SAFETY DATA SHEET

CITGO FR WG-40XD



Section 1. Identification

GHS product identifier : CITGO FR WG-40XD

Synonyms : Fire-resistant hydraulic fluid

Code : 648326001 **MSDS #** : 648326001

Supplier's details : CITGO Petroleum Corporation

P.O. Box 4689 Houston, TX 77210 sdsvend@citgo.com

Emergency telephone

number

: Technical Contact: (800) 248-4684 Medical Emergency: (832) 486-4700 CHEMTREC Emergency: (800) 424-9300

(United States Only)

Section 2. Hazards identification

OSHA/HCS status

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

Classification of the substance or mixture

: ACUTE TOXICITY: ORAL - Category 4

SERIOUS EYE DAMAGE/ EYE IRRITATION - Category 2B

SPECIFIC TARGET ORGAN TOXICITY (REPEATED EXPOSURE): ORAL [kidneys

and liver] - Category 2

GHS label elements

Hazard pictograms





Signal word : Warning

Hazard statements : Harmful if swallowed. Causes eye irritation.

May cause damage to organs through prolonged or repeated exposure if swallowed.

(kidneys, liver)

Injection under the skin can cause severe injury. Most damage occurs in the first few hours.

Initial symptoms may be minimal.

Precautionary statements

General

: Avoid contact with eyes, skin and clothing. After handling, always wash hands thoroughly with soap and water. If you feel unwell, seek medical attention and show the label when possible. Keep out of reach of children.

Prevention

: Wear eye or face protection. Do not breathe vapor. Do not eat, drink or smoke when using this product. Wash hands thoroughly after handling.

Response

: Get medical attention if you feel unwell. IF SWALLOWED: Call a POISON CENTER or physician if you feel unwell. Rinse mouth. IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If eye irritation persists: Get medical attention.

Storage

: Store in a dry place and/or in closed container. Store in accordance with all local, regional, national and international regulations.

Disposal

: Dispose of contents and container in accordance with all local, regional, national and international regulations.

Hazards not otherwise

classified

: Injection of petroleum hydrocarbons requires immediate medical attention

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Section 3. Composition/information on ingredients

Substance/mixture

Other means of identification

: Mixture : Fire-resistant hydraulic fluid

CAS number/other identifiers

CAS number : Not applicable.

Ingredient name	%	CAS number
Diethylene glycol	30 - 60	111-46-6
decanoic acid	0.5 - 1.5	334-48-5
2-diisopropylaminoethanol	0.5 - 1.5	96-80-0

^{* =} Various Mixture *** = Proprietary

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

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

Section 4. First aid measures

Description of necessary first aid measures

Eye contact

: Immediately 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 minutes. Get medical attention following exposure or if feeling unwell.

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 respiration or oxygen by trained personnel. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation. Get medical attention following exposure or if feeling unwell. If unconscious, place in recovery position and get medical attention immediately. Maintain an open airway. Loosen tight clothing such as a collar, tie, belt or waistband. In case of inhalation of decomposition products in a fire, symptoms may be delayed. The exposed person may need to be kept under medical surveillance for 48 hours.

Skin contact

: Flush contaminated skin with plenty of water. Remove contaminated clothing and shoes. Continue to rinse for at least 10 minutes. Get medical attention following exposure or if feeling unwell. Wash clothing before reuse. Clean shoes thoroughly before reuse.

Ingestion

Inhalation

Wash out mouth with water. Remove dentures if any. Remove victim to fresh air and keep at rest in a position comfortable for breathing. Do not induce vomiting unless directed to do so by medical personnel. If vomiting occurs, the head should be kept low so that vomit does not enter the lungs. Get medical attention. If necessary, call a poison center or physician. Never give anything by mouth to an unconscious person. If unconscious, place in recovery position and get medical attention immediately. Maintain an open airway. Loosen tight clothing such as a collar, tie, belt or waistband.

Most important symptoms/effects, acute

Potential acute health effects

Eye contact : Causes eye irritation.

: Exposure to decomposition products may cause a health hazard. Serious effects may be delayed following exposure.

Skin contact Injection of pressurized hydrocarbons can cause severe permanent tissue damage.

Initial symptoms may be minor.

Ingestion : Harmful if swallowed. May be irritating to mouth, throat and stomach.

Over-exposure signs/symptoms

Eye contact Adverse symptoms may include the following:

> irritation watering redness

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Section 4. First aid measures

Inhalation: No specific data.Skin contact: No specific data.Ingestion: No specific data.

Indication of immediate medical attention and special treatment needed, if necessary

Notes to physician

: In case of inhalation of decomposition products in a fire, symptoms may be delayed. The exposed person may need to be kept under medical surveillance for 48 hours.

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

Specific hazards arising from the chemical

: In a fire or if heated, a pressure increase will occur and the container may burst.

Extinguishing media

Suitable extinguishing media

: Use an extinguishing agent suitable for the surrounding fire.

Unsuitable extinguishing media

: None known.

Hazardous thermal decomposition products

 Decomposition products may include the following materials: carbon dioxide carbon monoxide

nitrogen oxides metal oxide/oxides

Special protective actions for fire-fighters

: 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.

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, protective 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).

Methods and materials for containment and cleaning up

Small spill

: Stop leak if without risk. Move containers from spill area. Absorb with an inert material and place in an appropriate waste disposal container. Dispose of via a licensed waste disposal contractor.

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Section 6. Accidental release measures

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 breathe vapor or mist. Do not ingest. Avoid contact with eyes, skin and clothing. 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.

including any incompatibilities

Conditions for safe storage, : 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.

> 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

Occupational exposure limits

Ingredient name	Exposure limits
Diethylene glycol	AIHA WEEL (United States, 10/2011).
	TWA: 10 mg/m³ 8 hours.

Appropriate engineering controls

: If user operations generate dust, fumes, gas, vapor or mist, use process enclosures, local exhaust ventilation or other engineering controls to keep worker exposure to airborne contaminants below any recommended or statutory limits.

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

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.

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Section 8. Exposure controls/personal protection

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

Physical state

Color

: Liquid.

Odor pH Boiling point/boiling range

Not available.Not available.

: Orange-Pink

Flash point

Evaporation rate

Not available.Not available.

Evaporation rate

: <1 (ether (anhydrous) = 1)

Lower and upper explosive

(flammable) limits

: Not available.

Vapor pressure: Not available.Vapor density: >1 [Air = 1]Relative density: 1.0628Density lbs/gal: 8.85 lbs/gal

Gravity, °API : Estimated 2 @ 60 F

: Soluble in the following materials: cold water.

Section 10. Stability and reactivity

Reactivity

reactions

Solubility

: 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

uJ

: Under normal conditions of storage and use, hazardous reactions will not occur.

Conditions to avoid : No specific data.

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Section 10. Stability and reactivity

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

Product/ingredient name	Result	Species	Dose	Exposure
Diethylene glycol	LD50 Dermal	Rabbit	11890 mg/kg	-
	LD50 Dermal	Rabbit	11890 mg/kg	-
	LD50 Intraperitoneal	Rat	7.7 g/kg	-
	LD50 Oral	Mouse	13300 mg/kg	-
	LD50 Oral	Mouse	23700 mg/kg	-
	LD50 Oral	Rabbit	26.9 g/kg	-
	LD50 Oral	Rabbit	2690 mg/kg	-
	LD50 Oral	Rabbit	4400 mg/kg	-
	LD50 Oral	Rat	12565 mg/kg	-
	LD50 Oral	Rat	12565 mg/kg	-
	LDLo Oral	Human	0.23 g/kg	-
decanoic acid	LD50 Oral	Rat	>10 g/kg	-
2-diisopropylaminoethanol	LD50 Oral	Rat	860 mg/kg	-

Conclusion/Summary

: 2,2' -oxybisethanol: The major hazard from diethylene glycol occurs following the ingestion of relatively large single doses. Diethylene glycol can cause central nervous system depression and hydropic degenerative lesions in the liver and kidney. Anuria from tubular degeneration can prove fatal within a few days. In a 1937 case study, 105 fatalities occured among 353 people who ingested a solution of sulfanilamide in an aqueous mixture containing 72% diethylene glycol. The symptoms included nausea, dizziness, and pain in the kidney region. In a few days, oliguria and anuria, with death resulting from uremic poisoning. (Amdur, Doull and Klaasen, 1991). Autopsies revealed that the principal signs of intoxication were in the kidneys and liver (cortical necroses, nephrosis with severe vacuolization of the tubular epithelium, liver congestion and fatty degeneration. (AIHA, 1999)

Irritation/Corrosion

Product/ingredient name	Result	Species	Score	Exposure	Observation
Diethylene glycol	Eyes - Mild irritant	Rabbit	-	50 milligrams	-
	Skin - Mild irritant	Human	-	72 hours 112 milligrams Intermittent	-
	Skin - Mild irritant	Rabbit	-	500 milligrams	-
decanoic acid	Skin - Moderate irritant	Rabbit	-	24 hours 500 milligrams	-
	Skin - Severe irritant	Rabbit	-	24 hours 100 Percent	-
2-diisopropylaminoethanol	Skin - Mild irritant	Rabbit	-	500 milligrams	-

Skin: No additional information.Eyes: No additional information.Respiratory: No additional information.

Sensitization

Skin: No additional information.Respiratory: No additional information.

Mutagenicity

Conclusion/Summary :

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Section 11. Toxicological information

No additional information.

Carcinogenicity

Conclusion/Summary

: No additional information.

Reproductive toxicity

• • • • • • • • • • • • • • • • • • • •	Maternal toxicity	Fertility	Development toxin	Species	Dose	Exposure
Diethylene glycol	Positive	-	-	Mouse	Oral	-

Conclusion/Summary

Diethylene glycol: Reproductive toxicity was noted in a mouse continuous breeding study with large doses of diethylene glycol in drinking water. In addition, health effects including liver and kidney disease were noted in studies with pregnant rats receiving undiluted diethylene glycol. The relevance of these large dose studies to human health is not certain.

Teratogenicity

Conclusion/Summary: No additional information.

Specific target organ toxicity (single exposure)

Not available.

Specific target organ toxicity (repeated exposure)

Name		Route of exposure	Target organs
Diethylene glycol	Category 2	Oral	kidneys and liver

Aspiration hazard

Not available.

Information on the likely

routes of exposure

: Not available.

Potential acute health effects

Eye contact : Causes eye irritation.

Inhalation : Exposure to decomposition products may cause a health hazard. Serious effects may

be delayed following exposure.

Skin contact: Injection of pressurized hydrocarbons can cause severe permanent tissue damage.

Initial symptoms may be minor.

Ingestion: Harmful if swallowed. May be irritating to mouth, throat and stomach.

Symptoms related to the physical, chemical and toxicological characteristics

Eye contact : Adverse symptoms may include the following:

irritation watering redness

Inhalation: No specific data.Skin contact: No specific data.Ingestion: No specific data.

Potential chronic health effects

General : May cause damage to organs through prolonged or repeated exposure if swallowed.

Carcinogenicity
 No known significant effects or critical hazards.
 Mutagenicity
 No known significant effects or critical hazards.
 Teratogenicity
 No known significant effects or critical hazards.
 Developmental effects
 No known significant effects or critical hazards.
 Fertility effects
 No known significant effects or critical hazards.

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Section 11. Toxicological information

Section 12. Ecological information

Toxicity

Product/ingredient name	Result	Species	Exposure
, ,,	· •	Fish - Gambusia affinis - Adult Fish - Pimephales promelas	96 hours 96 hours

Conclusion/Summary : Not available.

Persistence and degradability

Conclusion/Summary: Not available.

Bioaccumulative potential

Product/ingredient name	LogPow	BCF	Potential
Diethylene glycol decanoic acid	-1.98 4.09	100	low high

Mobility in soil

Soil/water partition coefficient (Koc)

: Not available.

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

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Section 14. Transport information

Additional	-	-	-			
information						
information						

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.

Section 15. Regulatory information

U.S. Federal regulations

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

Clean Water Act (CWA) 311: Sodium Hydroxide

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.

SARA 302/304

Composition/information on ingredients

SARA 304 RQ : Not applicable.

SARA 311/312

Classification : Immediate (acute) health hazard

Delayed (chronic) health hazard

Composition/information on ingredients

Name	Fire hazard	Sudden release of pressure	Reactive	Immediate (acute) health hazard	Delayed (chronic) health hazard
Diethylene glycol	No.	No.	No.	Yes.	Yes.
decanoic acid	No.	No.	No.	Yes.	No.
2-diisopropylaminoethanol	Yes.	No.	No.	Yes.	No.

State regulations

Massachusetts : None of the components are listed. **New York** : None of the components are listed.

New Jersey : The following components are listed: DIISOPROPYLETHANOLAMINE; ETHANOL, 2-

[BIS(1-METHYLETHYL)AMINO]-

Pennsylvania : The following components are listed: ETHANOL, 2,2'-OXYBIS-

International regulations

International lists : Australia inventory (AICS): At least one component is not listed.

China inventory (IECSC): At least one component is not listed.

Japan inventory: At least one component is not listed. **Korea inventory**: At least one component is not listed. Malaysia Inventory (EHS Register): Not determined.

New Zealand Inventory of Chemicals (NZIoC): At least one component is not listed.

: At least one component is not listed in DSL but all such components are listed in NDSL.

Philippines inventory (PICCS): At least one component is not listed.

Taiwan inventory (CSNN): Not determined.

Canada inventory

: All components are listed or exempted.

EU Inventory

WHMIS (Canada) Class D-1B: Material causing immediate and serious toxic effects (Toxic).

Class D-2B: Material causing other toxic effects (Toxic).

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Section 16. Other information

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



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History

Date of issue/Date of revision

Key to abbreviations

: 6/9/2015.

: ATE = Acute Toxicity Estimate

BCF = Bioconcentration Factor

GHS = Globally Harmonized System of Classification and Labelling of Chemicals

IATA = International Air Transport Association

IBC = Intermediate Bulk Container

IMDG = International Maritime Dangerous Goods

LogPow = logarithm of the octanol/water partition coefficient

MARPOL 73/78 = International Convention for the Prevention of Pollution From Ships,

1973 as modified by the Protocol of 1978. ("Marpol" = marine pollution)

UN = United Nations

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