

Material Safety Data Sheet



Column Activation and Wash Buffer (Part Number 17302, 17402) pH Binding Buffer (Part Number 17403)

1. Product and company identification

Common name : Column Activation and Wash Buffer (Part Number 17302, 17402) pH Binding Buffer (Part Number 17403)

Material uses : Not available.

Supplier/Manufacturer : Norgen Biotek Corp.
344 Merritt St.
St. Catharines, Ontario
Canada L2T 1K6
Tel: (905) 227-8848
Fax: (905) 227-1061

In case of emergency : CANUTEC (613) 996-6666

MSDS authored by: : Kemika XXI Inc. + 1-450-435-7475 11/07/2005

2. Hazards identification

Physical state : Liquid.

Color : Clear. (Light.)

Hazard status : This material is classified hazardous under the WHMIS Controlled Product Regulation in Canada.

Routes of entry : Dermal contact. Eye contact.

Potential acute health effects

Eyes : Irritating to eyes.

Skin : Irritating to skin.

Inhalation : Irritating to respiratory system.

Ingestion : May be harmful if swallowed.

Potential chronic health effects : Not classified or listed by IARC, NTP, OSHA, EU and ACGIH.

Medical conditions aggravated by over-exposure : Repeated skin exposure can produce local skin destruction or dermatitis. Repeated or prolonged contact with spray or mist may produce chronic eye irritation and severe skin irritation.

See toxicological information (section 11)

3. Composition/information on ingredients

Canada			
Name	CAS number	%	
Citric Acid	77-92-9	10 - 13	
Phosphoric acid	7664-38-2	5 - 7	
Sodium hydroxide	1310-73-2	5 - 7	

4. First aid measures

Eye contact : Check for and remove any contact lenses. In case of contact with eyes, rinse immediately with plenty of water. Get medical attention if symptoms occur.

Skin contact : Wash with soap and water. Get medical attention if symptoms occur.

Inhalation : If inhaled, remove to fresh air. If not breathing, give artificial respiration. Get medical attention if symptoms appear.

Ingestion : Do not induce vomiting. Never give anything by mouth to an unconscious person. Get medical attention if symptoms appear.

- Notes to physician** : No specific antidote. Medical staff must contact Poison Control Center.
- Protection of first-aiders** : No action shall be taken involving any personal risk or without suitable training.

5 . Fire-fighting measures

- Flammability of the product** : Non-flammable.
- Extinguishing media**
- Suitable** : Use an extinguishing agent suitable for the surrounding fire.
 - Not suitable** : None known.
- Special exposure hazards** : No specific hazard.
- Special protective equipment for fire-fighters** : Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode.

6 . Accidental release measures

- Personal precautions** : Immediately contact emergency personnel. Keep unnecessary personnel away. Use suitable protective equipment.
- Environmental precautions** : Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers.
- Methods for cleaning up** : If emergency personnel are unavailable, contain spilled material. For small spills, add absorbent (soil may be used in the absence of other suitable materials), scoop up material and place in a sealable, liquid-proof container for disposal. For large spills, dike spilled material or otherwise contain material to ensure runoff does not reach a waterway. Place spilled material in an appropriate container for disposal.

7 . Handling and storage

- Handling** : Do not ingest. Avoid contact with eyes, skin and clothing. Keep container closed. Use only with adequate ventilation. Avoid breathing vapor or mist. Wash thoroughly after handling.
- Storage** : Keep container tightly closed. Keep container in a cool, well-ventilated area.

8 . Exposure controls/personal protection

Canada

Product name
Phosphoric acid

Exposure limits

ACGIH TLV (Canada, 2003).

STEL: 3 mg/m³ 15 minute/minutes. Form: All forms.

TWA: 1 mg/m³ 8 hour/hours. Form: All forms.

Sodium hydroxide

ACGIH TLV (Canada, 9/2004).

CEIL: 2 mg/m³ Form: All forms.

CSST (Canada, 2001).

TWA: 2 mg/m³ 8 hour/hours.

- Engineering measures** : Use only with adequate ventilation. If user operations generate dust, fumes, vapor or mist, use process enclosures, local exhaust ventilation or other engineering controls to keep worker exposure to airborne contaminants below any recommended or statutory limits.
- Personal protection**
- Eyes** : Safety eyewear complying with an approved standard should be used when a risk assessment indicates this is necessary to avoid exposure to liquid splashes, mists, gases or dusts.
Recommended: Splash goggles.

- Skin** : Personal protective equipment for the body should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.
Body: Recommended: Lab coat.
- Respiratory** : A respirator is not needed under normal and intended conditions of product use.
- Hands** : Recommended: Disposable vinyl gloves.



- Personal protection in case of a large spill** : Safety glasses, goggles or face shield. Impervious gloves. Full suit. Boots. Wear NIOSH-approved self-contained breathing apparatus or equivalent and full protective gear.
- Hygiene measures** : Wash hands, forearms and face thoroughly after handling chemical products, before eating, smoking and using the lavatory and at the end of the working period. Appropriate techniques should be used to remove potentially contaminated clothing. Wash contaminated clothing before reusing. Ensure that eyewash stations and safety showers are close to the workstation location.

9 . Physical and chemical properties

- Physical state** : Liquid.
- Color** : Clear. (Light.)
- pH** : 6.5 [Acidic.]
- Boiling/condensation point** : Weighted average: 102.77°C (217°F)
- Melting/freezing point** : Weighted average: 0.11°C (32.2°F)
- Relative density** : Weighted average: 1.09 (Water = 1)
- Vapor pressure** : The highest known value is 2.3 kPa (17.5 mm Hg) (at 20°C) (Water).
- Vapor density** : The highest known value is 0.62 (Air = 1) (Water).
- Ionicity (in water)** : Amphoteric. (Water).
- Solubility** : Miscible in water.

10 . Stability and reactivity

- Stability and reactivity** : The product is stable.
- Incompatibility with various substances** : Reactive with oxidizing materials, organic materials and alkalis.
- Hazardous polymerization** : Will not occur.
- Conditions of reactivity** : None known.

11 . Toxicological information

Toxicity data

Product/ingredient name	Test	Result	Route	Species
Citric Acid	LD50	5040 mg/kg	Oral	Mouse
Phosphoric acid	LD50	1530 mg/kg	Oral	Rat
	LD50	2740 mg/kg	Dermal	Rabbit

- Other toxic effects on humans** : Irritating to eyes, respiratory system and skin.
- Specific effects**
- Carcinogenic effects** : No known significant effects or critical hazards.
- Mutagenic effects** : No known significant effects or critical hazards.

- Teratogenicity / Reproductive toxicity** : No known significant effects or critical hazards.
- Sensitization**
- Ingestion** : Irritating to mouth, throat and stomach.
- Inhalation** : Irritating to respiratory system.
- Eyes** : Irritating to eyes.
- Skin** : Irritating to skin.

12 . Ecological information

- Environmental precautions** : No known significant effects or critical hazards.
- Products of degradation** : These products are carbon oxides and water, phosphates. Some metallic oxides.
- Toxicity of the products of biodegradation** : The products of degradation are less toxic than the product itself.

13 . Disposal considerations

- Waste disposal** : The generation of waste should be avoided or minimized wherever possible. Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers. Disposal of this product, solutions and any by-products should at all times comply with the requirements of environmental protection and waste disposal legislation and any regional local authority requirements.

14 . Transport information

Regulatory information

UN/ IMDG/IATA TDG : Not regulated.

15 . Regulatory information

Canada

- WHMIS (Canada)** : Class D-2B: Material causing other toxic effects (Toxic) .IRRITANT.



DSL : All components listed.

This product has been classified according to the hazard criteria of the CPR and the MSDS contains all the information required by the CPR.

- International lists** : All components listed are listed on major international inventories or exempted from being listed in Australia (AICS), Europe (EINECS/ELINCS), Korea (TCCL), Japan (METI/MOL), Philippines (RA6969).

16 . Other information

Hazardous Material Information System (U.S.A.) :

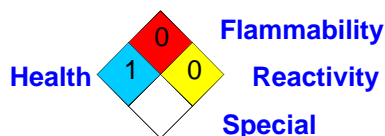
HMIS RATING

Health	1
Fire hazard	0
Physical Hazard	0
Personal protection	C

HAZARD RATINGS

- 4- Extreme
- 3- Serious
- 2- Moderate
- 1- Slight
- 0- Minimal

National Fire Protection Association (U.S.A.) :



References

- : ANSI Z400.1, MSDS Standard, 2004. - Manufacturer's Material Safety Data Sheet. - Canada Gazette Part II, Vol. 122, No. 2. Registration SOR/88-64, 31 December 1987. Hazardous Products Act "Ingredient Disclosure List" - Canadian Transport of Dangerous Goods, Regulations and Schedules, Clear Language version 2005.

Date of issue
Version

- : 11/07/2005
- : 1

Notice to reader

To the best of our knowledge, the information contained herein is accurate. However, neither the above named supplier nor any of its subsidiaries assumes any liability whatsoever for the accuracy or completeness of the information contained herein. Final determination of suitability of any material is the sole responsibility of the user. All materials may present unknown hazards and should be used with caution. Although certain hazards are described herein, we cannot guarantee that these are the only hazards that exist.

SAFETY DATA SHEET



Elution Buffer

1. Identification of the substance/preparation and of the company/undertaking

Product name : Elution Buffer **Manufacturer** : Norgen Biotek Corp.
344 Merritt St.
St. Catharines, Ontario
Canada L2T 1K6
Tel: (905) 227-8848
Fax: (905) 227-1061

Chemical product name : Not applicable. **Supplier** : Norgen Biotek Corp.
344 Merritt St.
St. Catharines, Ontario
Canada L2T 1K6
Tel: (905) 227-8848
Fax: (905) 227-1061

Material Uses : Elution buffer.

Synonyms : Not available. **Emergency telephone number** : Canada: CANUTEC-1-613-996-6666
US: CHEMTREC-1-800-424-9300

Chemical Formula : Not applicable.

Catalog#

10107, 10405, 10205, 10505, 10308, 10607, 17007, 17105, 17705, 17303

2. Composition / information on ingredients

Substance/Preparation : Preparation.

Chemical name	CAS No.	%	EC Number	Classification
United States 1) No hazardous ingredients.				
Germany 1) No hazardous ingredients. See Section 16 for the full text of the R Phrases declared above				
United Kingdom (UK) 1) No hazardous ingredients.				
Japan 1) No hazardous ingredients.				
Canada 1) No hazardous ingredients.				

This material is classified as non-hazardous under the United States OSHA regulation, the European DSD/DPD Directives and several countries specific requirements, in Japan and under the Canadian WHMIS regulation.

See Section 8 for Exposure Limits.
See Section 11 for Toxicological Data.
See Section 14 for UN Number.

3. Hazards identification

Physical State and Appearance : Liquid.

Emergency Overview : No specific hazard.
USE WITH CARE
Avoid contact with eyes, skin and clothing. Avoid breathing vapor or mist. Keep container closed. Use with adequate ventilation. Wash thoroughly after handling.

Routes of Entry : Absorbed through skin. Eye contact. Inhalation.
The preparation is not classified as dangerous according to Directive 1999/45/EC and its amendments.

Classification in Europe : Not classified.

Effects and symptoms

Inhalation : Slightly hazardous in case of inhalation (lung irritant).

Skin Contact : Slightly hazardous in case of skin contact (irritant). Non-sensitizer for skin.

Eye Contact : Slightly hazardous in case of eye contact (irritant).

Aggravating conditions : Repeated or prolonged exposure is not known to aggravate medical condition.

Date of issue : 3/26/2003.

Page: 1/5

4. First-aid measures

First-Aid measures

- Inhalation** : If inhaled, remove to fresh air. Get medical attention if symptoms appear.
- Ingestion** : Do not induce vomiting unless directed to do so by medical personnel. Never give anything by mouth to an unconscious person. If large quantities of this material are swallowed, call a physician immediately.
- Skin Contact** : Wash with soap and water. Get medical attention if irritation develops. Cold water may be used.
- Eye Contact** : Check for and remove any contact lenses. In case of contact, immediately flush eyes with plenty of water for at least 20 minutes. Cold water may be used. Get medical attention.
- Notes to physician** : Not available.
- Protection of first-aiders** : Not available.

5. Fire-fighting measures

Extinguishing Media

- Suitable** : Use extinguishing media suitable for surrounding materials.
- Unsuitable** : Not available.
- Unusual fire/explosion hazards** : Not available.
- Hazardous thermal (de)composition products** : Not applicable.
- Special fire-fighting procedures** : Fire fighters should wear positive pressure self-contained breathing apparatus (SCBA) and full turnout gear.
- Protection of fire-fighters** : Not applicable.

6. Accidental release measures

- Personal precautions** : Splash goggles. Full suit. Boots. Gloves. Suggested protective clothing might not be sufficient; consult a specialist before handling this product.
- Environmental Precautions and Clean-up Methods** : Absorb with an inert material and put the spilled material in an appropriate waste disposal. Finish cleaning by spreading water on the contaminated surface and allow to evacuate through the sanitary system.

Note: See section 8 for personal protective equipment and section 13 for waste disposal.

7. Handling and storage

- Handling** : Avoid contact with eyes. Wear suitable protective clothing. If you feel unwell, seek medical attention and show the label when possible. Keep away from incompatibles such as oxidizing agents.
- Storage** : Keep container tightly closed. Keep container in a cool, well-ventilated area. Preferred storage condition is room temperature. For long-term storage keep at 4°C.
- Germany - Storage Code** : Not available.

8. Exposure controls/personal protection

- Engineering measures** : Good general ventilation should be sufficient to control airborne levels.
- Hygiene measures** : Wash hands after handling compounds and before eating, smoking, using lavatory, and at the end of day.

<u>Ingredient Name</u>	<u>Occupational Exposure Limits</u>
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United States

1) No hazardous ingredients.

Germany

1) No hazardous ingredients.

United Kingdom (UK)

1) No hazardous ingredients.

Japan

1) No hazardous ingredients.

Canada

1) No hazardous ingredients.

- Recommended monitoring procedures** : Not available.

Personal protective equipment

- Respiratory system** : Vapor respirator. Be sure to use an approved/certified respirator or equivalent.
- Skin and body** : Lab coat.
- Hands** : Gloves.
- Eyes** : Splash goggles.

9. Physical and chemical properties

Physical state	: Liquid.
Color	: Colorless.
Odor	: Odorless.
pH	: 10 to 13 [Basic.]
Boiling Point	: The lowest known value is 100°C (212°F) (Water).
Melting Point	: May start to solidify at 0°C (32°F) based on data for: Water.
Flash point	: Not applicable.
Explosive properties	: Risks of explosion of the product in presence of mechanical impact: Not applicable. Risks of explosion of the product in presence of static discharge: Not applicable.
Density	: The only known value is 1 (Water = 1) (Water).
Solubility	: Easily soluble in cold water, hot water, methanol, acetone.

10. Stability and reactivity

Stability	: The product is stable at room temperature.
Conditions to avoid	: The product is unstable at a temperature below 4°C and above 100°C. See Section 7 for storage conditions.
Materials to avoid	: Reactive with oxidizing agents, acids.
Hazardous Decomposition Products	: Not applicable.

11. Toxicological information

Acute toxicity

<u>Ingredient Name</u>	<u>Test</u>	<u>Result</u>	<u>Route</u>	<u>Species</u>
No hazardous ingredients.				

Skin irritation	: Non-irritant for skin.
Eye irritation	: Slightly hazardous in case of eye contact (irritant).
Sensitization	: Non-sensitizer for skin.

Chronic toxicity

: Repeated or prolonged exposure is not known to aggravate medical condition.	
Carcinogenic Effects	: Not available.
Mutagenic Effects	: Not available.
Reproduction toxicity	: Not available.
Developmental and Teratogenic Effects	: Not available.

12. Ecological information

Ecotoxicity Data

<u>Ingredient Name</u>	<u>Species</u>	<u>Period</u>	<u>Result</u>
No hazardous ingredients.			

Mobility	: Not available.
Persistence/degradability	: Not available.
Bioaccumulative potential	: Not available.
Soil/Water Partition Coefficient (K_{oc})	: Not available.

13. Disposal considerations

Methods of disposal	: Waste must be disposed of in accordance with federal, state and local environmental control regulations.
Waste Classification	: Not applicable.
European Waste Catalogue (EWC)	: Not available.
Hazardous Waste	: To present knowledge of the supplier, this product is not regarded as hazardous waste as defined by EU Directive 94/904/EC.

14. Transport information

International transport regulations

Elution Buffer

Regulatory Information	Classification
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DOT (United States)	Not regulated.
ADR/RID (Europe)	Not regulated.
ADN (Europe)	Not regulated.
Road Law (Japan)	Not regulated.
TDG (Canada)	Not regulated.
IATA-DGR	Not regulated.
IMDG	Not regulated.

15. Regulatory information

HCS (United States) : Not controlled under the HCS (United States).

U.S. Federal Regulations : TSCA 8(b) inventory: Components listed.
SARA 302/304/311/312 extremely hazardous substances: No ingredient was found.
SARA 302/304 emergency planning and notification: No ingredient was found.
SARA 302/304/311/312 hazardous chemicals: No ingredient was found.
SARA 311/312 MSDS distribution - chemical inventory - hazard identification: No ingredient was found.
SARA 313 toxic chemical notification and release reporting: No ingredient was found.
Clean Water Act (CWA) 307: No ingredient was found.
Clean Water Act (CWA) 311: No ingredient was found.
Clean Air Act (CAA) 112 accidental release prevention: No ingredient was found.
Clean Air Act (CAA) 112 regulated flammable substances: No ingredient was found.
Clean Air Act (CAA) 112 regulated toxic substances: No ingredient was found.

State Regulations :
California Prop. 65: No ingredient was found.

EU Regulations

Risk Phrases : This product is not classified according to the EU regulations.

Safety Phrases : Not applicable.

Contains : No hazardous ingredients at or above concentration to be considered.

Product Use : Classification and labeling have been performed according to EU directives 67/548/EEC, 88/379/EEC including amendments and the intended use.
- Consumer applications.

National regulations

Germany

Employment restrictions in accordance with § 15b of the Hazardous Substance Ordinance : No.

Hazardous Incident Ordinance : No.

Ordinance on Combustible Liquids : Class: Omitted

Hazard class for water (GWK) : 1

United Kingdom (UK)

VOC Content (Retail Use) : Not applicable.

VOC Content (Industrial Use) : Contains 0 wt% VOC.

Japan Control Laws : This product does not contain hazardous ingredient at a concentration level for which a declaration is needed.

WHMIS (Canada) : Not controlled under WHMIS (Canada).
DSL/NDL: Components listed.

This product has been classified in accordance with the hazard criteria of the CPR and the MSDS contains all the information required by the CPR.

16. Other information

US Label Requirements : USE WITH CARE

Hazardous Material Information System (U.S.A.)

Health	1
Fire Hazard	0
Reactivity	0
Personal Protection	H

National Fire Protection Association (U.S.A.)



Europe Label :

Japan Label : This product does not contain hazardous ingredient at a concentration level for which a declaration is needed.

WHMIS Label :

HISTORY

Date of printing : 3/26/2003.
 Date of issue : 3/26/2003.
 Date of Previous Issue : No Previous Validation.
 Version : 1
 Prepared by : Kemika XXI inc.

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Material Safety Data Sheet

Neutralizer (Part Number 17304)

1. Product and company identification

Common name : Neutralizer (Part Number 17304)
Material uses : Not available.
Supplier/Manufacturer : Norgen Biotek Corp.
344 Merritt St.
St. Catharines, Ontario
Canada L2T 1K6
Tel: (905) 227-8848
Fax: (905) 227-1061
In case of emergency : CANUTEC (613) 996-6666
MSDS authored by: : Kemika XXI Inc. + 1-450-435-7475

11/07/2005

2. Hazards identification

Physical state : Liquid.
Hazard status : This material is classified hazardous under the WHMIS Controlled Product Regulation in Canada.
Routes of entry : Dermal contact. Eye contact. Ingestion.
Potential acute health effects
Eyes : Irritating to eyes.
Skin : Harmful in contact with skin. Irritating to skin.
Inhalation : Irritating to respiratory system.
Ingestion : May be harmful if swallowed.
Potential chronic health effects : Not applicable.
Medical conditions aggravated by over-exposure : Repeated skin exposure can produce local skin destruction or dermatitis. Repeated or prolonged contact with spray or mist may produce chronic eye irritation and severe skin irritation.
See toxicological information (section 11)

3. Composition/information on ingredients

Canada

Name	CAS number	%
Acetic acid.	64-19-7	5 - 7

4. First aid measures

Eye contact : Check for and remove any contact lenses. In case of contact with eyes, rinse immediately with plenty of water. Get medical attention if symptoms occur.
Skin contact : Wash with soap and water. Get medical attention if symptoms occur.
Inhalation : If inhaled, remove to fresh air. If not breathing, give artificial respiration. Get medical attention if symptoms appear.
Ingestion : Do not induce vomiting. Never give anything by mouth to an unconscious person. Get medical attention if symptoms appear.
Notes to physician : No specific antidote. Medical staff must contact Poison Control Center.
Protection of first-aiders : No action shall be taken involving any personal risk or without suitable training.

5 . Fire-fighting measures

Flammability of the product : Non-flammable.

Extinguishing media

Suitable : Use an extinguishing agent suitable for the surrounding fire.

Not suitable : None known.

Special exposure hazards : No specific hazard.

Special protective equipment for fire-fighters : Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode.

6 . Accidental release measures

Personal precautions : Immediately contact emergency personnel. Keep unnecessary personnel away. Use suitable protective equipment.

Environmental precautions : Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers.

Methods for cleaning up : If emergency personnel are unavailable, contain spilled material. For small spills, add absorbent (soil may be used in the absence of other suitable materials), scoop up material and place in a sealable, liquid-proof container for disposal. For large spills, dike spilled material or otherwise contain material to ensure runoff does not reach a waterway. Place spilled material in an appropriate container for disposal.

7 . Handling and storage

Handling : Avoid contact with eyes, skin and clothing. Keep container closed. Use only with adequate ventilation. Avoid breathing vapor or mist. Wash thoroughly after handling.

Storage : Keep container tightly closed. Keep container in a cool, well-ventilated area.

8 . Exposure controls/personal protection

Canada

Product name

Acetic Acid Glacial

Exposure limits

ACGIH TLV (Canada, 9/2004).

STEL: 37 mg/m³ 15 minute/minutes. Form: All forms.

STEL: 15 ppm 15 minute/minutes. Form: All forms.

TWA: 25 mg/m³ 8 hour/hours. Form: All forms.

TWA: 10 ppm 8 hour/hours. Form: All forms.

Engineering measures : Use only with adequate ventilation. If user operations generate dust, fumes, vapor or mist, use process enclosures, local exhaust ventilation or other engineering controls to keep worker exposure to airborne contaminants below any recommended or statutory limits.

Personal protection

Eyes

: Safety eyewear complying with an approved standard should be used when a risk assessment indicates this is necessary to avoid exposure to liquid splashes, mists, gases or dusts.
Recommended: Splash goggles.

Skin

: Personal protective equipment for the body should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.
Body: Recommended: Lab coat.

Respiratory

: A respirator is not needed under normal and intended conditions of product use.

Hands

: Recommended: Disposable vinyl gloves.



- Personal protection in case of a large spill** : Safety glasses, goggles or face shield. Impervious gloves. Full suit. Boots. Wear NIOSH-approved self-contained breathing apparatus or equivalent and full protective gear.
- Hygiene measures** : Wash hands, forearms and face thoroughly after handling chemical products, before eating, smoking and using the lavatory and at the end of the working period. Appropriate techniques should be used to remove potentially contaminated clothing. Wash contaminated clothing before reusing. Ensure that eyewash stations and safety showers are close to the workstation location.

9 . Physical and chemical properties

- Physical state** : Liquid.
- pH** : Acidic.
- Boiling/condensation point** : Weighted average: 100.98°C (213.8°F)
- Melting/freezing point** : Weighted average: 0.92°C (33.7°F)
- Relative density** : Weighted average: 1 (Water = 1)
- Vapor pressure** : Weighted average: 2.26 kPa (16.95 mm Hg) (at 20°C)
- Vapor density** : Weighted average: 0.7 (Air = 1)
- Odor threshold** : The lowest known value is 0.48 ppm (Acetic Acid)
- Evaporation rate** : 1.34 (Acetic Acid Glacial) compared with Butyl acetate.
- Ionicity (in water)** : Amphoteric. (Water).
- Solubility** : Miscible in water.

10 . Stability and reactivity

- Stability and reactivity** : The product is stable.
- Incompatibility with various substances** : Reactive with oxidizing materials and alkalis.
- Hazardous polymerization** : Will not occur.
- Conditions of reactivity** : None known.

11 . Toxicological information

Toxicity data

Product/ingredient name	Test	Result	Route	Species
Acetic acid.	LD50	3310 mg/kg	Oral	Rat
	LD50	1060 mg/kg	Dermal	Rabbit
	LC50	5620 mg/m ³ (1 hour/hours)	Inhalation	Mouse

- Other toxic effects on humans** : Irritating to eyes, respiratory system and skin.
- Specific effects**
- Carcinogenic effects** : No known significant effects or critical hazards.
- Mutagenic effects** : No known significant effects or critical hazards.
- Teratogenicity / Reproductive toxicity** : No known significant effects or critical hazards.
- Sensitization**
- Ingestion** : Irritating to mouth, throat and stomach.
- Inhalation** : Irritating to respiratory system.
- Eyes** : Irritating to eyes.

Skin : Irritating to skin.

12 . Ecological information

Ecotoxicity data

Product/ingredient name	Species	Period	Result
Acetic acid.	Daphnia magna (EC50)	48 hour/hours	65 mg/l
	Lepomis macrochirus (LC50)	96 hour/hours	75 mg/l
	Pimephales promelas (LC50)	96 hour/hours	79 mg/l
	Pimephales promelas (LC50)	96 hour/hours	88 mg/l

Environmental precautions : No known significant effects or critical hazards.

Products of degradation : These products are carbon oxides and water.

Toxicity of the products of biodegradation : The product itself and its products of degradation are not toxic.

13 . Disposal considerations

Waste disposal : The generation of waste should be avoided or minimized wherever possible. Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers. Disposal of this product, solutions and any by-products should at all times comply with the requirements of environmental protection and waste disposal legislation and any regional local authority requirements.

14 . Transport information

Regulatory information

UN/ IMDG/IATA TDG : Not regulated.

15 . Regulatory information

Canada

WHMIS (Canada) : Class D-2B: Material causing other toxic effects (Toxic)
.IRRITANT.



DSL : All components listed.

This product has been classified according to the hazard criteria of the CPR and the MSDS contains all the information required by the CPR.

International lists : All components listed are listed on major international inventories or exempted from being listed in Australia (AICS), Europe (EINECS/ELINCS), Korea (TCCL), Japan (METI/MOL), Philippines (RA6969).

16 . Other information

Hazardous Material Information System (U.S.A.) :

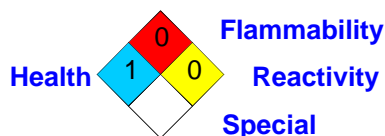
HMIS RATING

Health	1
Fire hazard	0
Physical Hazard	0
Personal protection	C

HAZARD RATINGS

- 4- Extreme
- 3- Serious
- 2- Moderate
- 1- Slight
- 0- Minimal

National Fire Protection Association (U.S.A.) :



References

- : ANSI Z400.1, MSDS Standard, 2004. - Manufacturer's Material Safety Data Sheet. - Canada Gazette Part II, Vol. 122, No. 2. Registration SOR/88-64, 31 December 1987. Hazardous Products Act "Ingredient Disclosure List" - Canadian Transport of Dangerous Goods, Regulations and Schedules, Clear Language version 2005.

Date of issue
Version

- : 11/07/2005
- : 1

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