Safety Data Sheet

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

1.1 Product identifier

Product Name • **Image Mate SP 310**

Product Description • White liquid.

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

Relevant identified use(s) • Adhesive

1.3 Details of the supplier of the safety data sheet

Manufacturer • IKONICS Corporation
4832 Grand Ave.
Duluth, MN 55807
United States
www.ikonics.com
sds@ikonics.com

Telephone (General) • (218) 628-2217

Telephone (General) • (800) 328-4261 - Toll free

1.4 Emergency telephone number

Chemtrec
- 1-800-424-9300 - Within USA and Canada
- +1 703-527-3887 - Outside USA and Canada (collect calls accepted)

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 • Carcinogenicity 2 - H351

2.2 Label Elements

CLP

WARNING

Hazard statements • H351 - Suspected of causing cancer via Inhalation

Precautionary statements

Prevention • P201 - Obtain special instructions before use.
P202 - Do not handle until all safety precautions have been read and understood.
P280 - Wear protective gloves/protective clothing/eye protection/face protection.

Response • P301+P312 - IF SWALLOWED: Immediately call a POISON CENTER or doctor/physician if you feel unwell.
P302+P352 - IF ON SKIN: Wash with plenty of soap and 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.

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

Storage/Disposal • P405 - Store locked up.
P501 - Dispose of content and/or container in accordance with local, regional, national, and/or international regulations.

2.3 Other Hazards

CLP • No data available

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 • Carcinogenicity 2

2.2 Label elements

UN GHS

WARNING

Hazard statements • Suspected of causing cancer via Inhalation

Precautionary statements

Prevention • Obtain special instructions before use.
Do not handle until all safety precautions have been read and understood.
Wear protective gloves/protective clothing/eye protection/face protection.

Response • IF SWALLOWED: Immediately call a POISON CENTER or doctor/physician if you feel unwell.
IF ON SKIN: Wash with plenty of soap and water.
IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
IF exposed or concerned: Get medical advice/attention.

Storage/Disposal • Store locked up.
Dispose of content and/or container in accordance with local, regional, national, and/or international regulations.

2.3 Other hazards

UN GHS • No data available

United States (US)

According to: OSHA 29 CFR 1910.1200 HCS

2.1 Classification of the substance or mixture

OSHA HCS 2012 • Carcinogenicity 2

2.2 Label elements

OSHA HCS 2012

WARNING

Hazard statements • Suspected of causing cancer via Inhalation

Precautionary statements

Prevention • Obtain special instructions before use.
Do not handle until all safety precautions have been read and understood.
Wear protective gloves/protective clothing/eye protection/face protection.

Response • IF SWALLOWED: Immediately call a POISON CENTER or doctor/physician if you feel unwell.
IF ON SKIN: Wash with plenty of soap and water.
IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
IF exposed or concerned: Get medical advice/attention.

Storage/Disposal • Store locked up.
Dispose of content and/or container in accordance with local, regional, national, and/or international regulations.

2.3 Other hazards

OSHA HCS 2012 • No data available

2.4 Other information

NFPA

See Section 12 for Ecological Information.

Section 3 - Composition/Information on Ingredients

3.1 Substances

3.2 Mixtures

Composition					
Chemical Name	**Identifiers**	**%**	**LD50/LC50**	**Classifications According to Regulation/Directive**	**Comments**
1,2-Propanediol	**CAS:**57-55-6 **EC Number:**200-338-0 **EINECS:**200-338-0	0.5% TO 1%	Ingestion/Oral-Rat LD50 • 20 g/kg Skin-Rabbit LD50 • 20800 mg/kg	**UN GHS:** Skin Irrit. 3; Eye Irrit. 2A **EU CLP:** **OSHA HCS 2012:**	NDA
Acetic acid, vinyl ester	**CAS:**108-05-4 **EC Number:**203-545-4 **UN:**UN1301 **EINECS:**203-545-4	0.2% TO 0.3%	Ingestion/Oral-Rat LD50 • 2900 mg/kg Inhalation-Rat LC50 • 11400 mg/m³ 4 Hour(s) Skin-Rabbit LD50 • 2335 mg/kg	**UN GHS:** Flam. Liq. 2 **EU CLP:** EU CLP, Annex VI, Table 3.1: Flam. Liq. 2, H225; Carc. 2, H351; Acute Tox. 4, H332; STOT SE 3, H335 **OSHA HCS 2012:**	NDA
Diethylene glycol monobutyl ether	**CAS:**112-34-5 **EC Number:**203-961-6 **EINECS:**203-961-6	0.1% TO 0.2%	Ingestion/Oral-Rat LD50 • 5660 mg/kg Skin-Rabbit LD50 • 2700 mg/kg	**UN GHS:** Eye Irrit. 2A **EU CLP:** EU CLP, Annex VI, Table 3.1: Eye Irrit. 2, H319 **OSHA HCS 2012:**	NDA

Key to abbreviations
= See Section 16 for full text of R and S phrases.

See Section 11 for Toxicological Information.

Section 4 - First Aid Measures

4.1 Description of first aid measures

Inhalation
- IF INHALED: If breathing is difficult, remove victim to fresh air and keep at rest in a position comfortable for breathing. If not breathing, give artificial respiration and call 911 or emergency medical service.

Skin
- IF ON SKIN: Wash with plenty of soap and water. If skin irritation occurs: Get medical advice/attention.

Eye
- IF IN EYES: 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.

Ingestion
- If swallowed, do NOT induce vomiting unless directed to do so by medical personnel. Rinse mouth. Never give anything by mouth to an unconscious person. If large quantities are swallowed, call a physician immediately.

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

Antidotes
- No data available.

Section 5 - Firefighting Measures

5.1 Extinguishing media

Suitable Extinguishing Media
- SMALL FIRES: Dry chemical, CO2, water spray or regular foam.
  LARGE FIRE: Water spray, fog or regular foam.

Unsuitable Extinguishing Media
- No data available

Firefighting Procedures
- Fire fighters should wear complete protective clothing including self-contained breathing apparatus.
  Keep unauthorized personnel away.
  Ventilate closed spaces before entering.
  LARGE FIRES: Use extinguishing agent suitable for type of surrounding fire.

5.2 Special hazards arising from the substance or mixture

Unusual Fire and Explosion Hazards
- Some of these materials may burn, but most do not ignite readily.

Hazardous Combustion Products
- Products of combustion include: carbon oxides (COx).

5.3 Advice for firefighters

- Structural firefighters' protective clothing provides limited protection in fire situations ONLY; it is not effective in spill situations where direct contact with the substance is possible.
  Wear chemical protective clothing that is specifically recommended by the manufacturer. It may provide little or no thermal protection.
  Wear positive pressure self-contained breathing apparatus (SCBA).

Section 6 - Accidental Release Measures

6.1 Personal precautions, protective equipment and emergency procedures

Personal Precautions
- Do not touch or walk through spilled material. Ventilate enclosed areas.

Emergency Procedures
- No emergency procedures are expected to be necessary if material is used under ordinary conditions as recommended. Use normal clean up procedures.

6.2 Environmental precautions

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

6.3 Methods and material for containment and cleaning up

Containment/Clean-up Measures

- Use appropriate Personal Protective Equipment (PPE)
  Contain and/or absorb spill with inert material (e.g. sand, vermiculite), then place in suitable container.

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.

7.2 Conditions for safe storage, including any incompatibilities

Storage

- Store away from extreme heat. Do not freeze. Keep container closed when not in use.

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**	**Argentina**	**Australia**	**Belgium**	**Canada Alberta**
Diethylene glycol monobutyl ether (112-34-5)	STELs	Not established	Not established	Not established	15 ppm STEL; 101.2 mg/m3 STEL	Not established
	TWAs	10 ppm TWA (inhalable fraction and vapor)	Not established	Not established	10 ppm TWA; 67.5 mg/m3 TWA	Not established
Acetic acid, vinyl ester (108-05-4)	STELs	15 ppm STEL	15 ppm STEL [CMP-CPT]	20 ppm STEL; 70 mg/m3 STEL	10 ppm STEL; 35.2 mg/m3 STEL	15 ppm STEL; 53 mg/m3 STEL
	TWAs	10 ppm TWA	10 ppm TWA [CMP]	10 ppm TWA; 35 mg/m3 TWA	5 ppm TWA; 17.6 mg/m3 TWA	10 ppm TWA; 35 mg/m3 TWA
1,2-Propanediol (57-55-6)	TWAs	Not established	Not established	150 ppm TWA (total vapour and particulates); 474 mg/m3 TWA (total vapour and particulates); 10 mg/m3 TWA (particulates only)	Not established	Not established

Exposure Limits/Guidelines (Con't.)						
	Result	**Canada British Columbia**	**Canada Manitoba**	**Canada New Brunswick**	**Canada Northwest Territories**	**Canada Nova Scotia**
Diethylene glycol monobutyl ether (112-34-5)	TWAs	Not established	10 ppm TWA (inhalable fraction and vapor)	Not established	Not established	10 ppm TWA (inhalable fraction and vapor)
Acetic acid, vinyl ester (108-05-4)	STELs	15 ppm STEL	15 ppm STEL	15 ppm STEL; 53 mg/m3 STEL	20 ppm STEL; 70 mg/m3 STEL	15 ppm STEL
	TWAs	10 ppm TWA	10 ppm TWA	10 ppm TWA; 35 mg/m3 TWA	10 ppm TWA; 35 mg/m3 TWA	10 ppm TWA

Exposure Limits/Guidelines (Con't.)						
	Result	**Canada Nunavut**	**Canada Ontario**	**Canada Quebec**	**Canada Saskatchewan**	**Canada Yukon**
Acetic acid, vinyl ester (108-05-4)	STELs	20 ppm STEL; 70 mg/m3 STEL	15 ppm STEL	15 ppm STEV; 53 mg/m3 STEV	15 ppm STEL	20 ppm STEL; 60 mg/m3 STEL
	TWAs	10 ppm TWA; 35 mg/m3 TWA	10 ppm TWA	10 ppm TWAEV; 35 mg/m3 TWAEV	10 ppm TWA	10 ppm TWA; 30 mg/m3 TWA

1,2-Propanediol (57-55-6)	TWAs	Not established	10 mg/m3 TWA (for assessing the visibility in a work environment where 1,2-Propylene glycol aerosol is present, aerosol only); 50 ppm TWA (aerosol and vapor); 155 mg/m3 TWA (aerosol and vapor)	Not established	Not established	Not established

Exposure Limits/Guidelines (Con't.)

	Result	China	Denmark	Europe	Finland	France
Diethylene glycol monobutyl ether (112-34-5)	STELs	Not established	Not established	15 ppm STEL; 101.2 mg/m3 STEL	Not established	15 ppm STEL [VLCT] (indicative limit); 101.2 mg/m3 STEL [VLCT] (indicative limit)
	TWAs	Not established	10 ppm TWA; 68 mg/m3 TWA	10 ppm TWA; 67.5 mg/m3 TWA	10 ppm TWA; 68 mg/m3 TWA	10 ppm TWA [VME] (indicative limit); 67.5 mg/m3 TWA [VME] (indicative limit)
Acetic acid, vinyl ester (108-05-4)	STELs	15 mg/m3 STEL	Not established	Not established	10 ppm STEL; 35 mg/m3 STEL	35.2 mg/m3 STEL [VLCT]; 10 ppm STEL [VLCT]
	TWAs	10 mg/m3 TWA	5 ppm TWA; 18 mg/m3 TWA	Not established	5 ppm TWA; 18 mg/m3 TWA	5 ppm TWA [VME]; 17.6 mg/m3 TWA [VME]

Exposure Limits/Guidelines (Con't.)

	Result	Germany DFG	Germany TRGS	Indonesia	Ireland	Italy
Diethylene glycol monobutyl ether (112-34-5)	STELs	Not established	Not established	Not established	15 ppm STEL; 101.2 mg/m3 STEL	15 ppm STEL; 101.2 mg/m3 STEL
	TWAs	Not established	10 ppm TWA AGW (The risk of damage to the embryo or fetus can be excluded when AGW and BGW values are observed, exposure factor 1.5); 67 mg/m3 TWA AGW (The risk of damage to the embryo or fetus can be excluded when AGW and BGW values are observed, exposure factor 1.5)	Not established	10 ppm TWA; 67.5 mg/m3 TWA	10 ppm TWA; 67.5 mg/m3 TWA
	Ceilings	15 ppm Peak; 100.5 mg/m3 Peak	Not established	Not established	Not established	Not established
	MAKs	10 ppm TWA MAK; 67 mg/m3 TWA MAK	Not established	Not established	Not established	Not established
Acetic acid, vinyl ester (108-05-4)	TWAs	Not established	5 ppm TWA AGW (exposure factor 2); 18 mg/m3 TWA AGW (exposure factor 2)	10 ppm TWA; 35 mg/m3 TWA	10 ppm TWA; 30 mg/m3 TWA	Not established
	STELs	Not established	Not established	Not established	20 ppm STEL; 60 mg/m3 STEL	Not established
1,2-Propanediol (57-55-6)	TWAs	Not established	Not established	Not established	150 ppm TWA (total vapour and particulates); 470	Not established

					mg/m3 TWA (total vapour and particulates); 10 mg/m3 TWA (particulate)	

Exposure Limits/Guidelines (Con't.)						
	Result	**Korea**	**Mexico**	**Netherlands**	**New Zealand**	**NIOSH**
Diethylene glycol monobutyl ether (112-34-5)	STELs	Not established	Not established	100 mg/m3 STEL	Not established	Not established
	TWAs	Not established	Not established	50 mg/m3 TWA	Not established	Not established
Acetic acid, vinyl ester (108-05-4)	STELs	15 ppm STEL (Serial No. 242)	20 ppm STEL [LMPE-CT]; 60 mg/m3 STEL [LMPE-CT]	36 mg/m3 STEL	20 ppm STEL; 70 mg/m3 STEL	Not established
	TWAs	10 ppm TWA (Serial No. 242)	10 ppm TWA LMPE-PPT; 30 mg/m3 TWA LMPE-PPT	18 mg/m3 TWA	10 ppm TWA; 35 mg/m3 TWA	Not established
	Ceilings	Not established	Not established	Not established	Not established	4 ppm Ceiling (15 min); 15 mg/m3 Ceiling (15 min)
1,2-Propanediol (57-55-6)	TWAs	Not established	Not established	Not established	150 ppm TWA (particulates and vapour); 474 mg/m3 TWA (particulates and vapour); 10 mg/m3 TWA (particulates only)	Not established

Exposure Limits/Guidelines (Con't.)						
	Result	**Norway**	**Poland**	**Portugal**	**Russia**	**Singapore**
Diethylene glycol monobutyl ether (112-34-5)	TWAs	10 ppm TWA; 68 mg/m3 TWA	67 mg/m3 TWA [NDS]	Not established	Not established	Not established
	STELs	Not established	100 mg/m3 STEL [NDSCh]	Not established	Not established	Not established
Acetic acid, vinyl ester (108-05-4)	TWAs	5 ppm TWA; 17.6 mg/m3 TWA	10 mg/m3 TWA [NDS]	10 ppm TWA [VLE-MP]	10 mg/m3 TWA (vapor)	10 ppm PEL; 35 mg/m3 PEL
	STELs	Not established	30 mg/m3 STEL [NDSCh]	15 ppm STEL [VLE-CD	30 mg/m3 STEL (vapor)	15 ppm STEL; 53 mg/m3 STEL
1,2-Propanediol (57-55-6)	TWAs	25 ppm TWA; 79 mg/m3 TWA	Not established	Not established	Not established	Not established

Exposure Limits/Guidelines (Con't.)						
	Result	**South Africa**	**Spain**	**Sweden**	**Switzerland**	**Taiwan**
Diethylene glycol monobutyl ether (112-34-5)	MAKs	Not established	Not established	Not established	10 ppm TWA [MAK]; 67 mg/m3 TWA [MAK]	Not established
	STELs	Not established	15 ppm STEL [VLA-EC]; 101.2 mg/m3 STEL [VLA-EC]	30 ppm STV; 200 mg/m3 STV	15 ppm STEL [KZW] (4 X 15); 101.2 mg/m3 STEL [KZW] (4 X 15)	Not established
	TWAs	Not established	10 ppm TWA [VLA-ED] (indicative limit value; manufacturing, commercialization, and use restrictions under REACH); 67.5 mg/m3 TWA [VLA-ED] (indicative limit value; manufacturing, commercialization, and use restrictions under REACH)	15 ppm LLV; 100 mg/m3 LLV	Not established	Not established
Acetic acid, vinyl ester	MAKs	Not established	Not established	Not established	10 ppm TWA [MAK]; 35 mg/m3 TWA	Not established

(108-05-4)					[MAK]	
	STELs	20 ppm STEL; 60 mg/m3 STEL	10 ppm STEL [VLA-EC]; 35.2 mg/m3 STEL [VLA-EC]	10 ppm STV; 35 mg/m3 STV	10 ppm STEL [KZW] (15 min); 35 mg/m3 STEL [KZW] (15 min)	Not established
	TWAs	10 ppm TWA; 30 mg/m3 TWA	5 ppm TWA [VLA-ED] (indicative limit value); 17.6 mg/m3 TWA [VLA-ED] (indicative limit value)	5 ppm LLV; 18 mg/m3 LLV	Not established	10 ppm TWA; 35 mg/m3 TWA
1,2-Propanediol (57-55-6)	TWAs	150 ppm TWA (particulate and vapour); 470 mg/m3 TWA (particulate and vapour); 10 mg/m3 TWA (particulate)	Not established	Not established	Not established	Not established

Exposure Limits/Guidelines (Con't.)

	Result	Venezuela
Acetic acid, vinyl ester (108-05-4)	STELs	15 ppm STEL [LEB
	TWAs	10 ppm TWA [CAP

Exposure Control Notations

Japan

•Acetic acid, vinyl ester (108-05-4): **Carcinogens:** (Group 2B - Possibly Carcinogenic to Humans)

Mexico

•Acetic acid, vinyl ester (108-05-4): **Carcinogens:** (A3 - Confirmed animal carcinogen)

Switzerland

•Acetic acid, vinyl ester (108-05-4): **Carcinogens:** (Category C3 carcinogen)

•Diethylene glycol monobutyl ether (112-34-5): **Developmental Risk Groups:** (Developmental Risk Group C)

Norway

•Acetic acid, vinyl ester (108-05-4): **Carcinogens:** (Carcinogen)

Portugal

•Acetic acid, vinyl ester (108-05-4): **Carcinogens:** (A3 - Confirmed Animal Carcinogen with Unknown Relevance to Humans)

Singapore

•Acetic acid, vinyl ester (108-05-4): **Odour Threshold - High:** (1.7 mg/m3) | **Odour Threshold - Low:** (0.4 mg/m3)

Indonesia

•Acetic acid, vinyl ester (108-05-4): **Carcinogens:** (A3 - confirmed animal carcinogen)

Netherlands

•Diethylene glycol monobutyl ether (112-34-5): **Skin:** (skin notation)

South Africa

•Acetic acid, vinyl ester (108-05-4): **Carcinogens:** (Animal Carcinogen)

Argentina

•Acetic acid, vinyl ester (108-05-4): **Carcinogens:** (A3 - Confirmed animal carcinogen with unknown relevance to humans)

Canada Quebec

•Acetic acid, vinyl ester (108-05-4): **Carcinogens:** (C3 carcinogen - effect detected in animals)

Venezuela

•Acetic acid, vinyl ester (108-05-4): **Ceilings:** (A3 - Animal Carcinogen)

ACGIH

•Acetic acid, vinyl ester (108-05-4): **Carcinogens:** (A3 - Confirmed Animal Carcinogen with Unknown Relevance to Humans)

Germany TRGS

•Acetic acid, vinyl ester (108-05-4): **Carcinogens:** (Category 3)

Germany DFG

•Acetic acid, vinyl ester (108-05-4): **Carcinogens:** (Category 3A (could be carcinogenic for man))

•Diethylene glycol monobutyl ether (112-34-5): **Pregnancy:** (no risk to embryo/fetus if exposure limits adhered to)

Exposure Limits Supplemental

ACGIH

•Acetic acid, vinyl ester (108-05-4): **TLV Basis - Critical Effects:** (CNS impairment; eye, skin and upper respiratory tract irritation)

•Diethylene glycol monobutyl ether (112-34-5): **TLV Basis - Critical Effects:** (hematologic, kidney and liver effects)

8.2 Exposure controls

Engineering Measures/Controls • Local exhaust is recommended but not required. Provide adequate

ventilation as necessary.

Personal Protective Equipment

Pictograms

- 

Respiratory
- In case of insufficient ventilation, wear suitable respiratory equipment.

Eye/Face
- Wear protective eyewear (goggles, face shield, or safety glasses).

Hands
- Wear protective gloves - rubber or neoprene.

Skin/Body
- Wear protective clothing - apron or other impervious body coverings.

General Industrial Hygiene Considerations
- Handle in accordance with good industrial hygiene and safety practice.

Environmental Exposure Controls
- No data available

Section 9 - Physical and Chemical Properties

9.1 Information on Physical and Chemical Properties

Material Description			
Physical Form	Liquid	Appearance/Description	White liquid.
Color	White	Odor	Slight acrylic odor.
Odor Threshold	No data available		
General Properties			
Boiling Point	100 C(212 F)	Melting Point/Freezing Point	0 C(32 F)
Decomposition Temperature	No data available	pH	4.4
Specific Gravity/Relative Density	= 1.03 Water=1	Density	8.8 lbs/gal
Water Solubility	Dispersible	Viscosity	No data available
Explosive Properties	Not relevant	Oxidizing Properties:	Not relevant
Volatility			
Vapor Pressure	No data available	Vapor Density	No data available
Evaporation Rate	< 1 n-Butyl Acetate = 1	VOC (Wt.)	< 0.5 %
Volatiles (Wt.)	39.8 %		
Flammability			
Flash Point	> 200 F(> 93.3333 C)	UEL	No data available
LEL	No data available	Autoignition	No data available
Flammability (solid, gas)	Not relevant		
Environmental			
Half-Life	No data available	Octanol/Water Partition coefficient	No data available
Coefficient of water/oil distribution	No data available	Bioaccumulation Factor	No data available
Bioconcentration Factor	No data available	Biochemical Oxygen Demand BOD/BOD5	No data available
Chemical Oxygen Demand	No data available	Persistence	No data available
Degradation	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

- Avoid freezing. Excess heat.

10.5 Incompatible materials

- No data available

10.6 Hazardous decomposition products

- No decomposition is expected under normal storage and use conditions. Hazardous decomposition products formed under fire conditions - carbon oxides (COx).

Section 11 - Toxicological Information

11.1 Information on toxicological effects

Components		
1,2-Propanediol (0.5% TO 1%)	57-55-6	**Acute Toxicity:** Ingestion/Oral-Rat LD50 • 20 g/kg; Skin-Rabbit LD50 • 20800 mg/kg; **Irritation:** Eye-Rabbit • 500 mg 24 Hour(s) • Mild irritation; Skin-Human • 500 mg 7 Day(s) • Mild irritation
Acetic acid, vinyl ester (0.2% TO 0.3%)	108-05-4	**Acute Toxicity:** Ingestion/Oral-Rat LD50 • 2900 mg/kg; Inhalation-Rat LC50 • 11400 mg/m³ 4 Hour(s); Skin-Rabbit LD50 • 2335 mg/kg; **Irritation:** Eye-Human • 22 ppm
Diethylene glycol monobutyl ether (0.1% TO 0.2%)	112-34-5	**Acute Toxicity:** Ingestion/Oral-Rat LD50 • 5660 mg/kg; Skin-Rabbit LD50 • 2700 mg/kg; **Irritation:** Eye-Rabbit • 20 mg 24 Hour(s) • Moderate irritation

GHS Properties	Classification
Respiratory sensitization	**EU/CLP**• **OSHA HCS 2012**• **UN GHS**•
Serious eye damage/Irritation	**EU/CLP**• **OSHA HCS 2012**• **UN GHS**•
Acute toxicity	**EU/CLP**• **OSHA HCS 2012**• **UN GHS**•
Aspiration Hazard	**EU/CLP**• **OSHA HCS 2012**• **UN GHS**•
Carcinogenicity	**EU/CLP**•Carcinogenicity 2 **OSHA HCS 2012**•Carcinogenicity 2 **UN GHS**•Carcinogenicity 2
Skin corrosion/Irritation	**EU/CLP**• **OSHA HCS 2012**• **UN GHS**•
Skin sensitization	**EU/CLP**• **OSHA HCS 2012**• **UN GHS**•
STOT-RE	**EU/CLP**• **OSHA HCS 2012**• **UN GHS**•
STOT-SE	**EU/CLP**• **OSHA HCS 2012**• **UN GHS**•
Toxicity for Reproduction	**EU/CLP**• **OSHA HCS 2012**• **UN GHS**•

Germ Cell Mutagenicity	**EU/CLP•** **OSHA HCS 2012•** **UN GHS•**

Potential Health Effects

Inhalation

Acute (Immediate) • May cause mild irritation.

Chronic (Delayed) • Repeated and prolonged exposure may cause irritation.

Skin

Acute (Immediate) • May cause mild irritation.

Chronic (Delayed) • Repeated and prolonged exposure may cause irritation.

Eye

Acute (Immediate) • May cause irritation.

Chronic (Delayed) • Repeated and prolonged exposure may cause irritation.

Ingestion

Acute (Immediate) • No data available

Chronic (Delayed) • No data available

Carcinogenic Effects		
	CAS	**IARC**
Acetic acid, vinyl ester	108-05-4	Group 2B-Possible Carcinogen

Section 12 - Ecological Information

12.1 Toxicity

Component	CAS	Data	Comments
1,2-Propanediol (0.5% TO 1%)	57-55-6	**Crustacea:** 48 Hour(s) EC50 Water Flea 1000 mg/L ; **Fish:** 96 Hour(s) LC50 Fish 710 mg/L [Fresh water]	

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 data available

12.6 Other adverse effects

Section 13 - Disposal Considerations

13.1 Waste treatment methods

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

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

13.2 Other Information

• Dispose of wastes in an approved waste disposal facility.

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	NDA	NDA	NDA	NDA
IMO/IMDG	NDA	NDA	NDA	NDA	NDA
IATA/ICAO	NDA	NDA	NDA	NDA	NDA

14.6 Special precautions for user • None specified.

14.7 Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code • Not relevant.

14.8 Other information

DOT • Not regulated.

IMO/IMDG • Not regulated.

IATA/ICAO • Not regulated.

Section 15 - Regulatory Information

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

SARA Hazard Classifications • No data available

State Right To Know				
Component	**CAS**	**MA**	**NJ**	**PA**
1,2-Propanediol	57-55-6	No	Yes	Yes
Acetic acid, vinyl ester	108-05-4	Yes	Yes	Yes
Diethylene glycol monobutyl ether	112-34-5	No	No	No

Inventory						
Component	**CAS**	**Australia AICS**	**Canada DSL**	**China**	**EU EINECS**	**Japan ENCS**
1,2-Propanediol	57-55-6	Yes	Yes	Yes	Yes	Yes
Acetic acid, vinyl ester	108-05-4	Yes	Yes	Yes	Yes	Yes
Diethylene glycol monobutyl ether	112-34-5	Yes	Yes	Yes	Yes	Yes

Inventory (Con't.)					
Component	**CAS**	**Korea KECL**	**New Zealand**	**Philippines PICCS**	**TSCA**
1,2-Propanediol	57-55-6	Yes	Yes	Yes	Yes
Acetic acid, vinyl ester	108-05-4	Yes	Yes	Yes	Yes
Diethylene glycol monobutyl ether	112-34-5	Yes	Yes	Yes	Yes

Australia

Labor

Australia - High Volume Industrial Chemicals List

•Acetic acid, vinyl ester	108-05-4	
•Diethylene glycol monobutyl ether	112-34-5	
•1,2-Propanediol	57-55-6	

Australia - List of Designated Hazardous Substances - Classification

•Acetic acid, vinyl ester	108-05-4	F R11
•Diethylene glycol monobutyl ether	112-34-5	Xi R36
•1,2-Propanediol	57-55-6	Self classification required

		(particulates only or total vapour and particulates)

Belgium

Labor

Belgium - Substances and Preparations - Suspected Carcinogens and Mutagens

•Acetic acid, vinyl ester	108-05-4	

Canada

Labor

Canada - WHMIS - Classifications of Substances

•Acetic acid, vinyl ester	108-05-4	B2, D1B, D2A, F
•Diethylene glycol monobutyl ether	112-34-5	B3, D2B
•1,2-Propanediol	57-55-6	Uncontrolled product according to WHMIS classification criteria

Canada - WHMIS - Ingredient Disclosure List

•Acetic acid, vinyl ester	108-05-4	1 %
•Diethylene glycol monobutyl ether	112-34-5	1 %
•1,2-Propanediol	57-55-6	1 %

Environment

Canada - Council of Ministers of the Environment - Water Quality Guidelines for Freshwater Aquatic Life

•1,2-Propanediol	57-55-6	500000 µg/L (listed under Glycols)

Canada - Environmental Emergencies

•Acetic acid, vinyl ester	108-05-4	

China

Other

China - Dangerous Goods List

•Acetic acid, vinyl ester	108-05-4	

Europe

Other

EU - CLP (1272/2008) - Annex VI - Table 3.2 - Classification

•Acetic acid, vinyl ester	108-05-4	F; R11
•Diethylene glycol monobutyl ether	112-34-5	Xi; R36

EU - CLP (1272/2008) - Annex VI - Table 3.2 - Labelling

•Acetic acid, vinyl ester	108-05-4	F R:11 S:(2)-16-23-29-33
•Diethylene glycol monobutyl ether	112-34-5	Xi R:36 S:(2)-24-26

EU - CLP (1272/2008) - Annex VI - Table 3.2 - Safety Phrases

•Acetic acid, vinyl ester	108-05-4	S:(2)-16-23-29-33
•Diethylene glycol monobutyl ether	112-34-5	S:(2)-24-26

EU - Endocrine Disrupters (COM (2001)262) - Candidate List of Substances

•Acetic acid, vinyl ester	108-05-4	Group III Chemical

EU - Existing Substance Regulation (793/93/EEC) - Evaluation of Existing HPV Chemicals (REPEALED)

•Acetic acid, vinyl ester	108-05-4	
•Diethylene glycol monobutyl ether	112-34-5	
•1,2-Propanediol	57-55-6	

Germany

Environment

Germany - TA Luft - Types and Classes

•Acetic acid, vinyl ester	108-05-4	organic Substance: 5.2.5, Class I

Germany - TA Luft - Emission Limits for Organic Substances

•Acetic acid, vinyl ester	108-05-4	0.10 kg/h Mass flow (Class I); 20 mg/m3 Mass concentration (Class I)

Germany - Water Classification (VwVwS) - Annex 2 - Water Hazard Classes

•Acetic acid, vinyl ester	108-05-4	ID Number 203, hazard class 2 - hazard to waters
•Diethylene glycol monobutyl ether	112-34-5	ID Number 46, hazard class 1 - low hazard to waters
•1,2-Propanediol	57-55-6	ID Number 280, hazard class 1 - low hazard to

		waters

India

Environment

India - Hazardous Chemical Rules - List of Hazardous and Toxic Chemicals

•Acetic acid, vinyl ester	108-05-4	
•Diethylene glycol monobutyl ether	112-34-5	

Japan

Labor

Japan - ISHL Dangerous Substances

•Acetic acid, vinyl ester	108-05-4	Flammable substance

Japan - ISHL Designated Carcinogens

•Acetic acid, vinyl ester	108-05-4	>1 %

Japan - ISHL Notifiable Substances

•Acetic acid, vinyl ester	108-05-4	>0.1 % weight [Table 9, 180]

Environment

Japan - Pollutant Release Transfer Register (PRTR) - Class 1 Substances

•Acetic acid, vinyl ester	108-05-4	134 >=1 %

Inventory - Japan - Industrial Safety and Health Law Substances (ISHL)

•Diethylene glycol monobutyl ether	112-34-5	2-(8)-317; 2-(8)-99
•1,2-Propanediol	57-55-6	2-(8)-321; 2-(8)-323

Other

Japan - Chemical Substance Control Law (CSCL) - Examined Existing Chemical Substances

•Acetic acid, vinyl ester	108-05-4	Readily biodegradable
•Diethylene glycol monobutyl ether	112-34-5	Readily biodegradable
•1,2-Propanediol	57-55-6	Readily biodegradable

Japan - Fire Service Law - Hazardous Materials

•Acetic acid, vinyl ester	108-05-4	Group 4 - Flammable liquids II (listed under 1st Class petroleums - insoluble)
•Diethylene glycol monobutyl ether	112-34-5	Group 4 - Flammable liquids III (listed under 3rd Class petroleums - soluble)
•1,2-Propanediol	57-55-6	Group 4 - Flammable liquids III (listed under 3rd Class petroleums - soluble)

Japan - Japanese Pharmacopoeia Listing - Synthetics

•1,2-Propanediol	57-55-6	

Singapore

Environment

Singapore - Petroleum and Flammable Materials - Hazard Classes

•Acetic acid, vinyl ester	108-05-4	Hazard Class = 3

Singapore - Petroleum and Flammable Materials - Regulated Products

•Acetic acid, vinyl ester	108-05-4	SCDVAC1301L2

Taiwan

Environment

Taiwan - Toxic Chemical Substances Control Act - Classification and Control Levels

•Acetic acid, vinyl ester	108-05-4	Class 4 Cutoff: 1 wt%

Thailand

Other

Thailand - Hazardous Substances

•Acetic acid, vinyl ester	108-05-4	Type 2 Hazardous Substance

Thailand - Hazardous Substances - Duties and Civil Liabilities

•Acetic acid, vinyl ester	108-05-4	

United Kingdom

Environment

United Kingdom - Pollution Inventory - Schedule 1 - Thresholds for Releases to Air

•Acetic acid, vinyl ester	108-05-4	10 kg

United States

Environment

U.S. - CAA (Clean Air Act) - 1990 Hazardous Air Pollutants		
•Acetic acid, vinyl ester	108-05-4	
U.S. - CERCLA/SARA - Hazardous Substances and their Reportable Quantities		
•Acetic acid, vinyl ester	108-05-4	5000 lb final RQ; 2270 kg final RQ
U.S. - CERCLA/SARA - Section 302 Extremely Hazardous Substances EPCRA RQs		
•Acetic acid, vinyl ester	108-05-4	5000 lb EPCRA RQ
U.S. - CERCLA/SARA - Section 302 Extremely Hazardous Substances TPQs		
•Acetic acid, vinyl ester	108-05-4	1000 lb TPQ
U.S. - CERCLA/SARA - Section 313 - Emission Reporting		
•Acetic acid, vinyl ester	108-05-4	0.1 % de minimis concentration
U.S. - EPA - Designated Generic Categories - Certain Glycol Ethers		
•Diethylene glycol monobutyl ether	112-34-5	
U.S. - RCRA (Resource Conservation & Recovery Act) - Constituents for Detection Monitoring		
•Acetic acid, vinyl ester	108-05-4	
U.S. - RCRA (Resource Conservation & Recovery Act) - List for Hazardous Constituents		
•Acetic acid, vinyl ester	108-05-4	
U.S. - RCRA (Resource Conservation & Recovery Act) - TSD Facilities Ground Water Monitoring		
•Acetic acid, vinyl ester	108-05-4	

United States - Pennsylvania

Labor

U.S. - Pennsylvania - RTK (Right to Know) - Environmental Hazard List	
•Acetic acid, vinyl ester	108-05-4

15.2 Chemical Safety Assessment

- No data available

Section 16 - Other Information

Relevant Phrases (code & full text)

- H225 - Highly flammable liquid and vapor
  H319 - Causes serious eye irritation
  H332 - Harmful if inhaled
  H351 - Suspected of causing cancer via Inhalation
  P201 - Obtain special instructions before use.
  P202 - Do not handle until all safety precautions have been read and understood.
  P280 - Wear protective gloves/protective clothing/eye protection/face protection.
  P301+P312 - IF SWALLOWED: Immediately call a POISON CENTER or doctor/physician if you feel unwell.
  P302+P352 - IF ON SKIN: Wash with plenty of soap and 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.
  P308+P313 - IF exposed or concerned: Get medical advice/attention.
  P405 - Store locked up.
  P501 - Dispose of content and/or container in accordance with local, regional, national, and/or international regulations.
  H335 - May cause respiratory irritation

Classification method for mixtures
- Calculation method.

Revision Date
- 03 August 2015

Last Revision Date
- 05 November 2013

Other Information
- Approved by: Troy Bergstedt, Director of Chemical Research, (218) 628-2217 ext.142.

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