SAFETY DATA SHEET

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Pyroil™ DEICER
PYDI11.5

1. IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND OF THE COMPANY/UNDERTAKING

Ashland P.O. Box 2219 Columbus, OH 43216	Regulatory Information Number Telephone Emergency telephone number	1-800-325-3751 614-790-3333 1-800-ASHLAND (1-800-274-5263)
Product name	Pyroil™ DEICER	
Product code	PYDI11.5	

2. HAZARDS IDENTIFICATION

Emergency Overview

Appearance: aerosol

WARNING! EXTREMELY FLAMMABLE LIQUID AND VAPOR. VAPOR MAY CAUSE FLASH FIRE. CONTENTS UNDER PRESSURE. MAY AFFECT THE CENTRAL NERVOUS SYSTEM CAUSING DIZZINESS, HEADACHE OR NAUSEA. MAY CAUSE EYE IRRITATION. PROLONGED OR REPEATED CONTACT MAY DRY THE SKIN AND CAUSE IRRITATION AND BURNS. HARMFUL IF SWALLOWED. MAY CAUSE BLINDNESS.

Potential Health Effects

Exposure routes

Inhalation, Skin absorption, Skin contact, Eye Contact, Ingestion

Eye contact

Can cause eye irritation. Symptoms include stinging, tearing, redness, and swelling of eyes.

Skin contact

May cause slight skin irritation. Prolonged or repeated contact may dry the skin. Symptoms may include redness, burning, and drying and cracking of skin, skin burns, and other skin damage.

Ingestion

Swallowing this material may be harmful. Liver, kidney and brain damage in humans has resulted from swallowing lethal or near-lethal amounts of ethylene glycol.

Inhalation

Breathing aerosol and/or mist is possible when material is sprayed. Aerosol and mist may present a greater risk of injury because more material may be present in the air than from vapor alone. Breathing small amounts of this material during normal handling is not likely to cause harmful effects. Breathing large amounts may be harmful. Symptoms are not expected at air concentrations below the recommended exposure limits, if applicable (see Section 8.).

Aggravated Medical Condition

Preexisting disorders of the following organs (or organ systems) may be aggravated by exposure to this material:, Skin, lung (for example, asthma-like conditions), Liver, Kidney, Central nervous system, pancreas, Heart, Exposure to this material may aggravate any preexisting condition sensitive to a decrease in available oxygen, such as chronic lung disease, coronary artery disease or anemias.

Symptoms

Signs and symptoms of exposure to this material through breathing, swallowing, and/or passage of the material through the skin may include:, stomach or intestinal upset (nausea, vomiting, diarrhea), irritation (nose, throat, airways), Cough, central nervous system excitation (giddiness, liveliness, light-headed feeling) followed by central nervous system depression (dizziness, drowsiness, weakness, fatigue, nausea, headache, unconsciousness) and other central nervous system effects, muscle cramps, pain in the abdomen and lower back, Blurred vision, Shortness of breath, cyanosis (causes blue coloring of the skin and nails from lack of oxygen), lung edema (fluid buildup in the lung tissue), acute kidney failure (sudden slowing or stoppingof urine production), liver damage, visual impairment (including blindness), Convulsions, coma

Target Organs

Exposure to lethal concentrations of methanol has been shown to cause damage to organs including liver, kidneys, pancreas, heart, lungs and brain. Although this rarely occurs, survivors of severe intoxication may suffer from permanent neurological damage., Overexposure to this material (or its components) has been suggested as a cause of the following effects in laboratory animals:, reproductive effects, kidney damage, liver damage, central nervous system damage, Overexposure to this material (or its components) has been suggested as a cause of the following effects in humans:, kidney damage, liver damage, visual impairment

Carcinogenicity

This material is not listed as a carcinogen by the International Agency for Research on Cancer (IARC), the National Toxicology Program (NTP), or the Occupational Safety and Health Administration (OSHA).

Reproductive hazard

Methanol has caused birth defects in laboratory animals, but only when inhaled at extremely high vapor concentrations. The relevance of this finding to humans is uncertain., Ethylene glycol has caused birth defects in animal studies at high oral doses. However, it did not cause harm to the pregnant animal or to the fetus when applied to the skin of the pregnant animal.

3. COMPOSITION/INFORMATION ON INGREDIENTS

Hazardous Components	CAS-No. / Trade Secret No.	Concentration
METHANOL	67-56-1	>=60-<70%
ETHYLENE GLYCOL	107-21-1	>=5-<10%
CARBON DIOXIDE	124-38-9	>=1.5-<5%

4. FIRST AID MEASURES

Eyes

If symptoms develop, immediately move individual away from exposure and into fresh air. Flush eyes gently with water for at least 15 minutes while holding eyelids apart; seek immediate medical attention.

Skin

Remove contaminated clothing. Wash exposed area with soap and water. If symptoms persist, seek medical attention. Launder clothing before reuse.

Ingestion

Seek medical attention. If individual is drowsy or unconscious, do not give anything by mouth; place individual on the left side with the head down. Contact a physician, medical facility, or poison control center for advice about whether to induce vomiting. If possible, do not leave individual unattended.

Inhalation

If symptoms develop, immediately move individual away from exposure and into fresh air. Seek immediate medical attention; keep person warm and quiet. If person is not breathing, begin artificial respiration. If breathing is difficult, administer oxygen.

Notes to physician

Hazards: This product contains methanol which can cause intoxication and central nervous system depression. Methanol is metabolized to formic acid and formaldehyde. These metabolites can cause metabolic acidosis, visual disturbances and blindness. Since metabolism is required for these toxic symptoms, their onset may be delayed from 6 to 30 hours following ingestion. Ethanol competes for the same metabolic pathway and has been used to prevent methanol metabolism. Ethanol administration is indicated in symptomatic patients or at blood methanol concentrations above 20 ug/dl. Methanol is effectively removed by hemodialysis. Effects of acute ethylene glycol poisoning appear in three fairly distinct stages. The initial stage occurs shortly after exposure, lasts 6-12 hours, and is characterized by central nervous system effects (transient exhilaration, nausea, vomiting, and in severe cases, coma, convulsions, and possible death). The second stage lasts from 12-36 hours after exposure and is initiated by the onset of coma. This phase is characterized by tachypnia, tachycardia, mild hypotension, cyanosis, and in severe cases, pulmonary edema, bronchopneumonia, cardiac enlargement, and congestive failure. The final stage occurs 24-72 post-exposure and is characterized by renal failure, ranging from a mild increase in blood urea nitrogen and creatinine followed by recovery, to complete anuria with acute tubular necrosis that can lead to death. Oxaluria is found in most cases. The most significant laboratory finding in ethylene glycol intoxication is severe metabolic acidosis.

Treatment: This product contains ethylene glycol. Ethanol decreases the metabolism of ethylene glycol to toxic metabolites. Ethanol should be administered as soon as possible in cases of severe poisoning since the elimination half-life of ethylene glycol is 3 hours. If medical care will be delayed several hours, give the patient three to four 1-ounce oral "shots" of 86-proof or higher whiskey before or during transport to the hospital. Fomepizole (4-methylpyrazole) is an effective antagonist of alcohol dehydrogenase, and as such, may be used as an antidote in the treatment of ethylene glycol poisoning. Hemodialysis effectively removes ethylene glycol and its metabolites from the body.

5. FIREFIGHTING MEASURES

Suitable extinguishing media

Water spray, Carbon dioxide (CO2), Alcohol-resistant foam, Dry powder

Hazardous combustion products

Alcohols, Aldehydes, carbon dioxide and carbon monoxide, ethers, toxic fumes

Precautions for fire-fighting

Wear full firefighting turn-out gear (full Bunker gear), and respiratory protection (SCBA). Use water spray to cool fire exposed containers and structures until fire is out if it can be done with minimal risk. Avoid spreading burning material with water used for cooling purposes.

NFPA Flammable and Combustible Liquids Classification
not applicable

6. ACCIDENTAL RELEASE MEASURES

Personal precautions
For personal protection see section 8. Persons not wearing protective equipment should be excluded from area of spill until clean-up has been completed.

Environmental precautions
Do not flush into surface water or sanitary sewer system.

Methods for cleaning up
Remove all sources of ignition. Suppress (knock down) gases/vapours/mists with a water spray jet. Soak up with inert absorbent material.

Other information
Comply with all applicable federal, state, and local regulations.

7. HANDLING AND STORAGE

Handling
Containers of this material may be hazardous when emptied. Since emptied containers retain product residues (vapor, liquid, and/or solid), all hazard precautions given in the data sheet must be observed.

Storage
Store in a cool, dry, ventilated area. Maximum recommended storage temperature 50 degrees C (122 degrees F).

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Exposure Guidelines

METHANOL		**67-56-1**
ACGIH	time weighted average	200 ppm
ACGIH	Short term exposure limit	250 ppm

NIOSH	Recommended exposure limit (REL):	200 ppm	
NIOSH	Recommended exposure limit (REL):	260 mg/m3	
NIOSH	Short term exposure limit	250 ppm	
NIOSH	Short term exposure limit	325 mg/m3	
OSHA Z1	Permissible exposure limit	200 ppm	
OSHA Z1	Permissible exposure limit	260 mg/m3	
ETHYLENE GLYCOL		**107-21-1**	
ACGIH	Ceiling Limit Value:	100 mg/m3	Aerosol.
CARBON DIOXIDE		**124-38-9**	
ACGIH	time weighted average	5,000 ppm	
ACGIH	Short term exposure limit	30,000 ppm	
NIOSH	Recommended exposure limit (REL):	5,000 ppm	
NIOSH	Recommended exposure limit (REL):	9,000 mg/m3	
NIOSH	Short term exposure limit	30,000 ppm	
NIOSH	Short term exposure limit	54,000 mg/m3	
OSHA Z1	Permissible exposure limit	5,000 ppm	
OSHA Z1	Permissible exposure limit	9,000 mg/m3	

General advice

These recommendations provide general guidance for handling this product. Personal protective equipment should be selected for individual applications and should consider factors which affect exposure potential, such as handling practices, chemical concentrations and ventilation. It is ultimately the responsibility of the employer to follow regulatory guidelines established by local authorities.

Exposure controls

Provide sufficient mechanical (general and/or local exhaust) ventilation to maintain exposure below exposure guidelines (if applicable) or below levels that cause known, suspected or apparent adverse effects.

Eye protection

Wear chemical splash goggles when there is the potential for exposure of the eyes to liquid, vapor or mist.

Skin and body protection

Wear normal work clothing including long pants, long-sleeved shirts and foot covering to prevent direct contact of the product with the skin. Launder clothing before reuse. If skin irritation develops, contact your facility health and safety professional or your local safety equipment supplier to determine the proper personal protective equipment for your use.
Wear resistant gloves (consult your safety equipment supplier).

Respiratory protection

Respiratory protection is not required under normal conditions of use.

9. PHYSICAL AND CHEMICAL PROPERTIES

Physical state	aerosol
Boiling point/boiling range	148.5 °F / 64.7 °C @ 1,013.25 hPa Value for Component
Flash point	54 °F / 12 °C Calculated Flash Point
Lower explosion limit/Upper explosion limit	3.2 %(V) / 36 %(V) Calculated Explosive Limit
Vapour pressure	169.316 hPa @ 77 °F / 25 °C Value for Component
Density	0.7972 g/cm3 @ 60.01 °F / 15.56 °C

10. STABILITY AND REACTIVITY

Stability

Stable.

Conditions to avoid

Heat, flames and sparks.

Incompatible products

Aldehydes, Alkali metals, Alkaline earth metals, Lead, sodium, Strong acids, strong bases, Strong oxidizing agents, Sulphur compounds, Zinc, Peroxides

Hazardous decomposition products

Aldehydes, carbon dioxide and carbon monoxide, formaldehyde-like, Organic acids, ketones

Hazardous reactions

Product will not undergo hazardous polymerization.

11. TOXICOLOGICAL INFORMATION

Acute oral toxicity

Acute oral toxicity - Product	: no data available

Acute oral toxicity - Components

METHANOL	: LD L0: 300 mg/kg Species: Human
ETHYLENE GLYCOL	: LD 50: 6,140 mg/kg Species: Rat

Acute inhalation toxicity

Acute inhalation toxicity - Product	: no data available

Acute inhalation toxicity - Components

METHANOL	: LC 50: 64000 ppm Exposure time: 4 h Species: Rat
	Remarks: Slightly toxic by inhalation

Acute dermal toxicity

Acute dermal toxicity - Product	: no data available

Acute dermal toxicity - Components

METHANOL	: LD 50: 12,800 mg/kg Species: Rabbit
ETHYLENE GLYCOL	: LD 50: 9,530 mg/kg Species: Rabbit

Acute toxicity (other routes of administration)

Acute toxicity (other routes of administration)	: no data available

12. ECOLOGICAL INFORMATION

Biodegradability

Biodegradability - Product	: no data available

Biodegradability - Components

METHANOL	: 99 % Method: OECD Test Guideline 301D

Bioaccumulation

Bioaccumulation - Product	:	no data available

Bioaccumulation - Components

METHANOL	:	Species: Green algae (Chlorella fusca vacuolata) Exposure time: 24 h Concentration: 0.05 mg/l Bioconcentration factor (BCF): 28,400 Method: Static
ETHYLENE GLYCOL	:	Species: Crayfish (Procambarus) Exposure time: 61 d Concentration: 1000 mg/l Bioconcentration factor (BCF): 0.27 Method: Flow through

Ecotoxicity effects

Toxicity to fish

Toxicity to fish - Product	:	no data available

Toxicity to fish - Components

METHANOL	:	LC 50: 18,000 - 20,000 mg/l Exposure time: 96 h Species: Rainbow trout,donaldson trout (Oncorhynchus mykiss) Test Type: static test
ETHYLENE GLYCOL	:	LC 50: 27,540 mg/l Exposure time: 96 h Species: Bluegill (Lepomis macrochirus) Method: Static Remarks: Mortality
		LC 50: 8,050 mg/l Exposure time: 96 h Species: Fathead minnow (Pimephales promelas)

Toxicity to daphnia and other aquatic invertebrates

Toxicity to daphnia and other aquatic invertebrates - Product	:	no data available

Toxicity to daphnia and other aquatic invertebrates - Components

METHANOL	:	EC 50: > 10,000 mg/l Exposure time: 48 h Species: Water flea (Daphnia magna) Test Type: static test

ETHYLENE GLYCOL	:	LC 50: > 10,000 mg/l Exposure time: 48 h Species: Water flea (Daphnia magna) Test Type: static test

Toxicity to algae

Toxicity to algae - Product	:	no data available

Toxicity to bacteria

Toxicity to bacteria - Product	:	no data available

13. DISPOSAL CONSIDERATIONS

Waste disposal methods

Dispose of in accordance with all applicable local, state and federal regulations.

14. TRANSPORT INFORMATION

REGULATION

ID NUMBER	PROPER SHIPPING NAME	*HAZARD CLASS	SUBSIDIARY HAZARDS	PACKING GROUP	MARINE POLLUTANT / LTD. QTY.
U.S. DOT - ROAD					
	ORM-D, CONSUMER COMMODITY	ORM			

U.S. DOT - RAIL

	ORM-D, CONSUMER COMMODITY	ORM

U.S. DOT - INLAND WATERWAYS

	ORM-D, CONSUMER COMMODITY	ORM

TRANSPORT CANADA - ROAD

UN	1950	AEROSOLS	2.1

TRANSPORT CANADA - RAIL

UN	1950	AEROSOLS	2.1

TRANSPORT CANADA - INLAND WATERWAYS

UN	1950	AEROSOLS	2.1

INTERNATIONAL MARITIME DANGEROUS GOODS

UN	1950	AEROSOLS	2.1

INTERNATIONAL AIR TRANSPORT ASSOCIATION - CARGO

UN	1950	Aerosols, flammable	2.1

INTERNATIONAL AIR TRANSPORT ASSOCIATION - PASSENGER

UN	1950	Aerosols, flammable	2.1

MEXICAN REGULATION FOR THE LAND TRANSPORT OF HAZARDOUS MATERIALS AND WASTES

UN	1950	AEROSOLES	2

***ORM = ORM-D, CBL = COMBUSTIBLE LIQUID**

Dangerous goods descriptions (if indicated above) may not reflect quantity, end-use or region-specific exceptions that can be applied. Consult shipping documents for descriptions that are specific to the shipment.

15. REGULATORY INFORMATION

California Prop. 65

WARNING: This product contains a chemical known to the State of California to cause birth defects or other reproductive harm.	METHANOL

SARA Hazard Classification
SARA 311/312 Classification
Fire Hazard
Acute Health Hazard
Sudden Release of Pressure Hazard

SARA 313 Component(s)

METHANOL	62.45 %
ETHYLENE GLYCOL	5.92 %

New Jersey RTK Label Information

METHANOL	67-56-1
WATER	7732-18-5
ETHYLENE GLYCOL	107-21-1
CARBON DIOXIDE	124-38-9

Pennsylvania RTK Label Information

METHANOL	67-56-1
WATER	7732-18-5
ETHYLENE GLYCOL	107-21-1
CARBON DIOXIDE	124-38-9

Notification status

US. Toxic Substances Control Act	y (positive listing)
Canada. Canadian Environmental Protection Act (CEPA). Domestic Substances List (DSL). (Can. Gaz. Part II, Vol. 133)	y (positive listing)
Australia. Industrial Chemical (Notification and Assessment) Act	y (positive listing)
New Zealand. Inventory of Chemicals (NZIoC), as published by ERMA New Zealand	y (positive listing)
Japan. Kashin-Hou Law List	y (positive listing)
Korea. Toxic Chemical Control Law (TCCL) List	y (positive listing)
Philippines. The Toxic Substances and Hazardous and Nuclear Waste Control Act	y (positive listing)
China. Inventory of Existing Chemical Substances	y (positive listing)

Reportable quantity - Product

US. EPA CERCLA Hazardous Substances (40 CFR 302)	8005 lbs

Reportable quantity-Components

METHANOL	67-56-1	5000 lbs

	HMIS	NFPA
Health	2*	2
Flammability	3	3
Physical hazards	0	
Instability		0
Specific Hazard	--	--

16. OTHER INFORMATION

The information accumulated herein is believed to be accurate but is not warranted to be whether originating with the company or not. Recipients are advised to confirm in advance of need that the information is current, applicable, and suitable to their circumstances. This MSDS has been prepared by Ashland's Environmental Health and Safety Department (1-800-325-3751).