Safety Data Sheet

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

1.1 Product identifier

Product Name • **BC-622A Part A**

Synonyms • Polyester polyol

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

Relevant identified use(s) • Reflective Paint

1.3 Details of the supplier of the safety data sheet

Manufacturer • Saint-Gobain Crystals

17900 Great Lakes Parkway
Hiram, OH 44234
United States
www.crystals.saint-gobain.com
scintillation@saint-gobain.com

Telephone (General) • 440-834-5600

1.4 Emergency telephone number

Manufacturer • 1-800-424-9300 - ChemTrec

Manufacturer • 703-525-3887 - Outside U.S.

Section 2: Hazards Identification

EU/EEC

According to: Regulation (EC) No 1272/2008 (CLP)/REACH 1907/2006 [amended by 2015/830]
According to: EU Directive 67/548/EEC (DSD) or 1999/45/EC (DPD)

2.1 Classification of the substance or mixture

CLP • Flammable Liquids 3 - H226
Germ Cell Mutagenicity 1B - H340

DSD/DPD • Carcinogenic Substances - Category 2
Mutagenic Substances - Category 2
R10, R45, R46

2.2 Label Elements

CLP

DANGER

Hazard statements •
H226 - Flammable liquid and vapour
H340 - May cause genetic defects.
H350 - May cause cancer.

Precautionary statements

Prevention •
P201 - Obtain special instructions before use.
P202 - Do not handle until all safety precautions have been read and understood.
P210 - Keep away from heat, sparks, open flames and/or hot surfaces. - No smoking.
P233 - Keep container tightly closed.
P240 - Ground and/or bond container and receiving equipment.
P241 - Use explosion-proof electrical/ventilating/lighting/equipment.
P242 - Use only non-sparking tools.
P243 - Take precautionary measures against static discharge.
P280 - Wear protective gloves and eye/face protection , .
P281 - Use personal protective equipment as required.

Response •
P370+P378 - In case of fire: Use appropriate media for extinction.
P303+P361+P353 - IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower.
P308+P313 - IF exposed or concerned: Get medical advice/attention.

Storage/Disposal •
P403+P235 - Store in a well-ventilated place. Keep cool.
P405 - Store locked up.
P501 - Dispose of content and/or container in accordance with local, regional, national, and/or international regulations.

DSD/DPD

Risk phrases •
R10 - Flammable.
R45 - May cause cancer.
R46 - May cause heritable genetic damage.

Safety phrases •
S53 - Avoid exposure - obtain special instructions before use.

2.3 Other Hazards

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

DSD/DPD • According to European Directive 1999/45/EC this material is considered dangerous.

United States (US)

According to: OSHA 29 CFR 1910.1200 HCS

2.1 Classification of the substance or mixture

OSHA HCS 2012 •
Flammable Liquids 3
Eye Irritation 2
Carcinogenicity 2
Reproductive Toxicity 2
Specific Target Organ Toxicity Repeated Exposure 2

2.2 Label elements

OSHA HCS 2012

DANGER

Hazard statements
- Flammable liquid and vapour
  Causes serious eye irritation
  Suspected of causing cancer.
  Suspected of damaging fertility or the unborn child.
  May cause damage to organs through prolonged or repeated exposure.

Precautionary statements

Prevention
- Obtain special instructions before use.
  Do not handle until all safety precautions have been read and understood.
  Keep away from heat, sparks, open flames and/or hot surfaces. - No smoking.
  Keep container tightly closed.
  Ground and/or bond container and receiving equipment.
  Use explosion-proof electrical/ventilating/lighting/equipment.
  Use only non-sparking tools.
  Take precautionary measures against static discharge.
  Do not breathe mist/vapours/spray.
  Wash thoroughly after handling.
  Wear protective gloves, clothing , and eye/face protection , .

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

Storage/Disposal
- Store in a well-ventilated place. Keep cool.
  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
- Under United States Regulations (29 CFR 1910.1200 - Hazard Communication Standard), this product is considered hazardous.

Canada

According to: WHMIS

2.1 Classification of the substance or mixture

WHMIS
- Flammable Liquids - B2
  Other Toxic Effects - D2A
  Other Toxic Effects - D2B

2.2 Label elements

WHMIS
-

WHMIS
- Flammable Liquids - B2
  Other Toxic Effects - D2A
  Other Toxic Effects - D2B

2.3 Other hazards

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

Section 3 - Composition/Information on Ingredients

3.1 Substances

- Material does not meet the criteria of a substance.

3.2 Mixtures

Composition					
Chemical Name	**Identifiers**	**%**	**LD50/LC50**	**Classifications According to Regulation/Directive**	**Comments**
1-Methoxy-2-propanol acetate	**CAS:**108-65-6 **EC Number:**203-603-9 **EU Index:**607-195-00-7	50% TO 60%	Ingestion/Oral-Rat LD50 • 8532 mg/kg Skin-Rabbit LD50 • >5 g/kg	**EU DSD/DPD:** Annex VI, Table 3.2: R10 **EU CLP:** Annex VI, Table 3.1: Flam. Liq. 3, H226 **OSHA HCS 2012:** Not Classified	NDA
Non-Hazardous material Non-Regulated	NDA	30% TO 40%	NDA	**EU DSD/DPD:** Not Classified **EU CLP:** Not Classified **OSHA HCS 2012:** Not Classified	NDA
Xylene	**CAS:**1330-20-7 **EC Number:**215-535-7 **EU Index:**601-022-00-9	1% TO 5%	Ingestion/Oral-Rat LD50 • 4300 mg/kg Inhalation-Rat LC50 • 5000 ppm 4 Hour(s) Skin-Rabbit LD50 • >1700 mg/kg	**EU DSD/DPD:** Annex VI, Table 3.2: R10; Xn; R20/21; Xi; R38 **EU CLP:** Annex VI, Table 3.1: Flam. Liq. 3, H226; Acute Tox. 4, H312; Acute Tox. 4, H332; Skin Irrit. 2, H315 **OSHA HCS 2012:** Flam. Liq. 3; Acute Tox. 4 (inhl); Skin Irrit. 2; Eye Irrit. 2; Repr. 1B (Inhl); STOT SE 3: Narc.; STOT SE 3: Resp. Irrit.	NDA
Solvent naphtha (petroleum), light aromatic	**CAS:**64742-95-6 **EC Number:**265-199-0 **EU Index:**649-356-00-4	1% TO 5%	Ingestion/Oral-Rat LD50 • 8400 mg/kg	**EU DSD/DPD:** Annex VI, Table 3.2: Carc. Cat. 2; R45; Muta. Cat. 2; R46; Xn; R65 **EU CLP:** Annex VI, Table 3.1: Carc. 1B, H350; Muta. 1B, H340; Asp. Tox. 1, H304 **OSHA HCS 2012:** Eye Irrit. 2	NDA
Ethylbenzene	**CAS:**100-41-4 **EC Number:**202-849-4 **EU Index:**601-023-00-4	1% TO 5%	Ingestion/Oral-Rat LD50 • 3500 mg/kg Inhalation-Rat LC50 • 55000 mg/m³ 2 Hour(s) Skin-Rabbit LD50 • >5000 mg/kg	**EU DSD/DPD:** Annex VI, Table 3.2: F; R11; Xn; R20-48/20-65 **EU CLP:** Annex VI, Table 3.1: Flam. Liq. 2, H225; Acute Tox. 4, H332; STOT RE 2, H373 (Hearing Organs, Inhl); Asp. Tox. 1, H304 **OSHA HCS 2012:** Flam. Liq. 2; Acute Tox. 4 (inhl); Eye Irrit. 2; Carc. 2 (inhl); Repr. 2 (inhl); STOT SE 3: Narc.; STOT SE 3: Resp. Irrit. (inhl); STOT RE 2 (Ear, Inhl); Asp. Tox. 1	NDA

Section 4 - First Aid Measures

4.1 Description of first aid measures

Inhalation

- Move victim to fresh air. Administer oxygen if breathing is difficult. Give artificial respiration if victim is not breathing. If signs/symptoms continue, get medical attention.

Skin

- Wash skin with soap and water. Take off contaminated clothing and wash before reuse. If irritation develops and persists, get medical 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

- Do NOT induce vomiting. Never give anything by mouth if victim is rapidly losing consciousness, is unconscious or convulsing. Have victim drink 60 to 240 ml (2 to 8 oz.) of water. If vomiting occurs naturally, have victim rinse mouth with water again. Get medical attention.

4.2 Most important symptoms and effects, both acute and delayed

- Refer to Section 11 - Toxicological Information.

4.3 Indication of any immediate medical attention and special treatment needed

Notes to Physician

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

Section 5 - Firefighting Measures

5.1 Extinguishing media

Suitable Extinguishing Media

- Use dry chemical, foam or fog.

Unsuitable Extinguishing Media

- No data available

5.2 Special hazards arising from the substance or mixture

Unusual Fire and Explosion Hazards

- Containers may explode when heated.
  Vapor explosion hazard indoors, outdoors or in sewers.
  HIGHLY FLAMMABLE: Will be easily ignited by heat, sparks or flames.
  Many liquids are lighter than water.
  Most vapors are heavier than air. They will spread along ground and collect in low or confined areas (sewers, basements, tanks).
  Runoff to sewer may create fire or explosion hazard.
  Vapors may form explosive mixtures with air.
  Vapors may travel to source of ignition and flash back.

Hazardous Combustion Products

- Oxides of carbon, Carbon dioxide, and Carbon monoxide.

5.3 Advice for firefighters

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

Section 6 - Accidental Release Measures

6.1 Personal precautions, protective equipment and emergency procedures

Personal Precautions

- Do not walk through spilled material. Wear appropriate personal protective equipment, avoid direct contact. Avoid breathing mist, vapors, and/or spray. Avoid contact with skin, eyes or clothing. Do not touch damaged containers or spilled material unless wearing appropriate protective clothing.

Emergency Procedures

- As an immediate precautionary measure, isolate spill or leak area for at least 50 meters (150 feet) in all directions. ELIMINATE all ignition sources (no smoking, flares, sparks or flames in immediate area). Keep unauthorized personnel away. Stay upwind. Keep out of low areas. Ventilate closed spaces before entering.

6.2 Environmental precautions

- Avoid run off to waterways and sewers.

6.3 Methods and material for containment and cleaning up

Containment/Clean-up Measures

- Stop leak if you can do it without risk.
Absorb or cover with dry earth, sand or other non-combustible material and transfer to containers.
Use clean non-sparking tools to collect absorbed material.
A vapor suppressing foam may be used to reduce vapors.
All equipment used when handling the product must be grounded.
LARGE SPILLS: Dike far ahead of liquid spill for later disposal.
LARGE SPILLS: Water spray may reduce vapor; but may not prevent ignition in closed spaces.

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 only in well ventilated areas. Avoid contact with heat and ignition sources. Wear appropriate personal protective equipment, avoid direct contact. Do not breathe mist, vapors, or spray. Avoid contact with skin, eyes or clothing. Use only non-sparking tools. Take precautionary measures against static charges. Wash thoroughly with soap and water after handling and before eating, drinking, or using tobacco.

7.2 Conditions for safe storage, including any incompatibilities

Storage

- Store in a cool/low-temperature, well-ventilated place. Keep away from heat and ignition sources. Keep container closed when not in use. Keep away from incompatible materials.

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**	**NIOSH**	**OSHA**
Ethylbenzene (100-41-4)	TWAs	20 ppm TWA	100 ppm TWA; 435 mg/m3 TWA	100 ppm TWA; 435 mg/m3 TWA
	STELs	Not established	125 ppm STEL; 545 mg/m3 STEL	Not established
Xylene (1330-20-7)	TWAs	100 ppm TWA	Not established	100 ppm TWA; 435 mg/m3 TWA
	STELs	150 ppm STEL	Not established	Not established

8.2 Exposure controls

Engineering Measures/Controls

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

Personal Protective Equipment

Respiratory

- Follow the OSHA respirator regulations found in 29 CFR 1910.134 or European Standard EN 149. Use a NIOSH/MSHA or European Standard EN 149 approved respirator if exposure limits are exceeded or symptoms are experienced.

Eye/Face

- Wear safety goggles.

Skin/Body

- Wear appropriate gloves.

Environmental Exposure Controls

- Controls should be engineered to prevent release to the environment, including procedures to prevent spills, atmospheric release and release to waterways. Follow

best practice for site management and disposal of waste.

Key to abbreviations

ACGIH = American Conference of Governmental Industrial Hygiene
LLV = Limit Level Value is the exposure limit for 8-hour work day
NIOSH = National Institute of Occupational Safety and Health
OSHA = Occupational Safety and Health Administration
STEL = Short Term Exposure Limits are based on 15-minute exposures
STEV = Short Term Exposure Value
STV = Short-term exposure limit based on 15-minute exposure
TWAEV = Time-Weighted Average Exposure Value
TWA = Time-Weighted Averages are based on 8h/day, 40h/week exposures
VLA-EC = Valor Límite Ambiental Exposición de Corta Duración is the short-term exposure limit based on 15-minute exposure
VLA-ED = Valor Límite Ambiental Exposición Diaria is the limit for the daily average concentration

Section 9 - Physical and Chemical Properties

9.1 Information on Basic Physical and Chemical Properties

Material Description			
Physical Form	Liquid	Appearance/Description	Thick, white liquid with a sweet, hydrocarbon odor.
Color	White	Odor	Sweet, hydrocarbon odor.
Odor Threshold	Data lacking		
General Properties			
Boiling Point	136 to 140 °C(276.8 to 284 °F)	Melting Point/Freezing Point	Data lacking
Decomposition Temperature	Data lacking	pH	Data lacking
Specific Gravity/Relative Density	= 1.02 Water=1	Water Solubility	Data lacking
Viscosity	Data lacking	Explosive Properties	Data lacking
Oxidizing Properties:	Data lacking		
Volatility			
Vapor Pressure	Data lacking	Vapor Density	Data lacking
Evaporation Rate	Data lacking		
Flammability			
Flash Point	27 °C(80.6 °F)	UEL	7 %
LEL	0.9 %	Autoignition	Data lacking
Flammability (solid, gas)	Data lacking		
Environmental			
Octanol/Water Partition coefficient	Data lacking		

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

10.3 Possibility of hazardous reactions

- Hazardous polymerization will not occur.

10.4 Conditions to avoid

- Avoid heat, sparks, open flames and other ignition sources. Incompatible materials.

10.5 Incompatible materials

- Oxidizing agents.

10.6 Hazardous decomposition products

- Carbon dioxide and carbon monoxide.

Section 11 - Toxicological Information

11.1 Information on toxicological effects

Components		
1-Methoxy-2-propanol acetate (50% TO 60%)	108-65-6	**Acute Toxicity:** Ingestion/Oral-Rat LD50 • 8532 mg/kg; Skin-Rabbit LD50 • >5 g/kg
Xylene (1% TO 5%)	1330-20-7	**Acute Toxicity:** Ingestion/Oral-Rat LD50 • 4300 mg/kg; *Liver*:**Other changes**; *Kidney, Ureter, and Bladder*:**Other changes**; Inhalation-Rat LC50 • 5000 ppm 4 Hour(s); Inhalation-Man LCLo • 10000 ppm 6 Hour(s); *Behavioral*:**General anesthetic**; *Lungs, Thorax, or Respiration*:**Cyanosis**; *Blood*:**Other changes**; Inhalation-Human TCLo • 200 ppm; *Sense Organs and Special Senses:Olfaction*:**Other changes**; *Sense Organs and Special Senses:Eye*:**Conjunctive irritation**; *Lungs, Thorax, or Respiration*:**Other changes**; Skin-Rabbit LD50 • >1700 mg/kg; **Irritation:** Eye-Rabbit • 5 mg 24 Hour(s) • Severe irritation; Skin-Rabbit • 500 mg 24 Hour(s) • Moderate irritation; **Reproductive:** Inhalation-Rabbit TCLo • 1 g/m³ 24 Hour(s)(7-20D preg); *Reproductive Effects:Effects on Fertility*:**Abortion**; Inhalation-Rat TCLo • 50 mg/m³ 6 Hour(s)(1-21D preg); *Reproductive Effects:Effects on Fertility*:**Post-implantation mortality**; *Reproductive Effects:Effects on Embryo or Fetus*:**Fetotoxicity (except death, e.g., stunted fetus)**; *Reproductive Effects:Specific Developmental Abnormalities*:**Craniofacial (including nose and tongue)**; Inhalation-Rat TDLo • 200 ppm 6 Hour(s)(4-20D preg); *Reproductive Effects:Specific Developmental Abnormalities*:**Musculoskeletal system**; *Reproductive Effects:Effects on Newborn*:**Behavioral**
Solvent naphtha (petroleum), light aromatic (1% TO 5%)	64742-95-6	**Acute Toxicity:** Ingestion/Oral-Rat LD50 • 8400 mg/kg; *Behavioral*:**Somnolence (general depressed activity)**; *Behavioral*:**Tremor**; *Lungs, Thorax, or Respiration*:**Other changes**; **Irritation:** Eye-Rabbit • 100 µL 24 Hour(s) • Mild irritation; **Reproductive:** Inhalation-Rat TCLo • 1500 ppm (9W male/9W pre-16D post); *Reproductive Effects:Effects on Newborn*:**Growth statistics (e.g., reduced weight gain)**
Ethylbenzene (1% TO 5%)	100-41-4	**Acute Toxicity:** Ingestion/Oral-Rat LD50 • 3500 mg/kg; Inhalation-Rat LC50 • 55000 mg/m³ 2 Hour(s); Inhalation-Guinea Pig LCLo • 2500 ppm 8 Hour(s); *Behavioral*:**Coma**; Skin-Rabbit LD50 • 17800 µL/kg; **Irritation:** Eye-Rabbit • 500 mg • Severe irritation; Skin-Rabbit • 15 mg 24 Hour(s)-Open • Mild irritation; **Multi-dose Toxicity:** Inhalation-Rat TCLo • 550 ppm 8 Hour(s) 5 Day(s)-Intermittent; *Sense Organs and Special Senses:Ear*:**Change in acuity**; *Sense Organs and Special Senses:Ear*:**Changes in cochlear structure or function**; Inhalation-Rat TDLo • 200 ppm 13 Week(s)-Intermittent; *Sense Organs and Special Senses:Ear*:**Changes in cochlear structure or function**; **Mutagen:** Specific locus test • Intraperitoneal-Mouse • 754 µmol/L; Micronucleus test • Unreported Route-Hamster • Embryo (Somatic cell) • 25 mg/L; Sister chromatid exchange • Unreported Route-Human • Lymphocyte (Somatic cell) • 10 mmol/L; Mutation in Mammalian Somatic Cells • Unreported Route-Mouse • Lymphocyte (Somatic cell) • 80 mg/L; **Reproductive:** Inhalation-Rabbit TCLo • 1 g/m³ 24 Hour(s)(7-20D preg); *Reproductive Effects:Effects on Fertility*:**Abortion**; Inhalation-Rat TCLo • 1000 ppm (6-20D preg); *Reproductive Effects:Effects on Embryo or Fetus*:**Fetotoxicity (except death, e.g., stunted fetus)**; Inhalation-Rat TCLo • 96 ppm 7 Hour(s)(1-19D preg); *Reproductive Effects:Specific Developmental Abnormalities*:**Musculoskeletal system**; Inhalation-Rat TCLo • 600 mg/m³ 24 Hour(s)(7-15D preg); *Reproductive Effects:Effects on Fertility*:**Post-implantation mortality**; *Reproductive Effects:Effects on Embryo or Fetus*:**Fetal death**; *Reproductive Effects:Specific Developmental Abnormalities*:**Musculoskeletal system**; **Tumorigen / Carcinogen:** Inhalation-Mouse TCLo • 750 ppm 6 Hour(s) 2 Year(s)-Intermittent; *Tumorigenic*:**Carcinogenic by RTECS criteria**; *Lungs, Thorax, or Respiration*:**Bronchiogenic carcinoma**; *Liver*:**Tumors**; Inhalation-Rat TCLo • 23400 mg/kg 104 Week(s)-Intermittent; *Tumorigenic*:**Equivocal tumorigenic agent by RTECS criteria**; *Kidney, Ureter, and Bladder*:**Kidney tumors**; *Reproductive Effects:Tumorigenic Effects*:**Testicular tumors**; Inhalation-Rat TCLo • 750 ppm 6 Hour(s) 2 Year(s)-Intermittent;

		Tumorigenic:**Carcinogenic by RTECS criteria**; *Kidney, Ureter, and Bladder*:**Tumors**

GHS Properties	Classification
Acute toxicity	**EU/CLP** • Data lacking **OSHA HCS 2012** • Data lacking
Skin corrosion/Irritation	**EU/CLP** • Data lacking **OSHA HCS 2012** • Data lacking
Serious eye damage/Irritation	**EU/CLP** • Data lacking **OSHA HCS 2012** • Eye Irritation 2
Skin sensitization	**EU/CLP** • Data lacking **OSHA HCS 2012** • Data lacking
Respiratory sensitization	**EU/CLP** • Data lacking **OSHA HCS 2012** • Data lacking
Aspiration Hazard	**EU/CLP** • Data lacking **OSHA HCS 2012** • Data lacking
Carcinogenicity	**EU/CLP** • Carcinogenicity 1B; May cause cancer **OSHA HCS 2012** • Carcinogenicity 2
Germ Cell Mutagenicity	**EU/CLP** • Germ Cell Mutagenicity 1B **OSHA HCS 2012** • Data lacking
Toxicity for Reproduction	**EU/CLP** • Data lacking **OSHA HCS 2012** • Toxic to Reproduction 2
STOT-SE	**EU/CLP** • Data lacking **OSHA HCS 2012** • Data lacking
STOT-RE	**EU/CLP** • Data lacking **OSHA HCS 2012** • Specific Target Organ Toxicity Repeated Exposure 2

Potential Health Effects

Inhalation

Acute (Immediate)
- Vapors may cause irritation to the respiratory system.

Chronic (Delayed)
- Exposure to relatively low concentrations of ethylbenzene for several days to weeks resulted in potentially irreversible damage to the inner ear and hearing of animals.

Skin

Acute (Immediate)
- May cause irritation.

Chronic (Delayed)
- No data available

Eye

Acute (Immediate)
- Causes serious eye irritation.

Chronic (Delayed)
- No data available

Ingestion

Acute (Immediate)
- Effects unknown.

Chronic (Delayed)
- No data available

Mutagenic Effects
- May cause genetic defects.

Carcinogenic Effects
- May cause cancer.

Carcinogenic Effects		
	CAS	**IARC**
Ethylbenzene	100-41-4	Group 2B-Possible Carcinogen

Reproductive Effects
- Suspected of damaging fertility or the unborn child.

Key to abbreviations
LD = Lethal Dose
TC = Toxic Concentration
TD = Toxic Dose

Section 12 - Ecological Information

12.1 Toxicity
- Material data lacking.

12.2 Persistence and degradability
- Material data lacking.

12.3 Bioaccumulative potential
- Material data lacking.

12.4 Mobility in Soil
- Material data lacking.

12.5 Results of PBT and vPvB assessment
- No PBT and vPvB assessment has been conducted.

12.6 Other adverse effects
- No studies have been found.

Section 13 - Disposal Considerations

13.1 Waste treatment methods
Product waste
- Dispose of content and/or container in accordance with local, regional, national, and/or international regulations.

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

Section 14 - Transport Information

	14.1 UN number	14.2 UN proper shipping name	14.3 Transport hazard class(es)	14.4 Packing group	14.5 Environmental hazards
DOT	UN1263	Paint	3	III	NDA
TDG	UN1263	PAINT	3	III	NDA
IMO/IMDG	UN1263	PAINT	3	III	NDA
IATA/ICAO	UN1263	Paint	3	III	NDA

14.6 Special precautions for user
- None specified.

14.7 Transport in bulk according to Annex II of Marpol and the IBC Code
- Data lacking.

Section 15 - Regulatory Information

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

SARA Hazard Classifications • Acute, Chronic, Fire

Inventory						
Component	**CAS**	**Canada DSL**	**Canada NDSL**	**EU EINECS**	**EU ELNICS**	**TSCA**
1-Methoxy-2-propanol acetate	108-65-6	Yes	No	Yes	No	Yes
Ethylbenzene	100-41-4	Yes	No	Yes	No	Yes
Solvent naphtha (petroleum), light aromatic	64742-95-6	Yes	No	Yes	No	Yes
Xylene	1330-20-7	Yes	No	Yes	No	Yes

Canada

Labor

Canada - WHMIS - Classifications of Substances

• Ethylbenzene	100-41-4	B2, D2A, D2B
• Xylene	1330-20-7	B2, D2A, D2B
• Solvent naphtha (petroleum), light aromatic	64742-95-6	B3, D2B
• 1-Methoxy-2-propanol acetate	108-65-6	B3

Canada - WHMIS - Ingredient Disclosure List

• Ethylbenzene	100-41-4	0.1 %
• Xylene	1330-20-7	Not Listed
• Solvent naphtha (petroleum), light aromatic	64742-95-6	Not Listed
• 1-Methoxy-2-propanol acetate	108-65-6	Not Listed

Environment

Canada - CEPA - Priority Substances List

• Ethylbenzene	100-41-4	Not Listed
• Xylene	1330-20-7	Priority Substance List 1 (substance not considered toxic)
• Solvent naphtha (petroleum), light aromatic	64742-95-6	Not Listed
• 1-Methoxy-2-propanol acetate	108-65-6	Not Listed

United States

Labor

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

• Ethylbenzene	100-41-4	Not Listed
• Xylene	1330-20-7	Not Listed
• Solvent naphtha (petroleum), light aromatic	64742-95-6	Not Listed
• 1-Methoxy-2-propanol acetate	108-65-6	Not Listed

U.S. - OSHA - Specifically Regulated Chemicals

• Ethylbenzene	100-41-4	Not Listed
• Xylene	1330-20-7	Not Listed
• Solvent naphtha (petroleum), light aromatic	64742-95-6	Not Listed
• 1-Methoxy-2-propanol acetate	108-65-6	Not Listed

Environment

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

• Ethylbenzene	100-41-4	(listed under Ethyl benzene)
• Xylene	1330-20-7	(isomers and mixtures)
• Solvent naphtha (petroleum), light aromatic	64742-95-6	Not Listed
• 1-Methoxy-2-propanol acetate	108-65-6	Not Listed

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

• Ethylbenzene	100-41-4	1000 lb final RQ; 454 kg final RQ
• Xylene	1330-20-7	100 lb final RQ; 45.4 kg final RQ
• Solvent naphtha (petroleum), light aromatic	64742-95-6	Not Listed
• 1-Methoxy-2-propanol acetate	108-65-6	Not Listed

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

• Ethylbenzene	100-41-4	Not Listed
• Xylene	1330-20-7	Not Listed
• Solvent naphtha (petroleum), light aromatic	64742-95-6	Not Listed
• 1-Methoxy-2-propanol acetate	108-65-6	Not Listed

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

• Ethylbenzene	100-41-4	Not Listed
• Xylene	1330-20-7	Not Listed
• Solvent naphtha (petroleum), light aromatic	64742-95-6	Not Listed
• 1-Methoxy-2-propanol acetate	108-65-6	Not Listed

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

• Ethylbenzene	100-41-4	Not Listed
• Xylene	1330-20-7	Not Listed
• Solvent naphtha (petroleum), light aromatic	64742-95-6	Not Listed
• 1-Methoxy-2-propanol acetate	108-65-6	Not Listed

U.S. - CERCLA/SARA - Section 313 - Emission Reporting

• Ethylbenzene	100-41-4	0.1 % de minimis concentration
• Xylene	1330-20-7	1.0 % de minimis concentration
• Solvent naphtha (petroleum), light aromatic	64742-95-6	Not Listed
• 1-Methoxy-2-propanol acetate	108-65-6	Not Listed

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

• Ethylbenzene	100-41-4	Not Listed
• Xylene	1330-20-7	Not Listed
• Solvent naphtha (petroleum), light aromatic	64742-95-6	Not Listed
• 1-Methoxy-2-propanol acetate	108-65-6	Not Listed

United States - California

Environment

U.S. - California - Proposition 65 - Carcinogens List

• Ethylbenzene	100-41-4	carcinogen, initial date 6/11/04
• Xylene	1330-20-7	Not Listed
• Solvent naphtha (petroleum), light aromatic	64742-95-6	Not Listed
• 1-Methoxy-2-propanol acetate	108-65-6	Not Listed

U.S. - California - Proposition 65 - Developmental Toxicity		
• Ethylbenzene	100-41-4	Not Listed
• Xylene	1330-20-7	Not Listed
• Solvent naphtha (petroleum), light aromatic	64742-95-6	Not Listed
• 1-Methoxy-2-propanol acetate	108-65-6	Not Listed
U.S. - California - Proposition 65 - Maximum Allowable Dose Levels (MADL)		
• Ethylbenzene	100-41-4	Not Listed
• Xylene	1330-20-7	Not Listed
• Solvent naphtha (petroleum), light aromatic	64742-95-6	Not Listed
• 1-Methoxy-2-propanol acetate	108-65-6	Not Listed
U.S. - California - Proposition 65 - No Significant Risk Levels (NSRL)		
• Ethylbenzene	100-41-4	54 µg/day NSRL (inhalation); 41 µg/day NSRL (oral)
• Xylene	1330-20-7	Not Listed
• Solvent naphtha (petroleum), light aromatic	64742-95-6	Not Listed
• 1-Methoxy-2-propanol acetate	108-65-6	Not Listed
U.S. - California - Proposition 65 - Reproductive Toxicity - Female		
• Ethylbenzene	100-41-4	Not Listed
• Xylene	1330-20-7	Not Listed
• Solvent naphtha (petroleum), light aromatic	64742-95-6	Not Listed
• 1-Methoxy-2-propanol acetate	108-65-6	Not Listed
U.S. - California - Proposition 65 - Reproductive Toxicity - Male		
• Ethylbenzene	100-41-4	Not Listed
• Xylene	1330-20-7	Not Listed
• Solvent naphtha (petroleum), light aromatic	64742-95-6	Not Listed
• 1-Methoxy-2-propanol acetate	108-65-6	Not Listed

15.2 Chemical Safety Assessment

- No Chemical Safety Assessment has been carried out.

15.3 Other Information

- WARNING: This product contains a chemical known to the State of California to cause cancer.

Section 16 - Other Information

Relevant Phrases (code & full text)

- H225 - Highly flammable liquid and vapour
  H304 - May be fatal if swallowed and enters airways
  H312 - Harmful in contact with skin
  H315 - Causes skin irritation
  H332 - Harmful if inhaled
  H373 - May cause damage to organs through prolonged or repeated exposure.
  R11 - Highly flammable.
  R20 - Harmful by inhalation.
  R20/21 - Harmful by inhalation and in contact with skin.
  R38 - Irritating to skin.
  R48/20 - Harmful: danger of serious damage to health by prolonged exposure through inhalation.
  R65 - Harmful: may cause lung damage if swallowed.

Revision Date

- 24/May/2017

Preparation Date	• 05/March/2015
Disclaimer/Statement of Liability	• Information presented herein has been compiled from sources considered to be dependable, and is accurate and reliable to the best of our knowledge and belief but is not guaranteed to be so. Since conditions of use are beyond our control, we make no warranties, expressed or implied, except those that may be contained in our written contract of sale or acknowledgement.

Key to abbreviations

NDA = No Data Available

Safety Data Sheet

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

1.1 Product identifier

Product Name • **BC-622A Part B**

Synonyms • Aliphatic Isocyanate

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

Relevant identified use(s) • Reflective Paint

1.3 Details of the supplier of the safety data sheet

Manufacturer • Saint-Gobain Crystals

17900 Great Lakes Parkway
Hiram, OH 44234
United States
www.crystals.saint-gobain.com
scintillation@saint-gobain.com

Telephone (General) • 440-834-5600

1.4 Emergency telephone number

Manufacturer • 1-800-424-9300 - ChemTrec

Manufacturer • 703-525-3887 - Outside U.S.

Section 2: Hazards Identification

EU/EEC

According to: Regulation (EC) No 1272/2008 (CLP)/REACH 1907/2006 [amended by 453/2010]
According to: EU Directive 67/548/EEC (DSD) or 1999/45/EC (DPD)

2.1 Classification of the substance or mixture

CLP • Flammable Liquids 3 - H226
Skin Irritation 2 - H315
Skin Sensitization 1 - H317
Eye Irritation 2 - H319
Respiratory Sensitization 1 - H334
Specific Target Organ Toxicity Single Exposure 3: Narcotic Effects - H336
Specific Target Organ Toxicity Single Exposure 1 - H370

EUH066

DSD/DPD • Toxic (T)
Irritant (Xi)
Harmful (Xn)

R10, R20, R36/38, R39/23, R42/43, R66, R67

2.2 Label Elements

CLP

DANGER

Hazard statements •
H226 - Flammable liquid and vapour
H315 - Causes skin irritation
H317 - May cause an allergic skin reaction
H319 - Causes serious eye irritation
H334 - May cause allergy or asthma symptoms or breathing difficulties if inhaled
H336 - May cause drowsiness or dizziness
H370 - Causes damage to organs.
EUH066 - Repeated exposure may cause skin dryness or cracking.

Precautionary statements

Prevention •
P210 - Keep away from heat, sparks, open flames and/or hot surfaces. - No smoking.
P233 - Keep container tightly closed.
P240 - Ground and/or bond container and receiving equipment.
P241 - Use explosion-proof electrical/ventilating/lighting/equipment.
P242 - Use only non-sparking tools.
P243 - Take precautionary measures against static discharge.
P260 - Do not breathe mists, vapours, and/or spray.
P264 - Wash thoroughly after handling.
P270 - Do not eat, drink or smoke when using this product.
P271 - Use only outdoors or in a well-ventilated area.
P272 - Contaminated work clothing should not be allowed out of the workplace.
P280 - Wear protective gloves and eye/face protection , .
P285 - In case of inadequate ventilation wear respiratory protection.

Response •
P370+P378 - In case of fire: Use appropriate media for extinction.
P304+P341 - IF INHALED: If breathing is difficult, remove victim to fresh air and keep at rest in a position comfortable for breathing.
P342+P311 - If experiencing respiratory symptoms: Call a POISON CENTER or doctor/physician.
P303+P361+P353 - IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower.
P363 - Wash contaminated clothing before reuse.
P321 - Specific treatment, see supplemental first aid information.
P333+P313 - If skin irritation or rash occurs: Get medical advice/attention.
P305+P351+P338 - IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P337+P313 - If eye irritation persists: Get medical advice/attention.
P308+P311 - IF exposed or concerned: Call a POISON CENTER or doctor/physician.

Storage/Disposal •
P403+P233 - Store in a well-ventilated place. Keep container tightly closed.
P235 - Keep cool.
P405 - Store locked up.
P501 - Dispose of content and/or container in accordance with local, regional, national, and/or international regulations.

DSD/DPD

Risk phrases •
R10 - Flammable.
R20 - Harmful by inhalation.
R36/38 - Irritating to eyes and skin.
R39/23 - Toxic: danger of very serious irreversible effects through inhalation.
R42/43 - May cause sensitisation by inhalation and skin contact.

R66 - Repeated exposure may cause skin dryness or cracking.
R67 - Vapours may cause drowsiness and dizziness.

Safety phrases • S26 - In case of contact with eyes, rinse immediately with plenty of water and seek medical advice.
S37 - Wear suitable gloves.
S45 - In case of accident or if you feel unwell, seek medical advice immediately (show the label where possible).

2.3 Other Hazards

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

DSD/DPD • According to European Directive 1999/45/EC this material is considered dangerous.

United States (US)

According to: OSHA 29 CFR 1910.1200 HCS

2.1 Classification of the substance or mixture

OSHA HCS 2012 • Flammable Liquids 3
Skin Irritation 2
Skin Sensitization 1
Eye Irritation 2
Respiratory Sensitization 1
Specific Target Organ Toxicity Single Exposure 3: Respiratory Tract Irritation
Specific Target Organ Toxicity Single Exposure 3: Narcotic Effects
Specific Target Organ Toxicity Single Exposure 1

2.2 Label elements

OSHA HCS 2012

DANGER

Hazard statements • Flammable liquid and vapour
Causes skin irritation
May cause an allergic skin reaction
Causes serious eye irritation
May cause allergy or asthma symptoms or breathing difficulties if inhaled
May cause respiratory irritation
May cause drowsiness or dizziness
Causes damage to organs.

Precautionary statements

Prevention • Keep away from heat, sparks, open flames and/or hot surfaces. - No smoking.
Keep container tightly closed.
Ground and/or bond container and receiving equipment.
Use explosion-proof electrical/ventilating/lighting/equipment.
Use only non-sparking tools.
Take precautionary measures against static discharge.
Do not breathe mists, vapours, and/or spray.
Wash thoroughly after handling.
Do not eat, drink or smoke when using this product.
Use only outdoors or in a well-ventilated area.
Contaminated work clothing should not be allowed out of the workplace.
Wear protective gloves and eye/face protection , .
In case of inadequate ventilation wear respiratory protection.

Response • In case of fire: Use appropriate media for extinction.
IF INHALED: If breathing is difficult, remove victim to fresh air and keep at rest in a position comfortable for breathing.

If experiencing respiratory symptoms: Call a POISON CENTER or doctor/physician.
If on skin: Wash with plenty of water .
Take off contaminated clothing and wash before reuse.
Specific treatment, see supplemental first aid information.
If skin irritation or rash occurs: Get medical advice/attention.
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.
Call a POISON CENTER or doctor/physician if you feel unwell.
IF exposed: Call POISON CENTER or doctor/physician.

Storage/Disposal

- Store in a well-ventilated place. Keep container tightly closed.
Keep cool.
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

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

Canada

According to: WHMIS

2.1 Classification of the substance or mixture

WHMIS

- Combustible Liquids - B3
Other Toxic Effects - D2A
Other Toxic Effects - D2B

2.2 Label elements

WHMIS

- 

WHMIS

- Combustible Liquids - B3
Other Toxic Effects - D2A
Other Toxic Effects - D2B

2.3 Other hazards

WHMIS

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

Section 3 - Composition/Information on Ingredients

3.1 Substances

- Material does not meet the criteria of a substance.

3.2 Mixtures

Composition					
Chemical Name	**Identifiers**	**%**	**LD50/LC50**	**Classifications According to Regulation/Directive**	**Comments**
				EU DSD/DPD: Xn; R20; Xi; R36/38; Xi; R42/43; T; R39/23	

Hexamethylene diisocyanate homopolymer	**CAS:**28182-81-2	70% TO 80%	Inhalation-Rat LC50 • 18500 mg/m³ 1 Hour (s)	**EU CLP:** Acute Tox. 4, H332; Eye Irrit. 2, H319; Skin Irrit. 2, H315; Skin Sens. 1, H317; Resp. Sens. 1, H334; STOT SE 1 (Lungs, Inhl), H370 **OSHA HCS 2012:** Acute Tox. 4 (inhl); Eye Irrit. 2; Skin Irrit. 2; Skin Sens. 1; Resp. Sens. 1; STOT SE 1 (Lungs, Inhl);	NDA
Acetic acid, butyl ester	**CAS:**123-86-4 **EC Number:**204-658-1 **EU Index:**607-025-00-1	10% TO 20%	Ingestion/Oral-Rat LD50 • 10768 mg/kg Inhalation-Rat LC50 • 390 ppm 4 Hour(s) Skin-Rabbit LD50 • >17600 mg/kg	**EU DSD/DPD:** Annex VI, Table 3.2: R10; R66; R67 **EU CLP:** Annex VI, Table 3.1: Flam. Liq. 3, H226; STOT SE 3: Narc., H336; EUH066 **OSHA HCS 2012:** Flam. Liq. 2; Skin Irrit. 2; Eye Irrit. 2B; STOT SE 3: Narc.; STOT SE 3: Resp. Irrit. (Inhl)	NDA
2-Heptanone	**CAS:**110-43-0 **EC Number:**203-767-1 **EU Index:**606-024-00-3	10% TO 20%	Skin-Rabbit LD50 • 12600 µL/kg Ingestion/Oral-Rat LD50 • 1600 mg/kg	**EU DSD/DPD:** Annex VI, Table 3.2: R10; Xn; R20/22 **EU CLP:** Annex VI, Table 3.1: Flam. Liq. 3, H226; Acute Tox. 4 *, H332; Acute Tox. 4 *, H302 **OSHA HCS 2012:** Flam. Liq. 3; Acute Tox. 4 (orl); STOT SE 3: Narc.	NDA

Section 4 - First Aid Measures

4.1 Description of first aid measures

Inhalation
- IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing. Administer oxygen if breathing is difficult. Give artificial respiration if victim is not breathing.

Skin
- IF ON SKIN: Wash with plenty of soap and water. Wash skin with soap and water. Take off contaminated clothing and wash before reuse. 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
- Never give anything by mouth if victim is rapidly losing consciousness, is unconscious or convulsing. Do NOT induce vomiting. Have victim drink 60 to 240 ml (2 to 8 oz.) of water. If vomiting occurs naturally, have victim rinse mouth with water again. Get medical attention 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

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

See Section 2 for Potential Health Effects.

Section 5 - Firefighting Measures

5.1 Extinguishing media

Suitable Extinguishing Media
- Use dry chemical, foam or fog.

Unsuitable Extinguishing Media
- No data available

5.2 Special hazards arising from the substance or mixture

Unusual Fire and Explosion Hazards

- HIGHLY FLAMMABLE: Will be easily ignited by heat, sparks or flames.
  Containers may explode when heated.
  Extremely flammable liquid and vapor.
  Vapors may form explosive mixtures with air.
  Vapor explosion hazard indoors, outdoors or in sewers.
  Vapors may travel to source of ignition and flash back.
  Runoff to sewer may create fire or explosion hazard.

Hazardous Combustion Products

- Hydrogen cyanide, Isocyanate, Amines, Carbon dioxide, Carbon monoxide, Oxides of nitrogen, and Dense black smoke.

5.3 Advice for firefighters

- Wear positive pressure self-contained breathing apparatus (SCBA).
  Move containers from fire area if you can do it without risk.
  Use water spray to cool fire-exposed containers.
  Structural firefighters' protective clothing will only provide limited protection.
  Wear chemical protective clothing that is specifically recommended by the manufacturer. It may provide little or no thermal protection.

Section 6 - Accidental Release Measures

6.1 Personal precautions, protective equipment and emergency procedures

Personal Precautions

- Wear appropriate protective equipment including respiratory protection as conditions warrant. Do not touch or walk through spilled material. Do not touch damaged containers or spilled material unless wearing appropriate protective clothing. Ventilate enclosed areas.

Emergency Procedures

- As an immediate precautionary measure, isolate spill or leak area for at least 50 meters (150 feet) in all directions. ELIMINATE all ignition sources (no smoking, flares, sparks or flames in immediate area). Keep out of low areas. Keep unauthorized personnel away. Stay upwind. Ventilate closed spaces before entering.

6.2 Environmental precautions

- Avoid run off to waterways and sewers.

6.3 Methods and material for containment and cleaning up

Containment/Clean-up Measures

- Stop leak if you can do it without risk.
  All equipment used when handling the product must be grounded.
  Absorb or cover with dry earth, sand or other non-combustible material and transfer to containers.
  Use clean non-sparking tools to collect absorbed material.
  A vapor suppressing foam may be used to reduce vapors.
  LARGE SPILLS: Dike far ahead of liquid spill for later disposal.

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 only in well ventilated areas. Avoid contact with heat and ignition sources. Wear appropriate personal protective equipment, avoid direct contact. Do not breathe mist, vapors, or spray. Avoid contact with skin, eyes or clothing. Use only non-sparking tools. Take precautionary measures against static charges. Wash thoroughly with soap and water after handling and before eating, drinking, or using tobacco.

7.2 Conditions for safe storage, including any incompatibilities

Storage

- Store in a cool/low-temperature, well-ventilated place. Keep away from heat and ignition sources. Keep container closed when not in use. Keep away from incompatible materials.

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	NIOSH	OSHA
Acetic acid, butyl ester (123-86-4)	TWAs	150 ppm TWA	150 ppm TWA; 710 mg/m3 TWA	150 ppm TWA; 710 mg/m3 TWA
	STELs	200 ppm STEL	200 ppm STEL; 950 mg/m3 STEL	Not established
2-Heptanone (110-43-0)	TWAs	50 ppm TWA	100 ppm TWA; 465 mg/m3 TWA	100 ppm TWA; 465 mg/m3 TWA

8.2 Exposure controls

Engineering Measures/Controls

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

Personal Protective Equipment

Respiratory

- Follow the OSHA respirator regulations found in 29 CFR 1910.134 or European Standard EN 149. Use a NIOSH/MSHA or European Standard EN 149 approved respirator if exposure limits are exceeded or symptoms are experienced.

Eye/Face

- Wear chemical splash safety goggles.

Skin/Body

- Wear appropriate gloves.

Environmental Exposure Controls

- Controls should be engineered to prevent release to the environment, including procedures to prevent spills, atmospheric release and release to waterways. Follow best practice for site management and disposal of waste.

Key to abbreviations

ACGIH = American Conference of Governmental Industrial Hygiene
OSHA = Occupational Safety and Health Administration
STEL = Short Term Exposure Limits are based on 15-minute exposures
TWA = Time-Weighted Averages are based on 8h/day, 40h/week exposures

Section 9 - Physical and Chemical Properties

9.1 Information on Basic Physical and Chemical Properties

Material Description			
Physical Form	Liquid	Appearance/Description	Viscous liquid dispersion with a solvent odor.
Color	Data lacking	Odor	Solvent
Odor Threshold	Data lacking		
General Properties			
Boiling Point	126 to 152 °C(258.8 to 305.6 °F)	Melting Point/Freezing Point	Data lacking
Decomposition Temperature	Data lacking	pH	Data lacking
Specific Gravity/Relative Density	= 1.051 Water=1	Density	8.77 lbs/gal
Water Solubility	Data lacking	Viscosity	Data lacking
Explosive Properties	Data lacking	Oxidizing Properties:	Data lacking

Volatility			
Vapor Pressure	2.8 mbar @ 14 °C(57.2 °F)	Vapor Density	Data lacking
Evaporation Rate	Data lacking		
Flammability			
Flash Point	39 °C(102.2 °F)	UEL	7.9 %
LEL	1.1 %	Autoignition	Data lacking
Flammability (solid, gas)	Data lacking		
Environmental			
Octanol/Water Partition coefficient	Data lacking		

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

10.3 Possibility of hazardous reactions

- Hazardous polymerization will not occur.

10.4 Conditions to avoid

- Avoid heat, sparks, open flames and other ignition sources. Contact with moisture, materials that react with isocyanates or temperatures above 400 F Incompatible materials.

10.5 Incompatible materials

- Water, Strong bases, Copper, Strong oxidizing agents, Nitric acid, Sodium hydroxide, Alkali metal hydroxides.

10.6 Hazardous decomposition products

- Carbon monoxide, carbon dioxide, oxides of nitrogen, traces of HCN and HDI.

Section 11 - Toxicological Information

11.1 Information on toxicological effects

Components		
Hexamethylene diisocyanate homopolymer (70% TO 80%)	28182-81-2	**Acute Toxicity:** Inhalation-Rat LC50 • 18500 mg/m³ 1 Hour(s); Inhalation-Rat TCLo • 1.3 mg/m³ 6 Hour(s); *Lungs, Thorax, or Respiration*:**Acute pulmonary edema**; *Lungs, Thorax, or Respiration*:**Changes in lung weight**; **Irritation:** Eye-Rabbit • 100 mg • Moderate irritation; Skin-Rabbit • 500 mg • Moderate irritation
Acetic acid, butyl ester (10% TO 20%)	123-86-4	**Acute Toxicity:** Ingestion/Oral-Rat LD50 • 10768 mg/kg; *Behavioral*:**Somnolence (general depressed activity)**; *Lungs, Thorax, or Respiration*:**Other changes**; *Liver*:**Other changes**; Skin-Rabbit LD50 • >17600 mg/kg; **Irritation:** Eye-Rabbit • 100 mg • Moderate irritation; Skin-Rabbit • 500 mg 24 Hour(s) • Moderate irritation; **Multi-dose Toxicity:** Inhalation-Rat TCLo • 1500 ppm 6 Hour(s) 13 Week(s)-Intermittent; *Behavioral*:**Somnolence (general depressed activity)**; *Nutritional and Gross Metabolic:Gross Metabolite Changes*:**Weight loss or decreased weight gain**; Inhalation-Rat TCLo • 1500 ppm 6 Hour(s) 13 Week(s)-Continuous; *Behavioral*:**Somnolence (general depressed activity)**; *Behavioral*:**Food intake (animal)**; *Nutritional and Gross Metabolic:Gross Metabolite Changes*:**Weight loss or decreased weight gain**; **Reproductive:** Inhalation-Rat TCLo • 1500 ppm 7 Hour(s)(7-16D preg); *Reproductive Effects:Effects on Embryo*

		or Fetus:**Fetotoxicity (except death, e.g., stunted fetus)**; *Reproductive Effects:Specific Developmental Abnormalities*:**Musculoskeletal system**; Inhalation-Rat TCLo • 1500 ppm (6-20D preg); *Reproductive Effects:Effects on Embryo or Fetus*:**Fetotoxicity (except death, e.g., stunted fetus)**
2-Heptanone (10% TO 20%)	110-43-0	**Acute Toxicity:** Ingestion/Oral-Rat LD50 • 1600 mg/kg; *Behavioral*:**Ataxia**; *Lungs, Thorax, or Respiration*:**Respiratory depression**; Inhalation-Guinea Pig TCLo • 9300 mg/m³ 4 Hour(s); *Behavioral*:**General anesthetic**; Skin-Rabbit LD50 • 12600 µL/kg; **Irritation:** Skin-Rabbit • 14 mg 24 Hour(s)-Open • Mild irritation; **Multi-dose Toxicity:** Inhalation-Rat TCLo • 400 ppm 34 Day(s)-Intermittent; *Behavioral*:**Somnolence (general depressed activity)**; *Nutritional and Gross Metabolic:Gross Metabolite Changes*:**Weight loss or decreased weight gain**; **Reproductive:** Inhalation-Rat TCLo • 400 ppm (28D pre/1-19D preg); *Reproductive Effects:Maternal Effects*:**Other effects**

GHS Properties	Classification
Acute toxicity	**EU/CLP** • Data lacking **OSHA HCS 2012** • Data lacking
Skin corrosion/Irritation	**EU/CLP** • Skin Irritation 2 **OSHA HCS 2012** • Skin Irritation 2
Serious eye damage/Irritation	**EU/CLP** • Eye Irritation 2 **OSHA HCS 2012** • Eye Irritation 2
Skin sensitization	**EU/CLP** • Skin Sensitizer 1 **OSHA HCS 2012** • Skin Sensitizer 1
Respiratory sensitization	**EU/CLP** • Respiratory Sensitizer 1 **OSHA HCS 2012** • Respiratory Sensitizer 1
Aspiration Hazard	**EU/CLP** • Data lacking **OSHA HCS 2012** • Data lacking
Carcinogenicity	**EU/CLP** • Data lacking **OSHA HCS 2012** • Data lacking
Germ Cell Mutagenicity	**EU/CLP** • Data lacking **OSHA HCS 2012** • Data lacking
Toxicity for Reproduction	**EU/CLP** • Data lacking **OSHA HCS 2012** • Data lacking
STOT-SE	**EU/CLP** • Specific Target Organ Toxicity Single Exposure 1; Specific Target Organ Toxicity Single Exposure 3: Narcotic Effects **OSHA HCS 2012** • Specific Target Organ Toxicity Single Exposure 1; Specific Target Organ Toxicity Single Exposure 3: Narcotic Effects; Specific Target Organ Toxicity Single Exposure 3: Respiratory Tract Irritation
STOT-RE	**EU/CLP** • Data lacking **OSHA HCS 2012** • Data lacking

Potential Health Effects

Inhalation

Acute (Immediate)

- May cause respiratory irritation. Breathing large amounts of this material (above recommended exposure limits) may result in Central Nervous System depression resulting in dizziness, drowsiness, weakness, fatigue, nausea, headache, and unconsciousness. Exposure to Polymeric hexamethylene diisocyanate may lead to bronchitis, bronchial spasm and pulmonary edema. These effects are usually reversible. Chemical or hypersensitive pneumonitis, with flu-like symptoms have also been reported.

Chronic (Delayed)

- May cause allergy or asthma symptoms or breathing difficulties if inhaled.

Skin

Acute (Immediate)
- Causes skin irritation.

Chronic (Delayed)
- May cause skin sensitization and development of allergic contact dermatitis in a small proportion of individuals and may aggravate an existing dermatitis. Repeated exposure may cause skin dryness or cracking.

Eye

Acute (Immediate)
- Causes serious eye irritation.

Chronic (Delayed)
- No data available

Ingestion

Acute (Immediate)
- May cause gastrointestinal irritation.

Chronic (Delayed)
- No data available

Key to abbreviations

LC = Lethal Concentration
LD = Lethal Dose
TC = Toxic Concentration

Section 12 - Ecological Information

12.1 Toxicity

- Material data lacking.

12.2 Persistence and degradability

- Material data lacking.

12.3 Bioaccumulative potential

- Material data lacking.

12.4 Mobility in Soil

- Material data lacking.

12.5 Results of PBT and vPvB assessment

- PBT and vPvB assessment has not been carried out.

12.6 Other adverse effects

- Material data lacking.

Section 13 - Disposal Considerations

13.1 Waste treatment methods

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

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

Section 14 - Transport Information

	14.1 UN number	14.2 UN proper shipping name	14.3 Transport hazard class(es)	14.4 Packing group	14.5 Environmental hazards
DOT	UN1263	Paint	3	III	NDA

TDG	UN1263	PAINT	3	III	NDA
IMO/IMDG	UN1263	PAINT	3	III	NDA
IATA/ICAO	UN1263	Paint	3	III	NDA

14.6 Special precautions for user
- None specified.

14.7 Transport in bulk according to Annex II of Marpol and the IBC Code
- Data lacking.

Section 15 - Regulatory Information

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

SARA Hazard Classifications
- Acute, Chronic, Fire

Inventory						
Component	**CAS**	**Canada DSL**	**Canada NDSL**	**EU EINECS**	**EU ELNICS**	**TSCA**
2-Heptanone	110-43-0	Yes	No	Yes	No	Yes
Acetic acid, butyl ester	123-86-4	Yes	No	Yes	No	Yes
Hexamethylene diisocyanate homopolymer	28182-81-2	Yes	No	No	No	Yes

Canada

Labor

Canada - WHMIS - Classifications of Substances

• Acetic acid, butyl ester	123-86-4	B2
• 2-Heptanone	110-43-0	B3, D2B
• Hexamethylene diisocyanate homopolymer	28182-81-2	Not Listed

Canada - WHMIS - Ingredient Disclosure List

• Acetic acid, butyl ester	123-86-4	1 %
• 2-Heptanone	110-43-0	1 %
• Hexamethylene diisocyanate homopolymer	28182-81-2	Not Listed

Environment

Canada - CEPA - Priority Substances List

• Acetic acid, butyl ester	123-86-4	Not Listed
• 2-Heptanone	110-43-0	Not Listed
• Hexamethylene diisocyanate homopolymer	28182-81-2	Not Listed

United States

Labor

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

• Acetic acid, butyl ester	123-86-4	Not Listed
• 2-Heptanone	110-43-0	Not Listed
• Hexamethylene diisocyanate homopolymer	28182-81-2	Not Listed

U.S. - OSHA - Specifically Regulated Chemicals

• Acetic acid, butyl ester	123-86-4	Not Listed

• 2-Heptanone	110-43-0	Not Listed
• Hexamethylene diisocyanate homopolymer	28182-81-2	Not Listed

Environment

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

• Acetic acid, butyl ester	123-86-4	Not Listed
• 2-Heptanone	110-43-0	Not Listed
• Hexamethylene diisocyanate homopolymer	28182-81-2	Not Listed

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

• Acetic acid, butyl ester	123-86-4	5000 lb final RQ (listed under Butyl acetate); 2270 kg final RQ (listed under Butyl acetate)
• 2-Heptanone	110-43-0	Not Listed
• Hexamethylene diisocyanate homopolymer	28182-81-2	Not Listed

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

• Acetic acid, butyl ester	123-86-4	Not Listed
• 2-Heptanone	110-43-0	Not Listed
• Hexamethylene diisocyanate homopolymer	28182-81-2	Not Listed

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

• Acetic acid, butyl ester	123-86-4	Not Listed
• 2-Heptanone	110-43-0	Not Listed
• Hexamethylene diisocyanate homopolymer	28182-81-2	Not Listed

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

• Acetic acid, butyl ester	123-86-4	Not Listed
• 2-Heptanone	110-43-0	Not Listed
• Hexamethylene diisocyanate homopolymer	28182-81-2	Not Listed

U.S. - CERCLA/SARA - Section 313 - Emission Reporting

• Acetic acid, butyl ester	123-86-4	Not Listed
• 2-Heptanone	110-43-0	Not Listed
• Hexamethylene diisocyanate homopolymer	28182-81-2	Not Listed

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

• Acetic acid, butyl ester	123-86-4	Not Listed
• 2-Heptanone	110-43-0	Not Listed
• Hexamethylene diisocyanate homopolymer	28182-81-2	Not Listed

United States - California

Environment

U.S. - California - Proposition 65 - Carcinogens List

• Acetic acid, butyl ester	123-86-4	Not Listed
• 2-Heptanone	110-43-0	Not Listed
• Hexamethylene diisocyanate homopolymer	28182-81-2	Not Listed

U.S. - California - Proposition 65 - Developmental Toxicity

• Acetic acid, butyl ester	123-86-4	Not Listed
• 2-Heptanone	110-43-0	Not Listed
• Hexamethylene diisocyanate homopolymer	28182-81-2	Not Listed

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

• Acetic acid, butyl ester	123-86-4	Not Listed