



BPO HARDENER

Safety Data Sheet

according to the Hazardous Products Regulation (February 11, 2015)

DRIVING SURFACE PERFECTION

Issue date: 08-13-2019

Revision date: 04-22-2020

Supersedes: 08-13-2019

Version: 2.0

SECTION 1: Identification

1.1. Product identifier

Product form : Mixture
Trade name : BPO HARDENER
Type of product : Hardener
Product group : BPO Hardener

1.2. Recommended use and restrictions on use

Recommended use : Hardener

1.3. Supplier

U-POL CANADA LIMITED
P.O. Box P.O. BOX 48600
BC V7X 1T2 VANCOUVER - CANADA
T 1-800-424-9300
technicalsupport@u-pol.com - www.u-pol.com

1.4. Emergency telephone number

Emergency number : 1-800-424-9300 (CHEMTREC)

SECTION 2: Hazard identification

2.1. Classification of the substance or mixture

Classification (GHS CA)

Organic Peroxide Category E H242
Serious eye damage/eye irritation Category 2 H319
Skin sensitization, Category 1 H317

Full text of H statements : see section 16

2.2. GHS Label elements, including precautionary statements

GHS CA labeling

Hazard pictograms (GHS CA) :



Signal word (GHS CA) : Warning

Hazard statements (GHS CA) : H242 - Heating may cause a fire
H317 - May cause an allergic skin reaction
H319 - Causes serious eye irritation

Precautionary statements (GHS CA) : P210 - Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.
P220 - Keep away from clothing and other combustible materials.
P234 - Keep only in original container.
P261 - Avoid breathing fume, vapors.
P264 - Wash hands thoroughly after handling.
P272 - Contaminated work clothing should not be allowed out of the workplace.
P280 - Wear eye protection, protective clothing, protective gloves.
P302+P352 - IF ON SKIN: Wash with plenty of water.
P305+P351+P338 - IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P333+P313 - If skin irritation or rash occurs: Get medical advice/attention.
P337+P313 - If eye irritation persists: Get medical advice/attention.
P363 - Wash contaminated clothing before reuse.
P410 - Protect from sunlight.
P411+P235 - Store at temperatures not exceeding 30°C / 86 F. Keep cool.
P420 - Store separately.
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

No additional information available

2.4. Unknown acute toxicity (GHS CA)

No data available

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SECTION 3: Composition/Information on ingredients

3.1. Substances

Not applicable

3.2. Mixtures

Name	Chemical name / Synonyms	Product identifier	%	Classification (GHS CA)
dibenzoyl peroxide, benzoyl peroxide	dibenzoyl peroxide, benzoyl peroxide	(CAS-No.) 94-36-0	45 – 60	Org. Perox. B, H241 Eye Irrit. 2, H319 Skin Sens. 1, H317 Aquatic Acute 1, H400 Aquatic Chronic 1, H410
ethanediol, ethylene glycol	ethanediol, ethylene glycol 1,2-dihydroxyethane / 1,2-Ethanediol / 1,2-ethylene glycol / 2- hydroxyethanol / antifreeze / COREXIT 2920 / dihydroxyethane / DOWTHERM SR1 / ECA6969 / EG (=ethylene glycol) / ethane-1,2-diol / ethanediol / ethylene alcohol / ethylene dihydrate / ethylene glycol / FRIDEX / glycohol alcohol / glycol / glycol alcohol / LUTROL-9 / MACROGOL 400BPC / MEG / monoethylene glycol / NA1142 / NORKOOL / RAMP / TESCOL / thermofluide UCAR17 / UCAR17 / ZEREX	(CAS-No.) 107-21-1	0.1 – 10	Acute Tox. 4 (Oral), H302

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 after inhalation	: Remove person to fresh air and keep comfortable for breathing.
First-aid measures after skin contact	: Wash skin with plenty of water. Take off contaminated clothing. If skin irritation or rash occurs: Get medical advice/attention.
First-aid measures after eye contact	: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If eye irritation persists: Get medical advice/attention.
First-aid measures after ingestion	: Call a poison center/doctor/physician if you feel unwell.

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

Symptoms/effects after skin contact	: May cause an allergic skin reaction.
Symptoms/effects after eye contact	: Eye irritation.

4.3. Immediate medical attention and special treatment, if necessary

Other medical advice or treatment	: Treat symptomatically.
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SECTION 5: Fire-fighting measures

5.1. Suitable extinguishing media

Suitable extinguishing media	: Water spray. Dry powder. Foam.
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5.2. Unsuitable extinguishing media

No additional information available

5.3. Specific hazards arising from the hazardous product

Fire hazard	: Heating may cause a fire.
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5.4. 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.
Other information	: Use fire control measures appropriate for the surrounding fire. Exposure to fire and heat radiation may cause gas receptacles to rupture. Cool endangered receptacles with water spray jet from a protected position. Prevent water used in emergency cases from entering sewers and drainage systems.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

No additional information available

6.2. Methods and materials for containment and cleaning up

For containment	: Do not allow to dry.
Methods for cleaning up	: Mechanically recover the product. Notify authorities if product enters sewers or public waters.

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

6.3. Reference to other sections

For further information refer to section 8: "Exposure controls/personal protection"

SECTION 7: Handling and storage

7.1. Precautions for safe handling

Precautions for safe handling : Ensure good ventilation of the work station. Take precautions against electrostatic charges. Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. Wear personal protective equipment. Avoid contact with skin and eyes. Avoid breathing vapors, fume.

Hygiene measures : Contaminated work clothing should not be allowed out of the workplace. Wash contaminated clothing before reuse. 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 away from other materials. Protect from sunlight. Keep only in original container. Keep cool. Store in a well-ventilated place.

Incompatible products : Keep away from reducing agents/(strong) acids /(strong) bases and metals.

Incompatible materials : Combustible materials.

Storage temperature : 5 – 25 °C (reccomended)

Storage area : Store in a well-ventilated place.

Special rules on packaging : Keep only in original container.

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

BPO HARDENER		
Alberta	OEL TWA (mg/m ³)	5 mg/m ³
Alberta	Notations and remarks	URT & skin irr
British Columbia	OEL TWA (mg/m ³)	5 mg/m ³
British Columbia	Notations and remarks	URT & skin irr
Manitoba	OEL TWA (mg/m ³)	5 mg/m ³
Manitoba	Notations and remarks	URT & skin irr
New Brunswick	OEL TWA (mg/m ³)	5 mg/m ³
New Brunswick	Notations and remarks	URT & skin irr
Newfoundland & Labrador	OEL TWA (mg/m ³)	5 mg/m ³
Newfoundland & Labrador	Notations and remarks	URT & skin irr
Nova Scotia	OEL TWA (mg/m ³)	5 mg/m ³
Nova Scotia	Notations and remarks	URT & skin irr
Nunavut	OEL TWA (mg/m ³)	5 mg/m ³
Nunavut	Notations and remarks	URT & skin irr
Northwest Territories	OEL TWA (mg/m ³)	5 mg/m ³
Northwest Territories	Notations and remarks	URT & skin irr
Prince Edward Island	OEL TWA (mg/m ³)	5 mg/m ³
Prince Edward Island	Notations and remarks	URT & skin irr
Saskatchewan	OEL STEL (mg/m ³)	10 mg/m ³
Saskatchewan	OEL TWA (mg/m ³)	5 mg/m ³
ethanediol, ethylene glycol (107-21-1)		
Saskatchewan	OEL STEL (mg/m ³)	100 mg/m ³
Saskatchewan	OEL TWA (mg/m ³)	100 mg/m ³

8.2. Appropriate engineering controls

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

Environmental exposure controls : Avoid release to the environment.

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8.3. Individual protection measures/Personal protective equipment

Personal protective equipment:

Gloves. Protective clothing. Safety glasses.

Materials for protective clothing:

Impermeable clothing

Hand protection:

Protective gloves

Type	Material	Permeation	Thickness (mm)	Permeation
Protective gloves	Neoprene rubber (HNBR), Nitrile rubber (NBR)	2 (> 30 minutes)	≥0.14mm	

Eye protection:

Safety glasses

Skin and body protection:

Wear suitable protective clothing

Respiratory protection:

Where exposure through inhalation may occur from use, respiratory protection equipment is recommended

Personal protective equipment symbol(s):



SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Physical state	: Solid
Appearance	: Paste.
Color	: red white Blue
Odor	: characteristic
Odor threshold	: No data available
pH	: No data available
Relative evaporation rate (butyl acetate=1)	: No data available
Relative evaporation rate (ether=1)	: No data available
Melting point	: No data available
Freezing point	: Not applicable
Boiling point	: No data available
Flash point	: Not applicable
Auto-ignition temperature	: Not applicable
Decomposition temperature	: No data available
Flammability (solid, gas)	: May cause fire, Heating may cause a fire
Vapor pressure	: No data available
Vapor pressure at 50 °C	: No data available
Relative density	: No data available
Specific gravity / density	: ≈ 1.1 g/cm ³
Solubility	: insoluble in water.
Partition coefficient n-octanol/water (Log Pow)	: No data available
Explosion limits	: Not applicable

9.2. Other information

SADT	: 50 °C
As Packaged Regulatory VOC	: 0 g/l

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SECTION 10: Stability and reactivity

10.1. Reactivity

Reactivity	: Heating may cause a fire.
Chemical stability	: SADT.
Possibility of hazardous reactions	: No dangerous reactions known under normal conditions of use.
Conditions to avoid	: Avoid contact with hot surfaces. Heat. No flames, no sparks. Eliminate all sources of ignition.
Incompatible materials	: Combustible materials.
Hazardous decomposition products	: Benzene.

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

ethanediol, ethylene glycol (107-21-1)	
LD50 oral rat	7712 mg/kg body weight (according to BASF-internal standards, Rat, Male / female, Experimental value, Aqueous solution, Oral, 7 day(s))
LD50 dermal	> 3500 mg/kg body weight (Mouse, Male / female, Experimental value, Dermal)
LC50 inhalation rat (mg/l)	> 2.5 mg/l (6 h, Rat, Male / female, Experimental value, Inhalation (aerosol))
ATE CA (oral)	500 mg/kg body weight

Skin corrosion/irritation	: Not classified
Serious eye damage/irritation	: Causes serious eye irritation.
Respiratory or skin sensitization	: May cause an allergic skin reaction.
Germ cell mutagenicity	: Not classified
Carcinogenicity	: Not classified

Reproductive toxicity : Not classified

STOT-single exposure : Not classified

: Not classified

STOT-repeated exposure

Aspiration hazard : Not classified

Symptoms/effects after skin contact : May cause an allergic skin reaction.

Symptoms/effects after eye contact : Eye irritation.

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.
Hazardous to the aquatic environment, short-term (acute)	: Not classified
Hazardous to the aquatic environment, long-term (chronic)	: Not classified

ethanediol, ethylene glycol (107-21-1)	
LC50 fish 1	40761 mg/l (96 h, Salmo gairdneri, Static system)
EC50 Daphnia 1	> 10000 mg/l (24 h, Daphnia magna)
EC50 96h algae (1)	6.5 – 13 g/l (Selenastrum capricornutum, Growth)
BCF fish 1	10 (72 h, Leuciscus idus)
BCF other aquatic organisms 1	0.21 – 0.6 (Procambarus sp., Chronic)
BCF other aquatic organisms 2	190 (24 h, Algae)
Partition coefficient n-octanol/water (Log Pow)	-1.34 (Experimental value)

12.2. Persistence and degradability

ethanediol, ethylene glycol (107-21-1)	
Persistence and degradability	Biodegradable in the soil. Readily biodegradable in water.

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ethanediol, ethylene glycol (107-21-1)	
Biochemical oxygen demand (BOD)	0.47 g O ₂ /g substance
Chemical oxygen demand (COD)	1.24 g O ₂ /g substance
ThOD	1.29 g O ₂ /g substance
BOD (% of ThOD)	0.36

12.3. Bioaccumulative potential

ethanediol, ethylene glycol (107-21-1)	
Bioaccumulative potential	Not bioaccumulative.
BCF fish 1	10 (72 h, <i>Leuciscus idus</i>)
BCF other aquatic organisms 1	0.21 – 0.6 (<i>Procambarus</i> sp., Chronic)
BCF other aquatic organisms 2	190 (24 h, Algae)
Partition coefficient n-octanol/water (Log Pow)	-1.34 (Experimental value)

12.4. Mobility in soil

ethanediol, ethylene glycol (107-21-1)	
Surface tension	48 mN/m (20 °C)
Ecology - soil	No (test)data on mobility of the substance available.
Partition coefficient n-octanol/water (Log Pow)	-1.34 (Experimental value)

12.5. Other adverse effects

Ozone : Not classified

SECTION 13: Disposal considerations

13.1. Disposal methods

Regional legislation (waste) : Disposal must be done according to official regulations.
Waste treatment methods : Dispose of contents/container in accordance with licensed collector's sorting instructions.

SECTION 14: Transport information

14.1. Basic shipping description

In accordance with TDG

Transportation of Dangerous Goods

UN-No. (TDG) : UN3108
Packing group : II - Medium Danger
TDG Primary Hazard Classes : 5.2 - Class 5.2 - Organic Peroxides
Transport document description : UN3108 ORGANIC PEROXIDE TYPE E, SOLID, 5.2, II
Proper Shipping Name (Transportation of Dangerous Goods) : ORGANIC PEROXIDE TYPE E, SOLID

Hazard labels (TDG) : 5.2 - Organic peroxides



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TDG Special Provisions	: 16 - (1) The technical name of at least one of the most dangerous substances that predominantly contributes to the hazard or hazards posed by the dangerous goods must be shown, in parentheses, on the shipping document following the shipping name in accordance with clause 3.5(1)(c)(ii)(A) of Part 3 (Documentation). The technical name must also be shown, in parentheses, on a small means of containment or on a tag following the shipping name in accordance with subsections 4.11(2) and (3) of Part 4 (Dangerous Goods Safety Marks). (2) Despite subsection (1), the technical name for the following dangerous goods is not required to be shown on a shipping document or on a small means of containment when Canadian law for domestic transport or an international convention for international transport prohibits the disclosure of the technical name: (a)UN1544, ALKALOID SALTS, SOLID, N.O.S. or ALKALOIDS, SOLID, N.O.S; (b)UN1851, MEDICINE, LIQUID, TOXIC, N.O.S; (c)UN3140, ALKALOID SALTS, LIQUID, N.O.S. or ALKALOIDS, LIQUID, N.O.S; (d)UN3248, MEDICINE, LIQUID, FLAMMABLE, TOXIC, N.O.S; or (e)UN3249, MEDICINE, SOLID, TOXIC, N.O.S. An example in Canada is the "Food and Drugs Act". (3) Despite subsection (1), the technical name for the following dangerous goods is not required to be shown on a small means of containment: (a)UN2814, INFECTIOUS SUBSTANCE, AFFECTING HUMANS; or (b)UN2900, INFECTIOUS SUBSTANCE, AFFECTING ANIMALS. SOR/2014-306 38 - A person must not handle, offer for transport or transport these dangerous goods in a large means of containment if they are in direct contact with the large means of containment. SOR/2014-306
Explosive Limit and Limited Quantity Index	: 0.5 kg
Passenger Carrying Ship Index	: Forbidden
Excepted quantities (TDG)	: E0
Passenger Carrying Road Vehicle or Passenger Carrying Railway Vehicle Index	: 10 kg

14.2. Transport information/DOT

Department of Transport

DOT NA No	: UN3108
UN-No.(DOT)	: 3108
Packing group (DOT)	: II - Medium Danger
DOT Symbols	: G - Identifies PSN requiring a technical name
Transport document description	: UN3108 Organic peroxide type E, solid, 5.2, II
Proper Shipping Name (DOT)	: Organic peroxide type E, solid
Contains Statement Field Selection (DOT)	:
Class (DOT)	: 5.2 - Class 5.2 - Organic Peroxide 49 CFR 173.128
Division (DOT)	: 5.2
Hazard labels (DOT)	: 5.2 - Organic peroxide



Dangerous for the environment	: No
DOT Packaging Exceptions (49 CFR 173.xxx)	: 152
DOT Packaging Non Bulk (49 CFR 173.xxx)	: 225
DOT Packaging Bulk (49 CFR 173.xxx)	: None
DOT Quantity Limitations Passenger aircraft/rail (49 CFR 173.27)	: 10 kg
DOT Quantity Limitations Cargo aircraft only (49 CFR 175.75)	: 25 kg
DOT Vessel Stowage Location	: D - The material must be stowed "on deck only" on a cargo vessel and on a passenger vessel carrying a number of passengers limited to not more than the larger of 25 passengers or one passenger per each 3 m of overall vessel length, but the material is prohibited on passenger vessels in which the limiting number of passengers is exceeded.
DOT Vessel Stowage Other	: 12 - Keep as cool as reasonably practicable,40 - Stow "clear of living quarters",52 - Stow "separated from" acids,53 - Stow "separated from" alkaline compounds
Other information	: No supplementary information available.

14.3. Air and sea transport

IMDG

UN-No. (IMDG)	: 3108
Proper Shipping Name (IMDG)	: ORGANIC PEROXIDE TYPE E, SOLID
Transport document description (IMDG)	: UN 3108 ORGANIC PEROXIDE TYPE E, SOLID, 5.2, MARINE POLLUTANT/ENVIRONMENTALLY HAZARDOUS

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Class (IMDG) : 5.2 - Organic peroxides

IATA

UN-No. (IATA) : 3108
Proper Shipping Name (IATA) : Organic peroxide type e, solid
Transport document description (IATA) : UN 3108 Organic peroxide type e, solid, 5.2, ENVIRONMENTALLY HAZARDOUS
Class (IATA) : 5.2 - Organic Peroxides

SECTION 15: Regulatory information

15.1. National regulations

ethanediol, ethylene glycol (107-21-1)

Listed on the Canadian DSL (Domestic Substances List)

dibenzoyl peroxide, benzoyl peroxide (94-36-0)

Listed on the Canadian DSL (Domestic Substances List)

15.2. International regulations

ethanediol, ethylene glycol (107-21-1)

Listed on the United States TSCA (Toxic Substances Control Act) inventory

dibenzoyl peroxide, benzoyl peroxide (94-36-0)

Listed on the United States TSCA (Toxic Substances Control Act) inventory

SECTION 16: Other information

SDS Major/Minor : None
Issue date : 08-13-2019
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Supersedes : 08-13-2019

Full text of H-phrases:

H241	Heating may cause a fire or explosion
H242	Heating may cause a fire
H302	Harmful if swallowed
H317	May cause an allergic skin reaction
H319	Causes serious eye irritation
H400	Very toxic to aquatic life
H410	Very toxic to aquatic life with long lasting effects

SDS Canada U-POL

This information is based on our current knowledge and is intended to describe the product for the purposes of health, safety and environmental requirements only. It should not therefore be construed as guaranteeing any specific property of the product.