# 1 PRODUCT AND COMPANY IDENTIFICATION

## PRODUCT INFORMATION

**Product Name:** Dow Brake Fluid 372LB

**Recommended Use:**

Brake fluid formulations. For use in automotive applications.

**External Keys:**

| | |
|---|---|
| PMRV10-314-US | PMRV |
| PMRV10-314-CN | PMRV |
| PMRV10-314-MX | PMRV |
| ACDelco GMW Brake and Clutch Fluid DOT 3 | Primary Tradename - Distributable Material |
| 19299818, 10-4090 | Distributable Material (Part #) |

## MANUFACTURER INFORMATION

**Manufacturer:** Dow Chemical Company

**Address:**

| | | | | | |
|---|---|---|---|---|---|
| 2030 Willard H. Dow Center | USA | MICHIGAN | 48674 | MIDLAND | MAILING |
| 1881 West Oak Parkway | USA | Georgia | 30062 | Marietta | Mailing |

**Communication Lines:**

| | | |
|---|---|---|
| Phone | 989-636-4400 | EMERGENCY |
| Phone | 989-636-6562 | INFO |
| Phone | 989-636-1940 | INFO |
| Phone | 800-258-2436 | Customer Information Center |
| Phone | 800-366-4740 | Customer Service |
| E-Mail | SDSQuestion@dow.com | *(No Translation Available) |
| Phone | 770-428-2684 | Information |
| Phone | 1-800-424-9300 | CHEMTREC 24 -hr Emergency |

**Emergency Phone:**

| | |
|---|---|
| Phone | 001-989 636 4400 |
| Phone | 0049(0)41 46 91 2333 |

## SUPPLIER INFORMATION

**Supplier:** GM of Canada - Oshawa

**Address:**

| | | | | | |
|---|---|---|---|---|---|
| 1908 Colonel Sam Drive | CAN | ON | L1H8P7 | Oshawa | Mailing |

# 2 INGREDIENT INFORMATION

## FORMULATION

**Ingredients:**

| Chemical Name | CAS Number | Prefix | Value | Unit | Exposure Limits |
|---|---|---|---|---|---|
| ETHANOL, 2-(2-(2-METHOXYETHOXY)ETHOXY)- | 112-35-6 | Range | 45 - 55 | %Wt | No |
| ETHANOL, 2-(2-(2-BUTOXYETHOXY)ETHOXY)- | 143-22-6 | Range | 10 - 20 | %Wt | No |
| METHOXY POLYETHYLENE GLYCOL 750 | 9004-74-4 | Range | 10 - 20 | %Wt | No |
| OXIRANE, METHYL-, POLYMER with OXIRANE, MONOBUTYL ETHER | 9038-95-3 | Range | 5 - 15 | %Wt | No |
| ETHANOL, 2-(2-BUTOXYETHOXY)- | 112-34-5 | < | 10 | %Wt | Yes |
| Poly(oxy-1,2-ethanediyl), .alpha.- | | | | | No |

## 2 INGREDIENT INFORMATION

### FORMULATION

**Ingredients:**

| Chemical Name | CAS Number | Prefix | Value | Unit | Exposure Limits |
|---|---|---|---|---|---|
| butyl-.omega.-hydroxy- | 9004-77-7 | < | 5 | %Wt | |
| 2,5,8,11-Tetraoxatridecan-13-ol | 23783-42-8 | < | 5 | %Wt | No |
| 1-PIPERAZINEETHANOL | 103-76-4 | < | 1 | %Wt | No |

## 3 HAZARDS IDENTIFICATION

**Hazards Overview:**

Emergency Overview
Color: Colorless to yellow
Physical State: Liquid.
Odor: Ether
Hazards of product: WARNING! May cause allergic skin reaction. Isolate area.

**Specific Hazards (Routes Of Exposure):**

| Exposure Routes | Exposure Duration | Observation |
|---|---|---|
| Eye Contact | General | May cause slight temporary eye irritation. Corneal injury is unlikely. |
| Skin Contact | General | Brief contact is essentially nonirritating to skin.<br>Skin Absorption: Prolonged skin contact is unlikely to result in absorption of harmful amounts.<br>Skin Sensitization: For the minor component(s): Skin contact may cause an allergic skin reaction. |
| Inhalation | General | Prolonged exposure is not expected to cause adverse effects. |
| Ingestion | General | Low toxicity if swallowed. Small amounts swallowed incidentally as a result of normal handling operations are not likely to cause injury; however, swallowing larger amounts may cause injury. |
| Eye Contact | Acute | Eye damage/eye irritation<br>May cause slight temporary eye irritation. Corneal injury is unlikely. |
| Skin Contact | Acute | Skin corrosion/irritation<br>Brief contact is essentially nonirritating to skin. |
| Inhalation | Acute | No relevant data found. |

**Medical Conditions Aggravated By Exposure:**

Not provided.

**Additional Health Hazard Data:**

Skin Sensitization: For the minor component(s): Skin contact may cause an allergic skin reaction.

## 4 FIRST AID MEASURES

**First Aid Procedures:**

First Aid responders should pay attention to self-protection and use the recommended protective clothing (chemical resistant gloves, splash protection). If potential for exposure exists refer to Section 8 for specific personal protective equipment.

**First Aid By::**

| | |
|---|---|
| Inhalation | Move person to fresh air; if effects occur, consult a physician. |
| Skin Contact | Remove material from skin immediately by washing with soap and plenty of water.<br>Remove contaminated clothing and shoes while washing. Seek medical attention if irritation persists.<br>Wash clothing before reuse. Discard items which cannot be decontaminated, including leather articles |

## 4 FIRST AID MEASURES

**First Aid By::**

| | |
|---|---|
| | such as shoes, belts and watchbands. |
| Eye Contact | Flush eyes thoroughly with water for several minutes. Remove contact lenses after the initial 1-2 minutes and continue flushing for several additional minutes. If effects occur, consult a physician, preferably an ophthalmologist. |
| Ingestion | If swallowed, seek medical attention. Do not induce vomiting unless directed to do so by medical personnel |

**Notes To Physician:**

Most important symptoms and effects, both acute and delayed
Aside from the information found under Description of first aid measures (above) and Indication of immediate medical attention and special treatment needed (below), no additional symptoms and effects are anticipated.
Indication of immediate medical attention and special treatment needed
No specific antidote. Treatment of exposure should be directed at the control of symptoms and the clinical condition of the patient.

## 5 FIRE FIGHTING MEASURES

**Product Flammability:**

Flammability (solid, gas) No

**Flash Point:**

| | |
|---|---|
| CC | No test data available |

**Explosive Limits:**

| | |
|---|---|
| Upper Explosive Limit (UEL) | Flammable Limits In Air: No test data available |
| Lower Explosive Limit (LEL) | Flammable Limits In Air: No test data available |

**Autoignition Temperature:**

No test data available

**Extinguishing Media:**

Suitable extinguishing media
Water fog or fine spray. Dry chemical fire extinguishers. Carbon dioxide fire extinguishers. Foam. Alcohol resistant foams (ATC type) are preferred. General purpose synthetic foams (including AFFF) or protein foams may function, but will be less effective.

**Non Suitable Extinguishing Media:**

Do not use direct water stream. May spread fire.

**Fire and Explosion Hazards:**

Hazardous Combustion Products: During a fire, smoke may contain the original material in addition to combustion products of varying composition which may be toxic and/or irritating. Combustion products may include and are not limited to: Carbon monoxide. Carbon dioxide.
Container may rupture from gas generation in a fire situation.
Violent steam generation or eruption may occur upon application of direct water stream to hot liquids.

**Special Fire Fighting Procedures:**

Keep people away. Isolate fire and deny unnecessary entry. Use water spray to cool fire exposed containers and fire affected zone until fire is out and danger of reignition has passed. Fight fire from protected location or safe distance. Consider the use of unmanned hose holders or monitor nozzles. Immediately withdraw all personnel from the area in case of rising sound from venting safety device or discoloration of the container. Burning liquids may be extinguished by dilution with water. Do not use direct water stream. May spread fire. Move container from fire area if this is possible without hazard. Burning liquids may be moved by flushing with water to protect

## 5 FIRE FIGHTING MEASURES

**Special Fire Fighting Procedures:**

personnel and minimize property damage.
Wear positive-pressure self-contained breathing
apparatus (SCBA) and protective fire fighting clothing (includes fire fighting helmet, coat, trousers, boots, and gloves). Avoid contact with this material during fire fighting operations. If contact is likely, change to full chemical resistant fire fighting clothing with self-contained breathing apparatus. If this is not available, wear full chemical resistant clothing with self-contained breathing apparatus and fight fire from a remote location. For protective equipment in post-fire or non-fire clean-up situations, refer to the relevant sections.

## 6 ACCIDENTAL RELEASE MEASURES

### PRECAUTIONS IN CASE OF ACCIDENTAL RELEASE

**Personal Precautions:**

Isolate area. Keep
unnecessary and unprotected personnel from entering the area. Refer to Section 7, Handling, for additional precautionary measures. Use appropriate safety equipment. For additional information, refer to Section 8, Exposure Controls and Personal Protection.

**Environmental Precautions:**

Prevent from entering into soil, ditches, sewers, waterways and/or
groundwater. See Section 12, Ecological Information.

### SPILL OR LEAK PROCEDURES

**Recovery:**

Small spills: Absorb with materials such
as: Sand. Vermiculite. Collect in suitable and properly labeled containers. Large spills: Contain spilled material if possible. Pump into suitable and properly labeled containers. See Section 13, Disposal Considerations, for additional information.

## 7 HANDLING AND STORAGE

### HANDLING

**Safe Handling Procedures:**

Avoid prolonged or repeated contact with skin. Wash thoroughly after handling.
Spills of these organic materials on hot fibrous insulations may lead to lowering of the autoignition temperatures possibly resulting in spontaneous combustion. See Section 8, EXPOSURE CONTROLS AND PERSONAL PROTECTION.
Spills of these organic materials on hot fibrous insulations may lead to lowering of
the autoignition temperatures possibly resulting in spontaneous combustion.

### STORAGE

**Storage Conditions:**

Store in the following material(s): Carbon steel. Stainless steel. Phenolic lined steel drums. Do not store in: Aluminum. Copper. Galvanized iron. Galvanized steel. See Section 10 for more specific information. Shelf life: Use within 12 Months
Storage temperature: 5 - 35 °C

## 8 EXPOSURE CONTROLS/PERSONAL PROTECTION

**Engineering Measures:**

Use local exhaust ventilation, or other engineering controls to maintain airborne levels below exposure limit requirements or guidelines. If there are no applicable exposure limit requirements or guidelines, general ventilation should be sufficient for most operations.

### EXPOSURE LIMITS

**Limit Values:**

| Chemical Name | CAS Number | Type | Value | Specification | Source |
|---|---|---|---|---|---|

## 8 EXPOSURE CONTROLS/PERSONAL PROTECTION

### EXPOSURE LIMITS

**Limit Values:**

| Chemical Name | CAS Number | Type | Value | Specification | Source |
|---|---|---|---|---|---|
| ETHANOL, 2-(2-BUTOXYETHOXY) - | 112-34-5 | GM OEG -TWA | 50ppm | - | GM Occupational Exposure Guidelines (OEG) |

### PERSONAL PROTECTIVE EQUIPMENT

**Personal Protective Equipment (PPE):**

| | |
|---|---|
| Eye Protection | Use safety glasses (with side shields). |
| Skin Protection | Use protective clothing chemically resistant to this material. Selection of specific items such as face shield, boots, apron, or full body suit will depend on the task. |
| Hand Protection | Use gloves chemically resistant to this material. Examples of preferred glove barrier materials include: Butyl rubber. Polyethylene. Ethyl vinyl alcohol laminate ("EVAL"). Examples of acceptable glove barrier materials include: Natural rubber ("latex"). Neoprene. Nitrile/butadiene rubber ("nitrile" or "NBR"). Polyvinyl chloride ("PVC" or "vinyl"). Viton. NOTICE: The selection of a specific glove for a particular application and duration of use in a workplace should also take into account all relevant workplace factors such as, but not limited to: Other chemicals which may be handled, physical requirements (cut/puncture protection, dexterity, thermal protection), potential body reactions to glove materials, as well as the instructions/specifications provided by the glove supplier. |
| Respiratory Protection | Respiratory protection should be worn when there is a potential to exceed the exposure limit requirements or guidelines. If there are no applicable exposure limit requirements or guidelines, wear respiratory protection when adverse effects, such as respiratory irritation or discomfort have been experienced, or where indicated by your risk assessment process. For most conditions no respiratory protection should be needed; however, if discomfort is experienced, use an approved air-purifying respirator. The following should be effective types of air-purifying respirators: Organic vapor cartridge. |

**Hygiene Measures:**

Use good personal hygiene. Do not consume or store food in the work area. Wash hands before smoking or eating.

## 9 PHYSICAL AND CHEMICAL PROPERTIES

### APPEARANCE

**Color:** Colorless to yellow

## 9 PHYSICAL AND CHEMICAL PROPERTIES

### APPEARANCE

**Odor:** Ether. Odor Threshold: No test data available.

**Comment:**

Liquid.

### PHYSICAL PROPERTIES

**pH Value:**

| | | | |
|---|---|---|---|
| Concentrate | = | 9.3 | FMVSS 116 |

**Changes of State:**

| | | | | |
|---|---|---|---|---|
| Melting/Freezing Point | | | | No test data available |
| Boiling Point | = | 487 | °F | (760 mmHg) 253 °C. FMVSS 116 Equilibrium Reflux Boiling Point, dry. |
| Boiling Point | = | 302 | °F | (760 mmHg) 150 °C. FMVSS 116 Equilibrium Reflux Boiling Point, wet. |

**Vapor Pressure:**

No test data available

**Vapor Density:**

No test data available

**Evaporation Rate:**

No test data available

**Specific Gravity:**

| | | |
|---|---|---|
| > | 1 | Assigned by General Motors Technical Review. |

**Solubility:**

| | |
|---|---|
| Water | No test data available |

**Viscosity:**

| | | | | |
|---|---|---|---|---|
| Dynamic viscosity | | | | No test data available |
| Kinematic Viscosity | = | 2.2 | $mm^2/s$ | Literature |

**VOC:**

| | |
|---|---|
| VOC | No test data available |

## 10 STABILITY AND REACTIVITY

### STABILITY INFORMATION

**Stability Under Normal Conditions:** Stable

**Conditions to Avoid:**

Do not distill to dryness. Product can oxidize at elevated temperatures.
Generation of gas during decomposition can cause pressure in closed systems.

**Incompatible Materials:**

Avoid contact with: Strong acids. Strong bases. Strong oxidizers.

**Hazardous Polymerization:**

Polymerization will not occur.

**Comment:**

Thermally stable at typical use temperatures.

### HAZARDOUS DECOMPOSITION

**Reactions:**

| Type of Reaction | Reaction Products |
|---|---|
| Thermal Decomposition | Hazardous Combustion Products: During a fire, smoke may contain the original material in addition to combustion products of varying composition which may be toxic and/or irritating. |

## 10 STABILITY AND REACTIVITY

### HAZARDOUS DECOMPOSITION

**Reactions:**

| Type of Reaction | Reaction Products |
|---|---|
| Decomposition | Combustion<br>products may include and are not limited to: Carbon monoxide. Carbon dioxide.<br>Decomposition Temperature: No test data available<br>Decomposition products depend upon temperature, air supply and the presence of other materials.<br>Decomposition products can include and are not limited to: Aldehydes. Ketones. Organic acids. |

**Comment:**

No dangerous reaction known under conditions of normal use.

## 11 TOXICOLOGICAL INFORMATION

### SCIENTIFIC OBSERVATIONS

#### LETHAL LIMIT VALUES

**Product Data:**

| Exposure Routes | Type | Prefix | Value | Unit | Species | Comment |
|---|---|---|---|---|---|---|
| Ingestion | LD50 | > | 5600 | mg/kg | Rat | For the component (s) tested |
| Skin Contact | LD50 | > | 3480 | mg/kg | Rat | For the component (s) tested |

### CLASSIFICATION OF INGREDIENTS

**Carcingenicity:**

No relevant data found.
California Proposition 65 (Safe Drinking Water and Toxic Enforcement Act of 1986)
WARNING: This product contains a chemical(s) known to the State of California to cause cancer.

**Reproductive Effects:**

For the major component(s): Has been toxic to the fetus in laboratory animals at doses toxic to the mother.
Developmental Toxicity
For the major component(s): Has been toxic to the fetus in laboratory animals at doses toxic to the mother. For the component(s) tested: Did not cause birth defects in laboratory animals.
Reproductive Toxicity
The data presented are for the following material: Diethylene glycol monobutyl ether In animal studies, did not interfere with reproduction. However, body weights of newborn animals were decreased.
Genetic Toxicology
For the component(s) tested: In vitro genetic toxicity studies were negative. Animal genetic toxicity studies were negative.
California Proposition 65 (Safe Drinking Water and Toxic Enforcement Act of 1986)
WARNING: This product contains a chemical(s) known to the State of California to cause birth defects or other reproductive harm.

**Comment:**

Effects of Repeated Exposure: Based on information for component(s): In animals, effects have been reported on the following organs: Kidney. Liver. Testes. Blood.

## 12 ECOLOGICAL INFORMATION

### ENVIRONMENTAL IMPACT

**Comment:**

Additional ecological data for individual ingredients is available from the MSDS Processing Center.

## 13 DISPOSAL CONSIDERATIONS

**Waste Disposal Information:**

DO NOT DUMP INTO ANY SEWERS, ON THE GROUND, OR INTO ANY BODY OF WATER. All disposal practices must be in compliance with all Federal, State/Provincial and local laws and regulations. Regulations may vary in different locations. Waste characterizations and compliance with applicable laws are the responsibility solely of the waste generator. AS YOUR SUPPLIER, WE HAVE NO CONTROL OVER THE MANAGEMENT PRACTICES OR MANUFACTURING PROCESSES OF PARTIES HANDLING OR USING THIS MATERIAL. THE INFORMATION PRESENTED HERE PERTAINS ONLY TO THE PRODUCT AS SHIPPED IN ITS INTENDED CONDITION AS DESCRIBED IN MSDS SECTION: Composition Information. FOR UNUSED & UNCONTAMINATED PRODUCT, the preferred options include sending to a licensed, permitted: Incinerator or other thermal destruction device.

Treatment and disposal methods of used packaging: Empty containers should be recycled or otherwise disposed of by an approved waste management facility. Waste characterizations and compliance with applicable laws are the responsibility solely of the waste generator. Do not re-use containers for any purpose.

## 14 TRANSPORT INFORMATION

**DOT Information:**

DOT Non-Bulk
NOT REGULATED
DOT Bulk
NOT REGULATED

**Comment:**

IMDG
NOT REGULATED
ICAO/IATA
NOT REGULATED

This information is not intended to convey all specific regulatory or operational requirements/information relating to this product. Additional transportation system information can be obtained through an authorized sales or customer service representative. It is the responsibility of the transporting organization to follow all applicable laws, regulations and rules relating to the transportation of the material.

## 15 REGULATORY INFORMATION

### LABELLING

**Hazard Codes:**

| | |
|---|---|
| NFPA Health | 2 |
| NFPA Flammability | 0 |
| NFPA Reactivity | 0 |

**Comment:**

NFPA assigned by General Motors Technical Review.

### NATIONAL REGULATIONS

**SARA 311/312:** Yes
**SARA 313:** Yes
**Immediate Health:** Yes
**Delayed Health:** Yes
**Fire:** No
**Sudden Pressure Release:** No
**Reactive:** No
**Other Regulation:**

| | |
|---|---|
| OSHA Hazard Communication Standard: | This product is a "Hazardous Chemical" as defined by the OSHA Hazard Communication Standard, 29 |

## 15 REGULATORY INFORMATION

### NATIONAL REGULATIONS

**Other Regulation:**

| | |
|---|---|
| | CFR 1910.1200. |
| Superfund Amendments and Reauthorization Act of 1986 Title III (Emergency Planning and Community Right-to-Know Act of 1986) Section 313: | This product contains the following substances which are subject to the reporting requirements of Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 and which are listed in 40 CFR 372.<br>Component CAS # Amount<br>Triethylene glycol monomethyl ether (112-35-6) > 45.0 - < 55.0 %<br>Triethylene glycol monobutyl ether (143-22-6) > 10.0 - < 20.0 %<br>Diethylene glycol monobutyl ether (112-34-5) < 10.0 % |
| Toxic Substances Control Act: | All components of this product are on the TSCA Inventory or are exempt from TSCA Inventory requirements under 40 CFR 720.30 |

### STATE/LOCAL REGULATIONS

**Comment:**

Pennsylvania (Worker and Community Right-To-Know Act): Pennsylvania Hazardous Substances List and/or Pennsylvania Environmental Hazardous Substance List:
The following product components are cited in the Pennsylvania Hazardous Substance List and/or the Pennsylvania Environmental Substance List, and are present at levels which require reporting.
Component CAS # Amount
Triethylene glycol monomethyl ether (112-35-6) > 45.0 - < 55.0 %
Triethylene glycol monobutyl ether (143-22-6) > 10.0 - < 20.0 %
Diethylene glycol monobutyl ether (112-34-5) < 10.0 %
Pennsylvania (Worker and Community Right-To-Know Act): Pennsylvania Special Hazardous Substances List:
To the best of our knowledge, this product does not contain chemicals at levels which require reporting under this statute.
California Proposition 65 (Safe Drinking Water and Toxic Enforcement Act of 1986)
WARNING: This product contains a chemical(s) known to the State of California to cause cancer.
California Proposition 65 (Safe Drinking Water and Toxic Enforcement Act of 1986)
WARNING: This product contains a chemical(s) known to the State of California to cause birth defects or other reproductive harm.
US. New Jersey Worker and Community Right-to-Know Act (New Jersey Statute Annotated Section 34:5A-5)
The following product components are cited in the New Jersey Environmental Hazardous and Workplace Hazardous Substance Lists: Triethylene glycol monomethyl ether (112-35-6) > 45.0 - < 55.0 %
Triethylene glycol monobutyl ether (143-22-6) > 10.0 - < 20.0 %
Diethylene glycol monobutyl ether (112-34-5) < 10.0 %
Section 34:5A-5)
The following product components are cited in the New Jersey Special Hazardous Substance List: To the best of our knowledge, this product does not contain chemicals at levels which require reporting under this statute.

## 16 OTHER INFORMATION

**Comments:**

The Dow Chemical Company encourages and expects you to read and understand the entire (M)SDS, as there is important information throughout the document. We expect you to follow the precautions

## 16 OTHER INFORMATION

**Comments:**

identified in this document unless your use conditions would necessitate other appropriate methods or actions.

**Additional Comments:**

This product is a "Hazardous Chemical" as defined by the OSHA Hazard Communication Standard, 29 CFR 1910.1200.

Additional Exposure Limits: GM Occupational Exposure Guidelines (OEG) and State-TWA's were provided by General Motors.