

Safety Data Sheet



Section 1: Identification of the Substance/Mixture and of the Company/Undertaking

1.1 Product identifier

- Product Name** • DeFogger™
Product Code • 28-0101; 28-0101B; 28-0101EU; 28-0102; 28-0102NS; V28-0101

1.2 Relevant identified uses of the substance or mixture and uses advised against

- Relevant identified use(s)** • Specifically formulated solution that safely prevents lens fogging.

1.3 Details of the supplier of the safety data sheet

- Manufacturer** • DeRoyal Industries, Inc.
200 DeBusk Lane
Powell, TN 37849
United States
www.deroyal.com
customerservice@deroyal.com

Telephone (General) • 800-251-9864

1.4 Emergency telephone number

- 800-424-9300 - CHEMTREC

Section 2: Hazards Identification

EU/EEC

According to: Regulation (EC) No 1272/2008 (CLP)/REACH 1907/2006 [amended by 453/2010]

2.1 Classification of the substance or mixture

- CLP** • Flammable Liquids 3 - H226

2.2 Label Elements

CLP

WARNING



Hazard statements • H226 - Flammable liquid

Precautionary statements

- Prevention** • P210 - Keep away from heat, sparks, open flames and/or hot surfaces. No smoking.
P233 - Keep container tightly closed.
P240 - Ground and/or bond container and receiving equipment.
P243 - Take precautionary measures against static discharge.
P280 - Wear protective gloves/protective clothing/eye protection/face protection.

- Response** • P370+P378 - In case of fire: Use appropriate media for extinction.
P303+P361+P353 - IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower.

- Storage/Disposal** • P403+P235 - Store in a well-ventilated place. Keep cool.
P501 - Dispose of content and/or container in accordance with local, regional, national, and/or international regulations.

2.3 Other Hazards

- CLP** • According to Regulation (EC) No. 1272/2008 (CLP) this material is considered hazardous.

UN GHS

According to: UN Globally Harmonized System of Classification and Labelling of Chemicals (GHS)

2.1 Classification of the substance or mixture

- UN GHS** • Flammable Liquids 3

2.2 Label elements

UN GHS

WARNING



- Hazard statements** • Flammable liquid and vapor

Precautionary statements

- Prevention** • Keep away from heat, sparks, open flames and/or hot surfaces. No smoking.
Keep container tightly closed.
Ground and/or bond container and receiving equipment.
Take precautionary measures against static discharge.
Wear protective gloves/protective clothing/eye protection/face protection.

- Response** • In case of fire: Use appropriate media for extinction.
IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower.

- Storage/Disposal** • Store in a well-ventilated place. Keep cool.
Dispose of content and/or container in accordance with local, regional, national, and/or international regulations.

2.3 Other hazards

- UN GHS** • According to the Globally Harmonized System for Classification and Labeling (GHS) this product is considered hazardous.

United States (US)

According to: OSHA 29 CFR 1910.1200 HCS

2.1 Classification of the substance or mixture

- OSHA HCS 2012** • Flammable Liquids 3

2.2 Label elements

OSHA HCS 2012

WARNING

Hazard statements • Flammable liquid and vapor

Precautionary statements

Prevention • Keep away from heat, sparks, open flames and/or hot surfaces. No smoking.
Keep container tightly closed.
Ground and/or bond container and receiving equipment.
Take precautionary measures against static discharge.
Wear protective gloves/protective clothing/eye protection/face protection.

Response • In case of fire: Use appropriate media for extinction.
IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower.

Storage/Disposal • Store in a well-ventilated place. Keep cool.
Dispose of content and/or container in accordance with local, regional, national, and/or international regulations.

2.3 Other hazards

OSHA HCS 2012 • Under United States Regulations (29 CFR 1910.1200 - Hazard Communication Standard), this product is considered hazardous.

Canada

According to: WHMIS

2.1 Classification of the substance or mixture

WHMIS • Combustible Liquids - B3

2.2 Label elements

WHMIS



• Combustible Liquids - B3

2.3 Other hazards

WHMIS • In Canada, the product mentioned above is considered hazardous under the Workplace Hazardous Materials Information System (WHMIS).

Section 3 - Composition/Information on Ingredients

3.1 Substances

- Material does not meet the criteria of a substance.

3.2 Mixtures

Composition					
Chemical Name	Identifiers	%	LD50/LC50	Classifications According to Regulation/Directive	Comments
Isopropyl alcohol	CAS:67-63-0 EC Number:200-661-7	7%	Inhalation-Rat LC50 • 16000 ppm 8 Hour(s) Skin-Rabbit LD50 • 12800 mg/kg	UN GHS: Flam. Liq. 2; Acute Tox. 5 (orl); Skin Irrit. 3; Eye Irrit. 2; Muta. 2; Repr. 2; STOT SE 3: Narc.; STOT SE 3: Resp. Irrit.; Asp. Tox. 2; STOT RE 2 (Eyes, Inhl) EU CLP: Annex VI, Table 3.1: Flam. Liq. 2,	NDA

	EU Index: 603-117-00-0		Ingestion/Oral-Rat LD50 • 5000 mg/kg	H225; Eye Irrit. 2, H319; STOT SE 3: Narc., H336 OSHA HCS 2012: Flam. Liq. 2; Eye Irrit. 2; Muta. 2; Repr. 2; STOT SE 3: Narc.; STOT SE 3: Resp. Irrit. ; STOT RE 2 (Eyes, Inhl)	
Butanedioic acid, 2-sulfo-, 1,4-bis(2-ethylhexyl) ester, sodium salt (1:1)	CAS: 577-11-7 EC Number: 209-406-4	0% TO 1.76%	Ingestion/Oral-Rat LD50 • 1900 mg/kg Skin-Rabbit LD50 • >10 g/kg	UN GHS: Skin Irrit. 2; Eye Irrit. 2; Acute Tox. 4 (orl); Aquatic Acute 3 EU CLP: Self Classified: Skin Irrit. 2, H315; Eye Irrit. 2, H319; Acute Tox. 4. H302 OSHA HCS 2012: Skin Irrit. 2; Eye Irrit. 2; Acute Tox. 4 (orl)	NDA
Ethanol	CAS: 64-17-5 EC Number: 200-578-6 EU Index: 603-002-00-5	0.24%	Ingestion/Oral-Rat LD50 • 7060 mg/kg Inhalation-Rat LC50 • 5900 mg/m ³ 6 Hour(s)	UN GHS: Acute Tox. 3 (inhl); Skin Irrit. 2; Eye Irrit. 2; Muta. 2; STOT SE 3: Narc.; Aquatic Acute 2; Aquatic Chronic 3 EU CLP: Self Classified: Flam. Liq. 2, H225 OSHA HCS 2012: Flam. Liq. 2; Acute Tox. 3 (inhl); Skin Irrit. 2; Eye Irrit. 2; Muta. 2; STOT SE 3: Narc.	NDA

Section 4 - First Aid Measures

4.1 Description of first aid measures

- Inhalation** • Move victim to fresh air. Administer oxygen if breathing is difficult. Give artificial respiration if victim is not breathing.
- Skin** • In case of contact with substance, immediately flush skin with running water for at least 20 minutes. Remove and isolate contaminated clothing. Wash skin with soap and water. If irritation develops and persists, get medical attention.
- Eye** • In case of contact with substance, immediately flush eyes with running water for at least 20 minutes. If eye irritation persists: Get medical advice/attention.
- Ingestion** • Do NOT induce vomiting. Rinse mouth with water. Obtain medical attention immediately if ingested.

4.2 Most important symptoms and effects, both acute and delayed

- Refer to Section 11 - Toxicological Information.

4.3 Indication of any immediate medical attention and special treatment needed

- Notes to Physician** • All treatments should be based on observed signs and symptoms of distress in the patient. Consideration should be given to the possibility that overexposure to materials other than this product may have occurred.

Section 5 - Firefighting Measures

5.1 Extinguishing media

- Suitable Extinguishing Media** • LARGE FIRES: Water spray, fog or alcohol-resistant foam.
SMALL FIRES: Dry chemical, CO₂, water spray or alcohol-resistant foam.
- Unsuitable Extinguishing Media** • Do not use straight streams.

5.2 Special hazards arising from the substance or mixture

- Unusual Fire and Explosion Hazards** • Containers may explode when heated.
HIGHLY FLAMMABLE: Will be easily ignited by heat, sparks or flames.
Many liquids are lighter than water.
Most vapors are heavier than air. They will spread along ground and collect in low or confined areas (sewers, basements, tanks).
Runoff to sewer may create fire or explosion hazard.

Vapors may form explosive mixtures with air.
Vapors may travel to source of ignition and flash back.

Hazardous Combustion Products • No data available

5.3 Advice for firefighters

- Structural firefighters' protective clothing will only provide limited protection. Wear positive pressure self-contained breathing apparatus (SCBA). Move containers from fire area if you can do it without risk.
LARGE FIRES: Cool containers with flooding quantities of water until well after fire is out.

Section 6 - Accidental Release Measures

6.1 Personal precautions, protective equipment and emergency procedures

Personal Precautions • Use appropriate Personal Protective Equipment (PPE).
Emergency Procedures • ELIMINATE all ignition sources (no smoking, flares, sparks or flames in immediate area). Keep unauthorized personnel away.

6.2 Environmental precautions

- Prevent entry into waterways, sewers, basements or confined areas.

6.3 Methods and material for containment and cleaning up

Containment/Clean-up Measures • Stop leak if you can do it without risk.
Wipe up or mop up.

6.4 Reference to other sections

- Refer to Section 8 - Exposure Controls/Personal Protection and Section 13 - Disposal Considerations.

Section 7 - Handling and Storage

7.1 Precautions for safe handling

Handling • Use good safety and industrial hygiene practices. Use only in well ventilated areas. Avoid contact with heat and ignition sources. Take precautionary measures against static charges. Wash thoroughly with soap and water after handling and before eating, drinking, or using tobacco.

7.2 Conditions for safe storage, including any incompatibilities

Storage • Store away from heat sources. Keep container tightly closed.

7.3 Specific end use(s)

- Refer to Section 1.2 - Relevant identified uses.

Section 8 - Exposure Controls/Personal Protection

8.1 Control parameters

Exposure Limits/Guidelines					
	Result	ACGIH	Korea	NIOSH	OSHA
Isopropyl alcohol (67-63-0)	STELs	400 ppm STEL	400 ppm STEL (Serial No. 471); 980 mg/m ³ STEL (Serial No. 471)	500 ppm STEL; 1225 mg/m ³ STEL	Not established

	TWAs	200 ppm TWA	200 ppm TWA (Serial No. 471); 480 mg/m ³ TWA (Serial No. 471)	400 ppm TWA; 980 mg/m ³ TWA	400 ppm TWA; 980 mg/m ³ TWA
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8.2 Exposure controls

Engineering

Measures/Controls

- Good general ventilation should be used. Ventilation rates should be matched to conditions. If applicable, use process enclosures, local exhaust ventilation, or other engineering controls to maintain airborne levels below recommended exposure limits. If exposure limits have not been established, maintain airborne levels to an acceptable level.

Personal Protective Equipment

Respiratory

- None necessary under normal conditions of use.

Eye/Face

- Wear safety goggles.

Skin/Body

- None required under normal conditions of use.

Environmental

Exposure Controls

- Follow best practice for site management and disposal of waste.

Key to abbreviations

ACGIH = American Conference of Governmental Industrial Hygiene

NIOSH = National Institute of Occupational Safety and Health

OSHA = Occupational Safety and Health Administration

STEL = Short Term Exposure Limits are based on 15-minute exposures

TWA = Time-Weighted Averages are based on 8h/day, 40h/week exposures

Section 9 - Physical and Chemical Properties

9.1 Information on Physical and Chemical Properties

Material Description			
Physical Form	Liquid	Appearance/Description	Clear liquid with no odor.
Color	Clear	Odor	Odorless
Odor Threshold	No data available		
General Properties			
Boiling Point	No data available	Melting Point	No data available
Decomposition Temperature	No data available	pH	No data available
Specific Gravity/Relative Density	No data available	Water Solubility	Soluble
Viscosity	No data available	Explosive Properties	No data available
Oxidizing Properties	No data available		
Volatility			
Vapor Pressure	No data available	Vapor Density	No data available
Evaporation Rate	No data available		
Flammability			
Flash Point	45°C (113°F)	UEL	No data available
LEL	No data available	Autoignition	No data available
Flammability (solid, gas)	No data available		
Environmental			
Octanol/Water Partition coefficient	No data available		

9.2 Other Information

- No additional physical and chemical parameters noted.

Section 10: Stability and Reactivity

10.1 Reactivity

- No dangerous reaction known under conditions of normal use.

10.2 Chemical stability

- Stable under normal temperatures and pressures.

10.3 Possibility of hazardous reactions

- Hazardous polymerization will not occur.

10.4 Conditions to avoid

- Excess heat, sparks, open flame.

10.5 Incompatible materials

- Strong oxidizing agents.

10.6 Hazardous decomposition products

- Carbon monoxide, carbon dioxide.

Section 11 - Toxicological Information

11.1 Information on toxicological effects

GHS Properties	Classification
Acute toxicity	EU/CLP•No data available OSHA HCS 2012•No data available UN GHS•No data available
Aspiration Hazard	EU/CLP•No data available OSHA HCS 2012•No data available UN GHS•No data available
Carcinogenicity	EU/CLP•No data available OSHA HCS 2012•No data available UN GHS•No data available
Germ Cell Mutagenicity	EU/CLP•No data available OSHA HCS 2012•No data available UN GHS•No data available
Skin corrosion/Irritation	EU/CLP•No data available OSHA HCS 2012•No data available UN GHS•No data available
Skin sensitization	EU/CLP•No data available OSHA HCS 2012•No data available UN GHS•No data available
STOT-RE	EU/CLP•No data available OSHA HCS 2012•No data available UN GHS•No data available
STOT-SE	EU/CLP•No data available OSHA HCS 2012•No data available UN GHS•No data available
Toxicity for Reproduction	EU/CLP•No data available OSHA HCS 2012•No data available UN GHS•No data available

Respiratory sensitization	EU/CLP •No data available OSHA HCS 2012 •No data available UN GHS •No data available
Serious eye damage/Irritation	EU/CLP •No data available OSHA HCS 2012 •No data available UN GHS •No data available

Potential Health Effects

Inhalation

Acute (Immediate) • Under normal conditions of use, no health effects are expected.

Chronic (Delayed) • No data available

Skin

Acute (Immediate) • Under normal conditions of use, no health effects are expected.

Chronic (Delayed) • No data available

Eye

Acute (Immediate) • Under normal conditions of use, no health effects are expected.

Chronic (Delayed) • No data available

Ingestion

Acute (Immediate) • Under normal conditions of use, no health effects are expected.

Chronic (Delayed) • No data available

Section 12 - Ecological Information

12.1 Toxicity

- No data available.

12.2 Persistence and degradability

- No data available.

12.3 Bioaccumulative potential

- No data available.

12.4 Mobility in Soil

- No data available.

12.5 Results of PBT and vPvB assessment

- No PBT and vPvB assessment has been conducted.

12.6 Other adverse effects

- No studies have been found.

Section 13 - Disposal Considerations

13.1 Waste treatment methods

Product waste • Dispose of content and/or container in accordance with local, regional, national, and/or international regulations.

Packaging waste • Dispose of content and/or container in accordance with local, regional, national, and/or international regulations.

Section 14 - Transport Information

	14.1 UN number	14.2 UN proper shipping name	14.3 Transport hazard class(es)	14.4 Packing group	14.5 Environmental hazards
DOT	NDA	Not Regulated	NDA	NDA	NDA

14.6 Special precautions for user

- None specified

14.7 Other information

DOT

- Product meets exception for Class 3 (flammable and combustible liquids) as defined at 49CFR173.150(e)(2).

Section 15 - Regulatory Information

15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture

SARA Hazard Classifications • Fire

Inventory						
Component	CAS	Canada DSL	Canada NDSL	EU EINECS	EU ELNICS	Korea KECL
Butanedioic acid, 2-sulfo-, 1,4-bis(2-ethylhexyl) ester, sodium salt (1:1)	577-11-7	Yes	No	Yes	No	Yes
Ethanol	64-17-5	Yes	No	Yes	No	Yes
Isopropyl alcohol	67-63-0	Yes	No	Yes	No	Yes
Inventory (Con't.)						
Component	CAS	TSCA				
Butanedioic acid, 2-sulfo-, 1,4-bis(2-ethylhexyl) ester, sodium salt (1:1)	577-11-7	Yes				
Ethanol	64-17-5	Yes				
Isopropyl alcohol	67-63-0	Yes				

Canada

Labor

Canada - WHMIS - Classifications of Substances

•Butanedioic acid, 2-sulfo-, 1,4-bis(2-ethylhexyl) ester, sodium salt (1:1)	577-11-7	Not Listed
•Isopropyl alcohol	67-63-0	B2, D2B (including 70%)
•Ethanol	64-17-5	B2, D2B

Canada - WHMIS - Ingredient Disclosure List

•Butanedioic acid, 2-sulfo-, 1,4-bis(2-ethylhexyl) ester, sodium salt (1:1)	577-11-7	1 %
•Isopropyl alcohol	67-63-0	1 %
•Ethanol	64-17-5	0.1 %

Environment

Canada - CEPA - Priority Substances List

•Butanedioic acid, 2-sulfo-, 1,4-bis(2-ethylhexyl) ester, sodium salt (1:1)	577-11-7	Not Listed
•Isopropyl alcohol	67-63-0	Not Listed
•Ethanol	64-17-5	Not Listed

Korea

Labor

Korea - ISHA - Harmful Substances Prohibited for Manufacturing, Importing, Transferring, or Supplying

•Butanedioic acid, 2-sulfo-, 1,4-bis(2-ethylhexyl) ester, sodium salt (1:1)	577-11-7	Not Listed
•Isopropyl alcohol	67-63-0	Not Listed
•Ethanol	64-17-5	Not Listed

Korea - ISHA - Harmful Substances Requiring Permission

•Butanedioic acid, 2-sulfo-, 1,4-bis(2-ethylhexyl) ester, sodium salt (1:1)	577-11-7	Not Listed
•Isopropyl alcohol	67-63-0	Not Listed
•Ethanol	64-17-5	Not Listed

Korea - ISHA - Name, Toxicity and Protective Measures of New Chemical Substances

•Butanedioic acid, 2-sulfo-, 1,4-bis(2-ethylhexyl) ester, sodium salt (1:1)	577-11-7	Not Listed
•Isopropyl alcohol	67-63-0	Not Listed
•Ethanol	64-17-5	Not Listed

Environment

Korea - MOE - Toxic Chemicals Control Act (TCCA) - Observational Chemicals

•Butanedioic acid, 2-sulfo-, 1,4-bis(2-ethylhexyl) ester, sodium salt (1:1)	577-11-7	Not Listed
•Isopropyl alcohol	67-63-0	Not Listed
•Ethanol	64-17-5	Not Listed

United States

Labor

U.S. - OSHA - Process Safety Management - Highly Hazardous Chemicals

•Butanedioic acid, 2-sulfo-, 1,4-bis(2-ethylhexyl) ester, sodium salt (1:1)	577-11-7	Not Listed
•Isopropyl alcohol	67-63-0	Not Listed
•Ethanol	64-17-5	Not Listed

U.S. - OSHA - Specifically Regulated Chemicals

•Butanedioic acid, 2-sulfo-, 1,4-bis(2-ethylhexyl) ester, sodium salt (1:1)	577-11-7	Not Listed
•Isopropyl alcohol	67-63-0	Not Listed
•Ethanol	64-17-5	Not Listed

Environment

U.S. - CAA (Clean Air Act) - 1990 Hazardous Air Pollutants

•Butanedioic acid, 2-sulfo-, 1,4-bis(2-ethylhexyl) ester, sodium salt (1:1)	577-11-7	Not Listed
•Isopropyl alcohol	67-63-0	Not Listed
•Ethanol	64-17-5	Not Listed

U.S. - CERCLA/SARA - Hazardous Substances and their Reportable Quantities

•Butanedioic acid, 2-sulfo-, 1,4-bis(2-ethylhexyl) ester, sodium salt (1:1)	577-11-7	Not Listed
•Isopropyl alcohol	67-63-0	Not Listed
•Ethanol	64-17-5	Not Listed

U.S. - CERCLA/SARA - Radionuclides and Their Reportable Quantities

•Butanedioic acid, 2-sulfo-, 1,4-bis(2-ethylhexyl) ester, sodium salt (1:1)	577-11-7	Not Listed
•Isopropyl alcohol	67-63-0	Not Listed
•Ethanol	64-17-5	Not Listed

U.S. - CERCLA/SARA - Section 302 Extremely Hazardous Substances EPCRA RQs

•Butanedioic acid, 2-sulfo-, 1,4-bis(2-ethylhexyl) ester, sodium salt (1:1)	577-11-7	Not Listed
•Isopropyl alcohol	67-63-0	Not Listed
•Ethanol	64-17-5	Not Listed

U.S. - CERCLA/SARA - Section 302 Extremely Hazardous Substances TPQs

•Butanedioic acid, 2-sulfo-, 1,4-bis(2-ethylhexyl) ester, sodium salt (1:1)	577-11-7	Not Listed
•Isopropyl alcohol	67-63-0	Not Listed
•Ethanol	64-17-5	Not Listed

U.S. - CERCLA/SARA - Section 313 - PBT Chemical Listing

•Butanedioic acid, 2-sulfo-, 1,4-bis(2-ethylhexyl) ester, sodium salt (1:1)	577-11-7	Not Listed
•Isopropyl alcohol	67-63-0	Not Listed
•Ethanol	64-17-5	Not Listed

United States - California

Environment

U.S. - California - Proposition 65 - Maximum Allowable Dose Levels (MADL)

•Butanedioic acid, 2-sulfo-, 1,4-bis(2-ethylhexyl) ester, sodium salt (1:1)	577-11-7	Not Listed
•Isopropyl alcohol	67-63-0	Not Listed
•Ethanol	64-17-5	Not Listed

U.S. - California - Proposition 65 - No Significant Risk Levels (NSRL)

•Butanedioic acid, 2-sulfo-, 1,4-bis(2-ethylhexyl) ester, sodium salt (1:1)	577-11-7	Not Listed
•Isopropyl alcohol	67-63-0	Not Listed
•Ethanol	64-17-5	Not Listed

U.S. - California - Proposition 65 - Reproductive Toxicity - Female

•Butanedioic acid, 2-sulfo-, 1,4-bis(2-ethylhexyl) ester, sodium salt (1:1)	577-11-7	Not Listed
•Isopropyl alcohol	67-63-0	Not Listed
•Ethanol	64-17-5	Not Listed

U.S. - California - Proposition 65 - Reproductive Toxicity - Male

•Butanedioic acid, 2-sulfo-, 1,4-bis(2-ethylhexyl) ester, sodium salt (1:1)	577-11-7	Not Listed
•Isopropyl alcohol	67-63-0	Not Listed
•Ethanol	64-17-5	Not Listed

15.2 Chemical Safety Assessment

- No Chemical Safety Assessment has been carried out.

Section 16 - Other Information

Last Revision Date	• 20/May/2015
Preparation Date	• 20/May/2015
Disclaimer/Statement of Liability	• The information presented herein is based on data considered to be accurate as of the date of preparation of this Safety Data Sheet. However, no warranty or representation, express or implied is made as to the accuracy or completeness of the foregoing data and safety information, nor is any authorization given or implied to practice any patented invention without a license. In addition, no responsibility can be assumed by vendor for any damage or injury resulting from abnormal use, from any failure to adhere to recommended practices, or from any hazards inherent in the nature of the product.

Key to abbreviations

NDA = No data available