



# RADCOLUBE® FR282

## Safety Data Sheet

### MIL-PRF-83282D(1) Hydraulic Fluid, Fire Resistant, Synthetic Hydrocarbon Base

Issue date: 9/1/2010

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Version: 9.0

according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations

## SECTION 1: Identification

### 1.1. Identification

Trade name: RADCOLUBE® FR282  
Specification: MIL-PRF-83282D(1) Hydraulic Fluid, Fire Resistant, Synthetic Hydrocarbon Base  
Qualification Number (Date): NAWCADPAX Itr 4123 Ser 434200A/10.0040 (28 June 2010)  
(Recertification via DD form 1718 dated 14 March 2013)

NATO Code: H-537

National Stock Number(s) (NSN): 9150-00-149-7431 (Quart)  
9150-00-149-7432 (Gallon)  
9150-01-009-7709 (10 Gallon Pail or Drum)  
9150-00-180-6290 (55 Gallon Drum)

### 1.2. Recommended use and restrictions on use

Use of the substance/mixture: A synthetic hydrocarbon-base hydraulic fluid for use in the temperature range of -40° to 205°C (-40°F and 401°F)  
Use of the substance/mixture: Hydraulic fluids and additives  
Restrictions on use: Hydraulic fluids

### 1.3. Supplier

**Manufacturer**  
Radco Industries Inc.  
CAGE Code 6ZS16  
700 Kingsland Drive  
Batavia, Illinois 60510  
United States  
T (630) 232-7966  
[www.radcoind.com](http://www.radcoind.com)

**Manufacturer**  
Radco Industries Inc.  
CAGE Code 1RV4  
39W930 Midan Drive  
Elburn, Illinois 60147  
United States  
T (630) 232-7966  
[www.radcoind.com](http://www.radcoind.com)

### 1.4. Emergency telephone number

Emergency number: For Chemical Emergency Call CHEMTREC 24hr/day 7days/week  
Within USA and Canada: 1-800-424-9300  
Outside USA and Canada: +1 703-741-5970  
(collect calls accepted)

## SECTION 2: Hazard(s) identification

### 2.1. Classification of the substance or mixture

#### GHS US classification

Aspiration hazard Category 1 H304 May be fatal if swallowed and enters airways  
Full text of H statements : see section 16

### 2.2. GHS Label elements, including precautionary statements

#### GHS US labeling

Hazard pictograms (GHS US):



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Signal word (GHS US):	Danger
Hazard statements (GHS US):	H304 - May be fatal if swallowed and enters airways
Precautionary statements (GHS US):	P301+P310 - If swallowed: Immediately call a poison center or doctor. P331 - Do NOT induce vomiting. P405 - Store locked up. P501 - Dispose of contents/container to hazardous or special waste collection point, in accordance with local, regional, national and/or international regulation.

### 2.3. Other hazards which do not result in classification

No additional information available

### 2.4. Unknown acute toxicity (GHS US)

Not applicable

## SECTION 3: Composition/Information on ingredients

### 3.1. Substances

Not applicable

### 3.2. Mixtures

Name	Product identifier	%	GHS US classification
Synthetic hydrocarbon mixture* (Base Oil)	CAS-No.: Trade Secret	≥ 60	Asp. Tox. 1, H304

\*Chemical name, CAS number and/or exact concentration have been withheld as a trade secret

Full text of hazard classes and H-statements : see section 16

## SECTION 4: First-aid measures

### 4.1. Description of first aid measures

First-aid measures general:	Call a physician immediately.
First-aid measures after inhalation:	Remove person to fresh air and keep comfortable for breathing.
First-aid measures after skin contact:	Wash skin with plenty of water.
First-aid measures after eye contact:	Rinse eyes with water as a precaution.
First-aid measures after ingestion:	Do not induce vomiting. Call a physician immediately.

### 4.2. Most important symptoms and effects (acute and delayed)

Symptoms/effects after ingestion:	Risk of lung edema.
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### 4.3. Immediate medical attention and special treatment, if necessary

Treat symptomatically.

## SECTION 5: Fire-fighting measures

### 5.1. Suitable (and unsuitable) extinguishing media

Suitable extinguishing media:	Water spray. Dry powder. Foam. Carbon dioxide.
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### 5.2. Specific hazards arising from the chemical

Hazardous decomposition products in case of fire:	Toxic fumes may be released.
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### 5.3. Special protective equipment and precautions for fire-fighters

Protection during firefighting:	Do not attempt to take action without suitable protective equipment. Self-contained breathing apparatus. Complete protective clothing.
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### SECTION 6: Accidental release measures

#### 6.1. Personal precautions, protective equipment and emergency procedures

##### 6.1.1. For non-emergency personnel

Emergency procedures: Ventilate spillage area.

##### 6.1.2. For emergency responders

Protective equipment: Do not attempt to take action without suitable protective equipment. For further information refer to section 8: "Exposure controls/personal protection".

#### 6.2. Environmental precautions

Avoid release to the environment.

#### 6.3. Methods and material for containment and cleaning up

Methods for cleaning up: Take up liquid spill into absorbent material.

Other information: Dispose of materials or solid residues at an authorized site.

#### 6.4. Reference to other sections

For further information refer to section 13.

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### SECTION 7: Handling and storage

#### 7.1. Precautions for safe handling

Precautions for safe handling: Ensure good ventilation of the work station. Wear personal protective equipment.

Hygiene measures: Do not eat, drink or smoke when using this product. Always wash hands after handling the product.

#### 7.2. Conditions for safe storage, including any incompatibilities

Storage conditions: Store locked up. Store in a well-ventilated place. Keep cool.

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### SECTION 8: Exposure controls/personal protection

#### 8.1. Control parameters

No additional information available

#### 8.2. Appropriate engineering controls

Appropriate engineering controls: Ensure good ventilation of the work station.

Environmental exposure controls: Avoid release to the environment.

#### 8.3. Individual protection measures/Personal protective equipment

<b>Hand protection:</b>
Protective gloves
<b>Eye protection:</b>
Safety glasses
<b>Skin and body protection:</b>
Wear suitable protective clothing
<b>Respiratory protection:</b>
In case of insufficient ventilation, wear suitable respiratory equipment

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#### Personal protective equipment symbol(s):



## SECTION 9: Physical and chemical properties

### 9.1. Information on basic physical and chemical properties

Physical state:	Liquid
Appearance:	Liquid.
Color:	red
Odor:	slight
Odor threshold:	No data available
pH:	No data available
Melting point:	Not applicable
Freezing point:	≤ -69 °C ASTM D97 Pour Point
Boiling point:	No data available
Flash point:	221 °C ASTM D92 Flash Point by Cleveland Open Cup
Relative evaporation rate (butyl acetate=1):	No data available
Flammability (solid, gas):	Not applicable.
Vapor pressure:	< 0.01 mm Hg at 20°C (68°F)
Relative vapor density at 20 °C:	No data available
Relative density:	0.838 at 15.6°C (60°F) (Water = 1)
Solubility:	Material insoluble in water.
Partition coefficient n-octanol/water (Log Pow):	No data available
Auto-ignition temperature:	370 °C
Decomposition temperature:	No data available
Viscosity, kinematic:	14 – 15 mm <sup>2</sup> /s at 40°C (104°F)
Viscosity, dynamic:	No data available
Explosion limits:	No data available
Explosive properties:	No data available
Oxidizing properties:	No data available

### 9.2. Other information

No additional information available

## SECTION 10: Stability and reactivity

### 10.1. Reactivity

The product is non-reactive under normal conditions of use, storage and transport.

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#### 10.2. Chemical stability

Stable under normal conditions.

#### 10.3. Possibility of hazardous reactions

No dangerous reactions known under normal conditions of use.

#### 10.4. Conditions to avoid

None under recommended storage and handling conditions (see section 7).

#### 10.5. Incompatible materials

No additional information available

#### 10.6. Hazardous decomposition products

Under normal conditions of storage and use, hazardous decomposition products should not be produced.

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### SECTION 11: Toxicological information

#### 11.1. Information on toxicological effects

Acute toxicity (oral):	Not classified
Acute toxicity (dermal):	Not classified
Acute toxicity (inhalation):	Not classified
Skin corrosion/irritation:	Not classified
Carcinogenicity:	Not classified
Aspiration hazard:	May be fatal if swallowed and enters airways.
Viscosity, kinematic:	14 – 15 mm <sup>2</sup> /s at 40°C (104°F)
Symptoms/effects after ingestion:	Risk of lung edema.
STOT-single exposure:	Not classified
STOT-repeated exposure:	Not classified
Reproductive toxicity:	Not classified
Serious eye damage/irritation:	Not classified
Respiratory or skin sensitization:	Not classified
Germ cell mutagenicity:	Not classified

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### SECTION 12: Ecological information

#### 12.1. Toxicity

Ecology - general: The product is not considered harmful to aquatic organisms or to cause long-term adverse effects in the environment.

#### 12.2. Persistence and degradability

No additional information available

#### 12.3. Bioaccumulative potential

No additional information available

#### 12.4. Mobility in soil

No additional information available

#### 12.5. Other adverse effects

No additional information available

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### SECTION 13: Disposal considerations

#### 13.1. Disposal methods

Waste treatment methods: Dispose of contents/container in accordance with licensed collector's sorting instructions.

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**SECTION 14: Transport information**

In accordance with ADR / IMDG / IATA / ADN / RID

DOT	TDG	IMDG	IATA
<b>14.1. UN number</b>			
Not regulated for transport			
<b>14.2. Proper Shipping Name</b>			
Not applicable	Not applicable	Not applicable	Not applicable
<b>Transport document description</b>			
Not applicable	Not applicable	Not applicable	Not applicable
<b>14.3. Transport hazard class(es)</b>			
Not applicable	Not applicable	Not applicable	Not applicable
<b>14.4. Packing group</b>			
Not applicable	Not applicable	Not applicable	Not applicable
<b>14.5. Environmental hazards</b>			
Not applicable	Not applicable	Not applicable	Not applicable
No supplementary information available			

**14.6. Special precautions for user****DOT**

No data available

**TDG**

No data available

**IMDG**

No data available

**IATA**

No data available

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

Not applicable

**SECTION 15: Regulatory information****15.1. US Federal regulations**

Commercial status of components according to the United States Environmental Protection Agency's Toxic Substances Control Act (TSCA):

Name	CAS-No.	Listing	Commercial status	Flags
Synthetic hydrocarbon mixture		Not present	-	

This product or mixture is not known to contain a toxic chemical or chemicals in excess of the applicable de minimis concentration as specified in 40 CFR §372.38(a) subject to the reporting requirements of section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 and 40 CFR Part 372.

**15.2. International regulations****CANADA**

No additional information available

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#### EU-Regulations

No additional information available

#### National regulations

No additional information available

#### 15.3. US State regulations

California Proposition 65 - This product does not contain any substances known to the state of California to cause cancer, developmental and/or reproductive harm

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### SECTION 16: Other information

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Full text of H-phrases	
H304	May be fatal if swallowed and enters airways

Abbreviations and acronyms	
ADN	European Agreement concerning the International Carriage of Dangerous Goods by Inland Waterways
ADR	European Agreement concerning the International Carriage of Dangerous Goods by Road
ATE	Acute Toxicity Estimate
BCF	Bioconcentration factor
BLV	Biological limit value
BOD	Biochemical oxygen demand (BOD)
COD	Chemical oxygen demand (COD)
DMEL	Derived Minimal Effect level
DNEL	Derived-No Effect Level
EC-No.	European Community number
EC50	Median effective concentration
EN	European Standard
IARC	International Agency for Research on Cancer
IATA	International Air Transport Association
IMDG	International Maritime Dangerous Goods
LC50	Median lethal concentration
LD50	Median lethal dose
LOAEL	Lowest Observed Adverse Effect Level
NOAEC	No-Observed Adverse Effect Concentration
NOAEL	No-Observed Adverse Effect Level
NOEC	No-Observed Effect Concentration
OECD	Organisation for Economic Co-operation and Development
OEL	Occupational Exposure Limit
PBT	Persistent Bioaccumulative Toxic
PNEC	Predicted No-Effect Concentration
RID	Regulations concerning the International Carriage of Dangerous Goods by Rail
SDS	Safety Data Sheet
STP	Sewage treatment plant
ThOD	Theoretical oxygen demand (ThOD)
TLM	Median Tolerance Limit
VOC	Volatile Organic Compounds
CAS-No.	Chemical Abstract Service number
N.O.S.	Not Otherwise Specified
vPvB	Very Persistent and Very Bioaccumulative
ED	Endocrine disrupting properties

NFPA health hazard 1 - Materials that, under emergency conditions, can cause significant irritation.

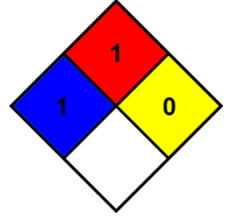
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NFPA fire hazard 1 - Materials that must be preheated before ignition can occur.  
NFPA reactivity 0 - Material that in themselves are normally stable, even under fire conditions.



#### Hazard Rating

Health 1 Slight Hazard - Irritation or minor reversible injury possible  
Flammability 1 Slight Hazard - Materials that must be preheated before ignition will occur. Includes liquids, solids and semi solids having a flash point above 200 F. (Class IIIB)  
Physical 0 Minimal Hazard - Materials that are normally stable, even under fire conditions, and will NOT react with water, polymerize, decompose, condense, or self-react. Non-Explosives.

This information relates to the specific material designated and may not be valid for such material used in combination with any other materials or in any particular process or for any particular purpose. Such information stated is to the best of Radco's knowledge and belief, accurate and reliable as of the date compiled. However, no representation, warranty or guarantee is made to its accuracy, reliability, or completeness, purchasers, users and distributors are not relying on any promise, representation, or recommendation made by Radco, and Radco does not accept liability for any loss or damage that may occur from the use of this information. Final determination of suitability of any material is the sole responsibility of the user. All material should be used with caution to guard against unknown hazards. Although certain hazards are described herein, Radco does not guarantee that these are the only hazards that exist.