

Kit SDS Cover Sheet

Document ID: PS3-100-75: Version AB
Revision Date (year/month/day) 2022/09/27
Last Revision Date (year/month/day) 2015/05/28

Product information

Product name Lumigen ECL Plus Chemiluminescent Reagent (Lumigen PS-3)

Part number PS3-100, PS3-1000

Additional product information

For laboratory use only. See product literature for details.
Restricted to professional users.

Components

Description Lumigen ECL Plus Solution A Chemiluminescent Reagent (Lumigen PS-3)
Lumigen ECL Plus Solution B Chemiluminescent Reagent (Lumigen PS-3)

Transport information

Shipping information	IATA	IMDG	US DOT	European ADR	Canadian TDG
UN/ID number	1987	1987	1987	1987	1987
Shipping name	Alcohols, n.o.s. (Ethanol solution)				
Hazard class	3 Flammable Liquids	3 Flammable liquids	3 Flammable liquid	3 Flammable Liquids	3 Flammable Liquids
Subsidiary risk	None	None	None	None	None
Classification code	Not applicable	Not applicable	Not applicable	F1	Not applicable
Packing group	II	II	II	II	II
Special provisions	A3; A180	274	172	274, 601, 640C	16, 150
Additional information					
IATA ERG code	3L	Not applicable	Not applicable	Not applicable	Not applicable
EmS	Not applicable	F-E, S-D	Not applicable	Not applicable	Not applicable
NAERG code	Not applicable	Not applicable	127	Not applicable	127

Environmental hazards

Marine pollutant Not applicable No Not applicable Not applicable Not applicable

Special precautions for user

Warning: Flammable liquid.



SAFETY DATA SHEET

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Section 1 Identification of the substance/mixture and of the company/undertaking

1.1 Product identifier

Product name Lumigen ECL Plus Solution A Chemiluminescent Reagent (Lumigen PS-3)

Part number Component of P/N PS3-100, PS3-1000

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

Product use For laboratory use only. See product literature for details.

1.3 Details of the supplier of the safety data sheet

Manufacturer

Lumigen, Inc. (A Beckman Coulter company)
 22900 W. Eight Mile Road
 Southfield, MI 48033, U.S.A.
 Tel: 248-351-5600

e-mail address ksrashid@beckman.com

1.4 Emergency telephone number

Telephone number (24H) ChemTel Expert Assistance
 Hotline/MSDS Fax Access by dialing 800-255-3924 or for
 International +01-813-248-0585

Section 2 Hazards identification

2.1 Classification of the substance or mixture

Product description Mixture
 Colorless; Clear; Liquid; Ammonia-like

Classification according to EC 1272/2008 (CLP/GHS)

Not classified as hazardous per EC 1272/2008 (CLP/GHS)

Classification according to US-OSHA (HCS 29 CFR 1910.1200) and UN GHS

Not classified as hazardous per US-OSHA HCS 2012 and UN GHS

2.2 Label elements

According to EC 1272/2008 (CLP/GHS), US-OSHA and UN GHS

Not classified as hazardous per EC 1272/2008 (CLP/GHS), US-OSHA and GHS

2.3 Other hazards

Results of PBT and vPvB assessment

PBT: Not applicable.

vPvB: Not applicable.

See Section 11 Toxicological Information for more detailed health information.

Section 3 Composition and information on ingredients

3.2 Mixtures

Hazardous ingredients: None

Section 4 First aid measures

4.1 Description of first aid measures

Inhalation	If product is inhaled, move exposed individual to fresh air. If individual is not breathing, begin artificial respiration by trained personnel and obtain medical attention immediately.
Eye contact	If product enters eyes, rinse eyes gently with water as a precaution.
Skin contact	In case of skin contact, rinse with water as a precaution.
Ingestion	If product is ingested, rinse mouth with water. If irritation or discomfort occurs, obtain medical attention immediately.

4.2 Most important symptoms and effects, both acute and delayed

No adverse symptoms or effects have been identified.

4.3 Indication of any immediate medical attention and special treatment needed

No specific medical attention or treatment required.

Section 5 Fire fighting measures

5.1 Extinguishing media In case of fire use carbon dioxide (CO₂), dry chemical, water spray or foam. For large fires use extinguishing media suitable for surrounding fire.

5.2 Special hazards arising from the substance or mixture Special fire and explosion hazards

No special hazards determined.

Hazardous combustion products

No combustion products posing significant hazards are expected from this product (an aqueous solution).

5.3 Advice for fire fighters

Protective equipment Self-contained breathing apparatus is recommended for firefighters in all chemical fire situations.

5.4 Additional information No further relevant information available.

Section 6 Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures

Personal precautions No special precautions are necessary. Use good laboratory procedures.

Section 6 Accidental release measures (Continued)

- 6.2 Environmental precautions** Contain spill to prevent migration.
Do not allow the undiluted product to enter sewers/surface or ground water.
- 6.3 Methods and material for containment and cleaning up**
- Spill and leak procedures** Absorb spilled material with an appropriate inert, non-flammable absorbent and dispose according to local regulations.
- 6.4 Reference to other sections** Refer sections 8 and 13.

Section 7 Handling and storage

- 7.1 Precautions for safe handling** No special precautions are necessary; use good laboratory procedures.
- 7.2 Conditions for safe storage, including any incompatibilities**
- To maintain product quality, store according to the instructions in the product labeling.
Store away from strong acids, strong bases, strong oxidizers and incompatible materials (section 10).
- 7.3 Specific end uses** No further relevant information available.

Section 8 Exposure controls and personal protection

- 8.1 Control parameters**
- Exposure limits**
- | | |
|---|------------------|
| US OSHA | None established |
| ACGIH | None established |
| DFG MAK | None established |
| Ireland | None established |
| IOELVs | None established |
| NIOSH | None established |
| Japan | None established |
| Sweden (AFS 2015:7 and amendments) | None established |
- 8.2 Exposure controls**
- Engineering controls** No special engineering controls are required. Use with good general ventilation.
- Eye protection** Safety glasses or chemical goggles should be worn to prevent eye contact.
Refer U.S. OSHA 29 CFR 1910.133, European Standard EN166 or appropriate government standards.

Section 8 Exposure controls and personal protection (Continued)

Skin protection	Wear protective clothing and impervious gloves, as appropriate.
Respiratory protection	Under normal conditions, the use of this product should not require respiratory protection.

Section 9 Physical and chemical properties

9.1 Information on basic physical and chemical properties

Physical state	Liquid	Specific gravity (water=1.0)	1.0
Color	Colorless	Solubility	
Transparency	Clear	Water	Soluble
Odor	Ammonia-like	Organic	Not determined
pH	8.00 @25°C	Partition coefficient: n-octanol/water	Not determined
Freezing point	Not determined	Auto-ignition temp.	Not applicable
Boiling point	100°C (212°F)	Decomposition temperature	Not determined
Flash point	Not applicable	Percent volatiles	Not applicable
Evaporation rate	Not determined	Vapor pressure	Not determined
Flammability (solid, gas)	Not applicable	Viscosity	Not determined
Flammability limits	Not applicable	Explosive properties	Not applicable
Vapor density	Not determined	Oxidizing properties	Not determined
Odor threshold	Not applicable		

9.2 Other information No further relevant information available.

Section 10 Stability and reactivity

10.1 Reactivity	No further relevant information available.
10.2 Chemical stability	The product is stable in accordance with recommended storage conditions.
10.3 Possibility of hazardous reactions	No further relevant information available.
10.4 Conditions to avoid	To maintain product performance keep away from strong acids, strong bases, strong oxidizers. Avoid exposure to heat and direct sunlight.
10.5 Incompatible materials	No further relevant information available.

Section 10 Stability and reactivity (Continued)

10.6 Hazardous decomposition products

No decomposition products posing significant hazards would be expected from this product (an aqueous solution).

Section 11 Toxicological information

11.1 Information on toxicological effects

Toxicity data for hazardous ingredients

	Not applicable
Primary routes of exposure	Eye contact, ingestion, inhalation, and skin contact.
Acute toxicity	Not classified based on available data.
Skin corrosion/irritation	Not classified based on available data.
Serious eye damage/eye irritation	Not classified based on available data.
Respiratory/skin sensitization	Not classified based on available data.
Carcinogenicity	No ingredients in this product are listed as carcinogens by ACGIH, IARC, NTP, OSHA or 1272/2008 EC regulation.
Germ cell mutagenicity	Not classified based on available data.
Reproductive toxicity	Not classified based on available data.
Specific target organ toxicity – single exposure	Not classified based on available data.
Specific target organ toxicity – repeated exposure	Not classified based on available data.
Aspiration hazard	Not classified based on available data.
Other information	No further relevant information available.

Section 12 Ecological information

12.1 Ecotoxicity

Fresh water species	No information available.
Microtox	No information available.
Water flea	No information available.
Fresh water algae	No information available.

12.2 Persistence and degradability Not determined for the product.

Section 12 Ecological information (Continued)

- 12.3 Bioaccumulation** Not determined for the product.
- 12.4 Mobility in soil** Not determined for the product.
- 12.5 Results of PBT and vPvB assessment**
Not determined for the product. PBT: Not applicable, vPvB: Not applicable.
- 12.6 Other adverse effects** No further relevant information available.

Section 13 Disposal considerations

- 13.1 Waste treatment methods**
- Product waste disposal** Chemical residues and remains should be routinely handled as special waste. This must be disposed of in compliance with anti-pollution and other laws of the country concerned. To ensure compliance we recommend that you contact the relevant (local) authorities and/or an approved waste-disposal company for information.
- 13.2 Additional information** Suggested European waste catalogue 18 01 07 - chemicals other than those mentioned in 18 01 06. Dispose in accordance with national, state and local waste regulations.

Section 14 Transport information

Transportation of this product is not regulated under ICAO, IATA DGR, IMDG, US DOT, European ADR and RID or Canadian TDG.

- 14.1 UN/ID number:** Not regulated for transportation
- 14.2 Shipping name:** Not regulated for transportation
- 14.3 Hazard class:** Not regulated for transportation
- 14.4 Packing group:** Not regulated for transportation
- 14.5 Environmental hazards:** Not regulated for transportation
- 14.6 Special precautions for user:** None
- 14.7 Transport in bulk according to Annex II of MARPOL and the IBC Code:** Not applicable

Section 15 Regulatory information

- 15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture**
US Federal and State Regulations

SARA 313 (Section 313, Title III reporting requirements)

No ingredients listed.

CERCLA (The Comprehensive Environmental Response, Compensation, and Liability Act) 40 CFR 302.4

Section 15 Regulatory information (Continued)

No ingredients listed.

California Proposition 65

Chemical which is known to the State of California to cause cancer

No ingredients listed.

Chemical which is known to the State of California to cause development toxicity

No ingredients listed.

Chemical which is known to the State of California to cause male reproductive toxicity

No ingredients listed.

Chemical which is known to the State of California to cause female reproductive toxicity

No ingredients listed.

Massachusetts Right To Know (RTK) List

No ingredients listed.

New Jersey Dept. of Health Right To Know (RTK) List

CAS # 124-43-6 Urea Hydrogen Peroxide

Pennsylvania Right To Know (RTK) List

No ingredients listed.

EU Regulations

This SDS complies with EC Regulations 1907/2006 (REACH) and amendments.

REACH 1907/2006 EC - Annex XIV - list of substances subject to authorisation.

Refer to Section 3

Canada

This product does not meet WHMIS criteria for hazardous materials.

15.2 Chemical safety assessment

A Chemical Safety Assessment has not been carried out.

Some hazardous ingredients listed in Section 15 are below the cutoff limits of 0.1% for carcinogen, mutagen and reproductive toxin and 1% for other health hazards required for reporting in Section 3.

Section 16 Other information

Safety Ratings	Flammability: 0 Health: 1 Reactivity with water: 0 Physical contact: 1	Code 0=None 1=Slight 2=Caution 3=Severe
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Revision changes

Updated Section 1.
 Updated Section 4.
 Updated Section 5.
 Updated Section 6.
 Updated Section 7.
 Updated Section 8.
 Updated Section 10.
 Updated Section 11.
 Updated Section 12.
 Updated Section 13.
 Updated Section 14.
 Updated Section 15.
 Updated Section 16.

Document version and issue/revision date

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 Last Revision Date (year/month/day) 2015/05/28
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Abbreviations and acronyms

ACGIH - American Conference of Governmental Industrial Hygienists
 ADR and RID - European Agreement Concerning The International Carriage Of Dangerous Goods By Road and Rail
 CERCLA - The Comprehensive Environmental Response, Compensation, and Liability Act
 CLP - Classification, Labeling and Packaging
 DFGMAK - Republic Germany's maximum exposure limit
 GHS - Globally Harmonized System
 HCS - Hazard Communication Standard
 IARC - International Agency for Research on Cancer
 IATA DGR - International Air Transport Association Dangerous Goods Regulation
 ICAO - International Civil Aviation Organization
 IMDG - International Maritime Dangerous Goods
 IOELVs - European Unions' Indicative Occupational Exposure Limit Values
 NIOSH - National Institute for Occupational Safety and Health
 NTP - National Toxicology Program
 OSHA - Occupational Safety and Health Administration
 PBT - Persistent bioaccumulative and toxic substances
 SARA - Superfund Amendments and Reauthorization Act
 TDG - Canadian Transportation Of Dangerous Goods Regulations.

Section 16 Other information (Continued)

UN GHS - United Nations Globally Harmonized System
US DOT - United States Department of Transportation
WHMIS - Workplace Hazardous Material Information System
vPvB - Very persistent and very bioaccumulative substances

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SAFETY DATA SHEET

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Section 1 Identification of the substance/mixture and of the company/undertaking

1.1 Product identifier

Product name Lumigen ECL Plus Solution B Chemiluminescent Reagent (Lumigen PS-3)
Part number Component of P/N PS3-100, PS3-1000

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

Product use For laboratory use only. See product literature for details.
 Restricted to professional users.

1.3 Details of the supplier of the safety data sheet

Manufacturer

Lumigen, Inc. (A Beckman Coulter company)
 22900 W. Eight Mile Road
 Southfield, MI 48033, U.S.A.
 Tel: 248-351-5600

e-mail address ksrashid@beckman.com

1.4 Emergency telephone number

Telephone number (24H) ChemTel Expert Assistance
 Hotline/MSDS Fax Access by dialing 800-255-3924 or for
 International +01-813-248-0585

Section 2 Hazards identification

2.1 Classification of the substance or mixture

Product description Mixture
 Colorless; Clear; Liquid; Alcohol odor

Classification according to EC 1272/2008 (CLP/GHS)

Flammable Liquids, Category 1
 Carcinogenicity Category 1
 Specific Target Organ Toxicity Single Exposure Category 3
 Eye Irritation Category 2

Classification according to US-OSHA (HCS 29 CFR 1910.1200) and UN GHS

Flammable Liquids, Category 1
 Carcinogenicity Category 1
 Specific Target Organ Toxicity Single Exposure Category 3
 Eye Irritation Category 2

Section 2 Hazards identification (Continued)

2.2 Label elements

According to EC 1272/2008 (CLP/GHS), US-OSHA and UN GHS
Hazardous ingredients

Ethyl Alcohol

1,4-Dioxane

Pictogram



Signal word

DANGER

Hazard statements

H224 Extremely flammable liquid and vapour.

H319 Causes serious eye irritation.

H335 May cause respiratory irritation.

H350 May cause cancer.

Precautionary statements

P201 Obtain special instructions before use.

P210 Keep away from heat, hot surfaces, and sparks. No smoking.

P233 Keep container tightly closed.

P240 Ground container and receiving equipment.

P241 Use explosion-proof electrical equipment.

P242 Use non-sparking tools.

P243 Take action to prevent static discharge.

P261 Avoid breathing vapours.

P271 Use only outdoors or in a well-ventilated area.

P280 Wear protective gloves, protective clothing and eye/face protection.

P303+P361+P353 IF ON SKIN (or hair): Rinse skin with water.

P304+P340 IF INHALED: Remove person to fresh air and keep at rest in a position comfortable for breathing.

P305+P351+P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

P308+P313 IF exposed or concerned: Get medical advice/attention.

P312 Call a POISON CENTER or doctor/physician if you feel unwell.

P337+P313 If eye irritation persists: Get medical advice/attention.

P370+P378 In case of fire: Use water spray for extinction.

P403+P233 Store in a well-ventilated place. Keep container tightly closed.

P403+P235 Store in a well-ventilated place. Keep cool.

P405 Store locked up.

P501 Dispose of contents/container in accordance with local/national regulations

Product label will display most significant precautionary statements.

2.3 Other hazards

Results of PBT and vPvB assessment

PBT: Not applicable.

vPvB: Not applicable.

See Section 11 Toxicological Information for more detailed health information.

Section 3 Composition and information on ingredients

3.2 Mixtures

Hazardous ingredients:		Hazard classification of pure ingredients		
Chemical name	% by wt.	EU 1272/2008 CLP/GHS	GHS	Note
1,4-Dioxane CAS # 123-91-1 EINECS # 204-661-8 Index # 603-024-00-5	50 - 60	Carc. 1B, H350 Eye Irrit. 2, H319 Flam. Liq. 2, H225 STOT SE 3, H335	Carc. 1B, H350 Eye Irrit. 2, H319 Flam. Liq. 2, H225 STOT SE 3, H335	
Ethyl Alcohol CAS # 64-17-5 EINECS # 200-578-6 Index # 603-002-00-5	40 - 50	Flam. Liq. 2, H225	Flam. Liq. 2, H225	

See section 8 for available Occupational exposure limits
 See Section 15 for additional regulatory information
 See Section 16 for description of hazard class and hazard statements

Section 4 First aid measures

4.1 Description of first aid measures

Inhalation	If product is inhaled, move exposed individual to fresh air. If individual is not breathing, begin artificial respiration by trained personnel and obtain medical attention immediately.
Eye contact	If product enters eyes, rinse eyes gently with water for 15 minutes or longer, making sure that the eyelid is held open. If pain or irritation occurs, obtain medical advice/attention.
Skin contact	In case of skin contact, rinse with water as a precaution.
Ingestion	If product is ingested, rinse mouth with water. If irritation or discomfort occurs, obtain medical attention immediately.

4.2 Most important symptoms and effects, both acute and delayed

Causes serious eye irritation.
 May cause respiratory irritation.
 May cause cancer.
 See Section 11 Toxicological Information for more detailed health information.

4.3 Indication of any immediate medical attention and special treatment needed

No further relevant information available. Refer to Section 4.1.

Section 5 Fire fighting measures

5.1 Extinguishing media

In case of fire use carbon dioxide (CO₂), dry chemical, water spray or foam.
 For large fires use extinguishing media suitable for surrounding fire.

Section 5 Fire fighting measures (Continued)

5.2 Special hazards arising from the substance or mixture

Special fire and explosion hazards

Flammable liquid and vapour.

Hazardous combustion products

No combustion products posing significant hazards are expected from this product.

5.3 Advice for fire fighters

Protective equipment

Self-contained breathing apparatus is recommended for firefighters in all chemical fire situations.

5.4 Additional information

No further relevant information available.

Section 6 Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures

Personal precautions

Observe general safety guidelines for protection; avoid eye and skin contact.
Wear protective gloves, protective clothing and eye/face protection.

6.2 Environmental precautions

Contain spill to prevent migration or evaporation.
Do not allow the undiluted product to enter sewers/surface or ground water.
Dispose of contents/container in accordance with local regulations

6.3 Methods and material for containment and cleaning up

Spill and leak procedures

Ventilate area. Remove all sources of ignition. Contain spill and collect with inert absorbent and place in a suitable container for disposal.
Dispose of all waste material in accordance with local guidelines.

6.4 Reference to other sections

Refer sections 8 and 13.

Section 7 Handling and storage

7.1 Precautions for safe handling Use good laboratory procedures; avoid eye and skin contact.

7.2 Conditions for safe storage, including any incompatibilities

To maintain product quality, store according to the instructions in the product labeling.
Store away from strong acids, strong bases, strong oxidizers and incompatible materials (section 10).

7.3 Specific end uses

No further relevant information available.

Section 8 Exposure controls and personal protection

8.1 Control parameters

Exposure limits

Section 8 Exposure controls and personal protection (Continued)

US OSHA

Ethyl Alcohol CAS # 64-17-5	1000 ppm TWA; 1900 mg/m ³ TWA
1,4-Dioxane CAS # 123-91-1	100 ppm TWA; 360 mg/m ³ TWA; prevent or reduce skin absorption

ACGIH

Ethyl Alcohol CAS # 64-17-5	1000 ppm STEL
1,4-Dioxane CAS # 123-91-1	20 ppm TWA; Skin - potential significant contribution to overall exposure by the cutaneous route

DFG MAK

Ethyl Alcohol CAS # 64-17-5	800 ppm Peak; 1520 mg/m ³ Peak; 200 ppm TWA MAK; 380 mg/m ³ TWA MAK
1,4-Dioxane CAS # 123-91-1	skin notation; 20 ppm Peak; 74 mg/m ³ Peak; 10 ppm TWA MAK; 37 mg/m ³ TWA MAK

Ireland

Ethyl Alcohol CAS # 64-17-5	1000 ppm STEL
1,4-Dioxane CAS # 123-91-1	20 ppm TWA (technical grade); 73 mg/m ³ TWA (technical grade); 60 ppm STEL (calculated); 219 mg/m ³ STEL (calculated); Potential for cutaneous absorption (technical grade)

IOELVs

1,4-Dioxane CAS # 123-91-1	20 ppm TWA; 73 mg/m ³ TWA
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NIOSH

Ethyl Alcohol CAS # 64-17-5	3300 ppm IDLH (10% LEL); 1000 ppm TWA; 1900 mg/m ³ TWA
1,4-Dioxane CAS # 123-91-1	500 ppm IDLH

Japan

1,4-Dioxane CAS # 123-91-1	1 ppm OEL; 3.6 mg/m ³ OEL
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Sweden (AFS 2015:7 and amendments)

Ethyl Alcohol CAS # 64-17-5	500 ppm TLV; 1000 mg/m ³ TLV; 1000 ppm Indicative STEL; 1900 mg/m ³ Indicative STEL
1,4-Dioxane CAS # 123-91-1	10 ppm TLV; 35 mg/m ³ TLV; 25 ppm Indicative STEL; 90 mg/m ³ Indicative STEL

8.2 Exposure controls

Engineering controls

No special engineering controls are required. Use with good general ventilation.

Eye protection

Safety glasses or chemical goggles should be worn to prevent eye contact.

Refer U.S. OSHA 29 CFR 1910.133, European Standard EN166 or appropriate government standards.

Section 8 Exposure controls and personal protection (Continued)

Skin protection	Wear impervious gloves such as Nitrile or equivalent and protective clothing. Refer to U.S. OSHA 29 CFR 1910.138, European Standard EN 374, EN 14605:2005+A1:2009 or appropriate government standards.
Respiratory protection	Under normal conditions, the use of this product should not require respiratory protection. If overexposure should occur and ventilation is not adequate to maintain airborne concentrations at acceptable levels, the use of respiratory protection should be evaluated by a qualified professional.

Section 9 Physical and chemical properties

9.1 Information on basic physical and chemical properties

Physical state	Liquid	Specific gravity (water=1.0)	0.914
Color	Colorless	Solubility	
Transparency	Clear	Water	Soluble
Odor	Alcohol odor	Organic	Not determined
pH	Not determined	Partition coefficient: n-octanol/water	Not determined
Freezing point	Not determined	Auto-ignition temp.	Not applicable
Boiling point	<35°C (95°F)	Decomposition temperature	Not determined
Flash point	< 0°C (32°F)	Percent volatiles	Not applicable
Evaporation rate	Not determined	Vapor pressure	Not determined
Flammability (solid, gas)	Not applicable	Viscosity	Not determined
Flammability limits	Not applicable	Explosive properties	Not applicable
Vapor density	Not determined	Oxidizing properties	Not determined
Odor threshold	Ethyl Alcohol 0.09 ppm odor threshold value (detectable) 1,4-Dioxane 0.8 ppm odor threshold value (detectable)		

9.2 Other information No further relevant information available.

Section 10 Stability and reactivity

10.1 Reactivity	No further relevant information available.
10.2 Chemical stability	The product is stable in accordance with recommended storage conditions.
10.3 Possibility of hazardous reactions	No further relevant information available.

Section 10 Stability and reactivity (Continued)

- 10.4 Conditions to avoid** To maintain product performance keep away from strong acids, strong bases, strong oxidizers.
Avoid exposure to heat and direct sunlight.
- 10.5 Incompatible materials** No further relevant information available.
- 10.6 Hazardous decomposition products**
When stored as labeled, no known hazardous decomposition products are formed during the shelf-life of this product.

Section 11 Toxicological information

11.1 Information on toxicological effects

Toxicity data for hazardous ingredients

Ethyl Alcohol
CAS # 64-17-5

Inhalation LC50 Rat 124.7 mg/L 4 h; Oral LD50 Rat 7060 mg/kg

1,4-Dioxane
CAS # 123-91-1

Dermal LD50 Rabbit 7600 mg/kg; Inhalation LC50 Rat 46 mg/L 2 h; Oral LD50 Rat 5170 mg/kg

Primary routes of exposure Eye contact, ingestion, inhalation, and skin contact.

Acute toxicity Not classified based on available data.

Skin corrosion/irritation Not classified based on available data.

Serious eye damage/eye irritation Causes serious eye irritation.

Respiratory/skin sensitization Not classified based on available data.

Carcinogenicity May cause cancer.

Germ cell mutagenicity Not classified based on available data.

Reproductive toxicity Not classified based on available data.

Specific target organ toxicity – single exposure

May cause respiratory irritation.

Specific target organ toxicity – repeated exposure

Not classified based on available data.

Aspiration hazard Not classified based on available data.

Other information No further relevant information available.

Section 12 Ecological information

12.1 Ecotoxicity

Fresh water species

Ethyl Alcohol CAS # 64-17-5	96 h LC50 Oncorhynchus mykiss: 12.0 - 16.0 mL/L [static]; 96 h LC50 Pimephales promelas: >100 mg/L [static]; 96 h LC50 Pimephales promelas: 13400 - 15100 mg/L [flow-through]
1,4-Dioxane CAS # 123-91-1	96 h LC50 Lepomis macrochirus: >10000 mg/L [static]; 96 h LC50 Lepomis macrochirus: >10000 mg/L [semi-static]; 96 h LC50 Pimephales promelas: 9850 mg/L [flow-through]; 96 h LC50 Pimephales promelas: 10306 - 14742 mg/L [static]; 96 h LC50 Pimephales promelas: 9850 mg/L
Microtox	No information available.

Water flea

Ethyl Alcohol CAS # 64-17-5	48 h LC50 Daphnia magna: 9268 - 14221 mg/L; 48 h EC50 Daphnia magna: 2 mg/L [Static]
1,4-Dioxane CAS # 123-91-1	48 h EC50 water flea: 163 mg/L [Static]

Fresh water algae

No information available.

12.2 Persistence and degradability Not determined for the product.

12.3 Bioaccumulation Not determined for the product.

12.4 Mobility in soil Not determined for the product.

12.5 Results of PBT and vPvB assessment

Not determined for the product. PBT: Not applicable, vPvB: Not applicable.

12.6 Other adverse effects No further relevant information available.

Section 13 Disposal considerations

13.1 Waste treatment methods

Product waste disposal

Chemical residues and remains should be routinely handled as special waste. This must be disposed of in compliance with anti-pollution and other laws of the country concerned. To ensure compliance we recommend that you contact the relevant (local) authorities and/or an approved waste-disposal company for information.

13.2 Additional information

Suggested European waste catalogue 18 01 06* - chemicals consisting of or containing dangerous substances. Dispose in accordance with national, state and local waste regulations.

Section 14 Transport information

Shipping information	IATA	IMDG	US DOT	European ADR	Canadian TDG
14.1 UN/ID number	1987	1987	1987	1987	PIN - 1987
14.2 Shipping name	Alcohols, n.o.s. (Ethanol solution)				
14.3 Hazard class	3 Flammable Liquids	3 Flammable liquids	3 Flammable liquid	3 Flammable Liquids	3 Flammable Liquids

Section 14 Transport information (Continued)

Subsidiary risk	None	None	None	None	None
Classification code	Not applicable	Not applicable	Not applicable	F1	Not applicable
14.4 Packing group	II	II	II	II	II
Special provisions	A3; A180	274	172	274, 601, 640C	16, 150
Additional information					
IATA ERG code	3L	Not applicable	Not applicable	Not applicable	Not applicable
EmS	Not applicable	F-E, S-D	Not applicable	Not applicable	Not applicable
NAERG code	Not applicable	Not applicable	127	Not applicable	127
14.5 Environmental hazards					
Marine pollutant	Not applicable	No	Not applicable	Not applicable	Not applicable
14.6 Special precautions for user					
Warning: Flammable liquid.					
14.7 Transport in bulk according to Annex II of MARPOL and the IBC Code					
Not applicable					

Section 15 Regulatory information

15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture US Federal and State Regulations

SARA 313 (Section 313, Title III reporting requirements)

CAS # 123-91-1 1,4-Dioxane 0.1% de minimis concentration

CERCLA (The Comprehensive Environmental Response, Compensation, and Liability Act) 40 CFR 302.4

CAS # 123-91-1 1,4-Dioxane

California Proposition 65

⚠ WARNING This product can expose you to chemical which is known to the State of California to cause cancer and/or reproductive harm. For more information go to www.P65Warnings.ca.gov

Chemical which is known to the State of California to cause cancer

CAS # 64-17-5 Ethyl Alcohol
CAS # 123-91-1 1,4-Dioxane

Chemical which is known to the State of California to cause development toxicity

CAS # 64-17-5 Ethyl Alcohol

Section 15 Regulatory information (Continued)

Chemical which is known to the State of California to cause male reproductive toxicity

No ingredients listed.

Chemical which is known to the State of California to cause female reproductive toxicity

No ingredients listed.

Massachusetts Right To Know (RTK) List

CAS # 64-17-5 Ethyl Alcohol
CAS # 123-91-1 1,4-Dioxane

New Jersey Dept. of Health Right To Know (RTK) List

CAS # 64-17-5 Ethyl Alcohol
CAS # 123-91-1 1,4-Dioxane

Pennsylvania Right To Know (RTK) List

CAS # 64-17-5 Ethyl Alcohol
CAS # 123-91-1 1,4-Dioxane

EU Regulations

This SDS complies with EC Regulations 1907/2006 (REACH) and amendments.

Water Hazard Class (Germany)

WGK 2, water endangering

REACH 1907/2006 EC - Annex XIV - list of substances subject to authorisation.

Refer to Section 3

Canada

This product meets WHMIS criteria for hazardous materials

15.2 Chemical safety assessment

A Chemical Safety Assessment has not been carried out.

Some hazardous ingredients listed in Section 15 are below the cutoff limits of 0.1% for carcinogen, mutagen and reproductive toxin and 1% for other health hazards required for reporting in Section 3.

Section 16 Other information

Safety Ratings	Flammability: 3 Health: 3 Reactivity with water: 0 Physical contact: 3	Code 0=None 1=Slight 2=Caution 3=Severe
Revision changes	Updated Section 1. Updated Section 2. Updated Section 3. Updated Section 4. Updated Section 5. Updated Section 6.	

Section 16 Other information (Continued)

Updated Section 7.
Updated Section 8.
Updated Section 10.
Updated Section 11.
Updated Section 12.
Updated Section 13.
Updated Section 14.
Updated Section 15.
Updated Section 16.

Document version and issue/revision date

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Last Revision Date (year/month/day) 2015/05/28
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Description of hazard class and hazard statements from Section 3

Carc. 1B - Carcinogenicity Category 1B
Eye Irrit. 2 - Eye Irritation Category 2
Flam. Liq. 2 - Flammable Liquids, Category 2
STOT SE 3 - Specific Target Organ Toxicity Single Exposure Category 3
H225 - Highly flammable liquid and vapour.
H319 - Causes serious eye irritation.
H335 - May cause respiratory irritation.
H350 - May cause cancer.

Abbreviations and acronyms

ACGIH - American Conference of Governmental Industrial Hygienists
ADR and RID - European Agreement Concerning The International Carriage Of Dangerous Goods By Road and Rail
CERCLA - The Comprehensive Environmental Response, Compensation, and Liability Act
CLP - Classification, Labeling and Packaging
DFGMAK - Republic Germany's maximum exposure limit
GHS - Globally Harmonized System
HCS - Hazard Communication Standard
IARC - International Agency for Research on Cancer
IATA DGR - International Air Transport Association Dangerous Goods Regulation
ICAO - International Civil Aviation Organization
IMDG - International Maritime Dangerous Goods
IOELVs - European Unions' Indicative Occupational Exposure Limit Values
NIOSH - National Institute for Occupational Safety and Health
NTP - National Toxicology Program
OSHA - Occupational Safety and Health Administration
PBT - Persistent bioaccumulative and toxic substances
SARA - Superfund Amendments and Reauthorization Act
TDG - Canadian Transportation Of Dangerous Goods Regulations.

Section 16 Other information (Continued)

UN GHS - United Nations Globally Harmonized System
US DOT - United States Department of Transportation
WHMIS - Workplace Hazardous Material Information System
vPvB - Very persistent and very bioaccumulative substances
EC50 - Effective Concentration, 50%
LC50 - Lethal Concentration, 50%
LD50 - Lethal Dose, 50%

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