kgLD50 SubcutaneousRat22500 mg/kg

**Conclusion/Summary** : propane-1,2-diol: Propylene glycol is slightly toxic by ingestion, skin contact, intraperitoneal, intravenous, subcutaneous and intramuscular routes. Repeated excessive exposure to propylene glycol has been associated with central nervous system effects.

### Irritation/Corrosion

Result	Species	Score	Exposure	Observation
Eyes - Mild irritant	Rabbit	-	24 hours 500 ma	-
Eves - Mild irritant	Rabbit	-		-
Skin - Moderate irritant	Child	-	96 hours 30 % C	-
Skin - Mild irritant	Human	-	168 hours 500 mg	-
Skin - Moderate irritant	Human	-	72 hours 104	-
Skin - Mild irritant	Woman	-	96 hours 30 %	-
	Eyes - Mild irritant Eyes - Mild irritant Skin - Moderate irritant Skin - Mild irritant Skin - Moderate irritant	Eyes - Mild irritantRabbitEyes - Mild irritantRabbitSkin - Moderate irritantChildSkin - Mild irritantHumanSkin - Moderate irritantHuman	Eyes - Mild irritantRabbit-Eyes - Mild irritantRabbit-Skin - Moderate irritantChild-Skin - Mild irritantHuman-Skin - Moderate irritantHuman-	Eyes - Mild irritantRabbit-24 hours 500 mgEyes - Mild irritantRabbit-100 mgSkin - Moderate irritantChild-96 hours 30 % CSkin - Mild irritantHuman-168 hours 500 mgSkin - Moderate irritantHuman-72 hours 104 mg lSkin - Mild irritantWoman-96 hours 30

## Section 11. Toxicological information

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1/2022 Date of previo	ous issue :	10/11/2022	Version	:6
	lo known significant effect njection of pressurized hy nitial symptoms may be r lo known significant effect <b>. chemical and toxicolo</b> dverse symptoms may in ain or irritation vatering edness lo specific data. dverse symptoms may in ritation edness	njection of pressurized hydrocarbons can nitial symptoms may be minor. Causes s lo known significant effects or critical haz , chemical and toxicological character dverse symptoms may include the follow ain or irritation vatering edness lo specific data. dverse symptoms may include the follow ritation edness	lo known significant effects or critical hazards. njection of pressurized hydrocarbons can cause severe nitial symptoms may be minor. Causes skin irritation. Io known significant effects or critical hazards. <b>. chemical and toxicological characteristics</b> adverse symptoms may include the following: ain or irritation vatering edness Io specific data. adverse symptoms may include the following: ritation edness	lo known significant effects or critical hazards. njection of pressurized hydrocarbons can cause severe permanent tiss nitial symptoms may be minor. Causes skin irritation. Io known significant effects or critical hazards. <b>. chemical and toxicological characteristics</b> dverse symptoms may include the following: ain or irritation vatering edness Io specific data. dverse symptoms may include the following: ritation

## Section 11. Toxicological information

Ingestion

: No specific data.

Delayed and immediate effect	ts and also chronic effects from short and long term exposure
<u>Short term exposure</u>	
Potential immediate effects	: Not available.
Potential delayed effects	: Not available.
Long term exposure	
Potential immediate effects	: Not available.
Potential delayed effects	: Not available.
Potential chronic health eff	ects
Not available.	
General	: No known significant effects or critical hazards.
Carcinogenicity	: No known significant effects or critical hazards.
Mutagenicity	: No known significant effects or critical hazards.
Teratogenicity	: No known significant effects or critical hazards.
<b>Developmental effects</b>	: No known significant effects or critical hazards.
Fertility effects	: No known significant effects or critical hazards.

### Numerical measures of toxicity

### Acute toxicity estimates

-		Dermal (mg/kg)	(gases)	(vapors)	Inhalation (dusts and mists) (mg/ I)
propane-1,2-diol	20000	20800	N/A	N/A	N/A

## Section 12. Ecological information

Product/ingredient name	Result	Species
propane-1,2-diol	Acute EC50 >110 ppm Fresh water Acute LC50 1020000 µg/l Fresh water	Daphnia - Daphnia magna Crustaceans - Ceriodaphnia dubia
	Acute LC50 710000 µg/l Fresh water	Fish - Pimephales promelas

## Persistence and degradability

**Conclusion/Summary** : Not available.

### **Bioaccumulative potential**

Product/ingredient name	LogPow	BCF	Potential
propane-1,2-diol	-1.07	-	low
decanoic acid	4.09		high

### Mobility in soil

Soil/water partition: Not available.coefficient (Koc)

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Exposure 48 hours 48 hours

96 hours

## Section 12. Ecological information

Other adverse effects

: No known significant effects or critical hazards.

### Section 13. Disposal considerations

Disposal methods : The generation of waste should be avoided or minimized wherever possible. Disposal of this product, solutions and any by-products should at all times comply with the requirements of environmental protection and waste disposal legislation and any regional local authority requirements. Dispose of surplus and non-recyclable products via a licensed waste disposal contractor. Waste should not be disposed of untreated to the sewer unless fully compliant with the requirements of all authorities with jurisdiction. Waste packaging should be recycled. Incineration or landfill should only be considered when recycling is not feasible. This material and its container must be disposed of in a safe way. Care should be taken when handling emptied containers that have not been cleaned or rinsed out. Empty containers or liners may retain some product residues. Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers.

### Section 14. Transport information

	DOT Classification	IMDG	ΙΑΤΑ
UN number	Not regulated.	Not regulated.	Not regulated.
UN proper shipping name	-	-	-
Transport hazard class(es)	-	-	-
Packing group	-	-	-
Environmental hazards	No.	No.	No.

Special precautions for user		Transport within user's premises: always transport in closed containers that are
		upright and secure. Ensure that persons transporting the product know what to do in the event of an accident or spillage.

Transport in bulk according : Not available. to IMO instruments

## Section 15. Regulatory information

U.S. Federal regulations

United States inventory (TSCA 8b): All components are listed or exempted.

This material is classified as an oil under Section 311 of the Clean Water Act (CWA) and the Oil Pollution Act of 1990 (OPA). Discharges or spills which produce a visible sheen on waters of the United States, their adjoining shorelines, or into conduits leading to surface waters must be reported to the EPA's National Response Center at (800) 424-8802.

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SARA 302/304Composition/information on ingredientsSARA 304 RQ: Not applicable.SARA 311/312

## Section 15. Regulatory information

#### Classification

: SKIN IRRITATION - Category 2 EYE IRRITATION - Category 2A HNOC - Injection Hazards

#### **Composition/information on ingredients**

Name	%	Classification	
propane-1,2-diol decanoic acid	≥25 - ≤50 ≤3	SKIN IRRITATION - Category 2 EYE IRRITATION - Category 2B HNOC - Injection Hazards SKIN IRRITATION - Category 2 EYE IRRITATION - Category 2A HNOC - Injection Hazards	

#### **State regulations**

New York         : None of the components are listed.	
New Jersey : The following components are listed: PROPYLENE GLYCOL; 1,2-PROPA	NEDIOL
Pennsylvania : The following components are listed: 1,2-PROPANEDIOL	
International regulations	

### Rotterdam Convention on Prior Informed Consent (PIC) Not listed.

**Inventory list** 

United States	: All components are listed or exempted.
Australia	: All components are listed or exempted.
Canada	: All components are listed or exempted.
China	: All components are listed or exempted.
Europe	: All components are listed or exempted.
Japan	: Japan inventory (CSCL): All components are listed or exempted. Japan inventory (ISHL): Not determined.
Malaysia	: Not determined
New Zealand	: Not determined.
Philippines	: All components are listed or exempted.
Republic of Korea	: All components are listed or exempted.
Taiwan	: Not determined.
Thailand	: Not determined.
Turkey	: Not determined.
Viet Nam	: Not determined.

### Section 16. Other information

National Fire Protection Association (U.S.A.)

<b>Flam</b>	mability
Health 1 0 Ins	tability/Reactivity
Spec	ial

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### Section 16. Other information

Copyright ©2001, National Fire Protection Association, Quincy, MA 02269. This warning system is intended to be interpreted and applied only by properly trained individuals to identify fire, health and reactivity hazards of chemicals. The user is referred to certain limited number of chemicals with recommended classifications in NFPA 49 and NFPA 325, which would be used as a guideline only. Whether the chemicals are classified by NFPA or not, anyone using the 704 systems to classify chemicals does so at their own risk.

#### Procedure used to derive the classification

		Classification	Justification
SKIN IRRITATION - Catego EYE IRRITATION - Catego			Calculation method Calculation method
History			
Date of printing	: 1	10/31/2022	
Date of issue/Date of revision	: 1	10/31/2022	
Date of previous issue	: 1	10/11/2022	
Version	: 6	6	
Key to abbreviations	E (   	6 ATE = Acute Toxicity Estimate BCF = Bioconcentration Factor GHS = Globally Harmonized System of Classification and Labelling of Chemicals IATA = International Air Transport Association IBC = International Air Transport Association IBC = International Maritime Dangerous Goods LogPow = logarithm of the octanol/water partition coefficient MARPOL = International Convention for the Prevention of Pollution From Ships, 1973 as modified by the Protocol of 1978. ("Marpol" = marine pollution) UN = United Nations	
References		Based on MSDS prepared by Dow Chemical Company 'Clarion Food Grade FR Fluid"	v (No. 41307) dated 6/2/04 titled

Indicates information that has changed from previously issued version.

### Notice to reader

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