SAFETY DATA SHEET

This Safety Data Sheet complies with the Canadian Hazardous Products Regulations, the United States Occupational Safety and Health Administration (OSHA) Hazard Communication Standard, 29 CFR 1910 (OSHA HCS)

1. Product and Supplier Identification

1.1 Product: **Substrate Bonder SB100, Part A**

1.2 Product Use: Bonding agent for acrylic and polyester sheets

1.3 Producer: **Integra Adhesives**
Unit 4 - 33759 Morey Avenue
Abbotsford, BC V2S 2W5
Canada, V2S 2W5

Telephone: +1(604) 850-1321

Supplier: **As above**

1.4 Emergencies (24-hour number): +1 (352) 323-3500 (Infotrac) - Contract # 103390

2. Hazards Identification

2.1 Classification of product or mixture
Note to reader: This product in an untested mixture and GHS classification is based on the classification of the ingredients and their concentrations. Proprietary ingredients , if any, do NOT exhibit any health effects not listed in this SDS.

GHS Classification:
Acute Toxicity, Oral, Category 4
Acute Toxicity, Inhalation, Category 1
Skin Irritation, Category 2
Eye Irritation: Category 2A
Respiratory Sensitization, Category 1
Skin Sensitization, Category 1
Specific Target Organ Toxicity, Single Exposure, Lungs, Category 3
Specific Target Organ Toxicity, Repeated Exposure, Lungs, Category 2
Carcinogenicity, Category 2

2.2 GHS Label Elements, including precautionary statements

Pictogram:

Signal Word: Danger

GHS Hazard Statements:

H302: Harmful if swallowed.
H315: Causes skin irritation.
H317: May cause an allergic skin reaction.
H319: Causes serious eye irritation.
H330: Fatal if inhaled.
H334: May cause allergy or asthma symptoms or breathing difficulties if inhaled.
H335: May cause respiratory irritation.
H351: Suspected of causing cancer .
H373: May cause damage to organs through prolonged or repeated exposure if inhaled.

GHS Precautionary Statements:

P201: Obtain special instructions before use.
P202: Do not handle until all safety precautions have been read and understood.
P260: Do not breathe dust/fume/gas/mist/vapours/spray.
P264: Wash skin 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/protective clothing/eye protection/face protection.
P284: Wear respiratory protection.
P301+P312: IF SWALLOWED: Call a POISON CENTER or doctor/physician if you feel unwell.
P302+P352: IF ON SKIN: Wash with plenty of soap and water.
P304+P340: IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing.
P305+P351+P338: IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P308+P313: If exposed or concerned: Get medical advice/attention.
P310: Immediately call a POISON CENTER or doctor/physician.
P320: Specific treatment is urgent (see First Aid Section on this label).
P321: Specific treatment (see supplemental first aid instruction on this label).
P330: Rinse mouth.
P333+P313: If skin irritation or rash occurs: Get medical advice/attention.
P337+P313: If eye irritation persists: Get medical advice/attention.
P342+P311: If experiencing respiratory symptoms: Call a POISON CENTER or doctor/physician.
P362+P364: P362+P364: Take off contaminated clothing and wash it before reuse
P403+P233: Store in a well-ventilated place. Keep container tightly closed.
P405: Store locked up.
P501: Dispose of contents/container to an approved waste disposal plant.

2.3 Hazards not otherwise classified (HNOC) or not covered by GHS: Lachrymator

2.4 Additional Information

Primary Routes of Entry:

Skin Contact:	Yes
Skin Absorption:	Yes
Eye Contact:	Yes
Ingestion:	Yes
Inhalation:	Yes

Emergency Overview: DANGER! Very toxic. Irritating to eyes and skin. May cause sensitization by inhalation. Symptoms are prostration, gasping, pallor, and uncoordinated movements. Symptoms may include redness, edema, drying, defatting and cracking of the skin. Symptoms of overexposure may be headache, dizziness, tiredness, nausea and vomiting.

Effects of Short-Term (Acute) Exposure:

Inhalation: May cause irritation of respiratory tract. Prolonged inhalation may be harmful. May Cause sensitization by inhalation. Do not breathe dust/fume/gas/mist/vapors/spray.

Skin Contact: Do not get this material in contact with skin. May cause skin irritation.

Eye Contact: Contact with eyes may cause irritation. Do not get this material in contact with eyes.

Ingestion: Irritating. May cause nausea, stomach pain and vomiting. Do not ingest.

Effects of Long-Term (Chronic) Exposure: Frequent or prolonged contact may defat and dry the skin, leading to discomfort and dermatitis. Single or repeated exposure may cause respiratory sensitization resulting in shortness of breath and asthma-like symptoms.

Medical Conditions Aggravated By Exposure: Persons susceptable to skin problems may find that the use of this product will cause increased symptoms of existing skin problems. Persons with prior lung and breathing problems may find that inhalation of fumes or vapours from this product will aggravate those problems.

3. Composition

3.1 Mixture composition

Component	% (w/w)	Exposure Limits (ACGIH)*	LD_{50}	LC_{50}
Diphenylmethane Diisocyanate (Isomers and homologues) (CAS No. 9016-87-9) (EINECS No. N/av)	50 - 70	N/d	>9400 mg/kg (dermal/rabbit)	0.49 mg/l (rat/ 4 hr)
4,4'-Diphenylmethane Diisocyanate (CAS No. 101-68-8) (EINECS No. 202-966-0)	30 - 50	TLV-TWA: 0.005 ppm	9200 mg/kg (oral/rat) 10000 mg/kg (dermal/rabbit)	2.24 mg/l (rat/1 hr)
Non-hazardous ingredients and ingredients below disclosure requirements.	0 - 40	N/ap	N/ap	N/ap
GHS CLASSIFICATION: ACUTE TOX, ORAL, Cat 4; ACUTE TOX, INH, Cat 1; EYE IRR., Cat 2A; SKIN SENS., Cat 1; RESP SENS, Cat 1; STOT SE, Lungs, Cat 3; STOT RE, Lungs, Cat 2; CARCINOGEN, Cat 2.				

* ACGIH: American Conference of Governmental Industrial Hygienists. Exposure limits may vary from time to time and from one jurisdiction to another. Check with local regulatory agency for the exposure limits in your area.

ABBREVIATION KEY: N/p: not published, N/d: not determined, N/ap: not applicable, N/av: not available

4. First Aid Measures

4.1 Description of First Aid Measures

General advice: Immediate medical attention is required. Ensure that medical personnel are aware of the material(s) involved, and take precautions to protect themselves. Show this safety data sheet to the doctor in attendance.

In case of eye contact: Immediately flush eyes with plenty of water for at least 15 minutes. If a contact lens is present, DO NOT delay irrigation or attempt to remove the lens. Continue rinsing. Call a physician or poison control center immediately.

In case of skin contact: Remove and isolate contaminated clothing and shoes. Immediately flush skin with plenty of water. Call a physician or poison control center immediately. Wash clothing separately before reuse.

If inhalation: Move to fresh air. Administer oxygen or artificial respiration if needed. Do not use mouth-to-mouth method if victim inhaled the substance. Induce artificial respiration with the aid of a pocket mask equipped with a one-way valve or other proper respiratory medical device. Call a physician or poison control center immediately.

If ingestion: IF SWALLOWED: Immediately call a POISON CENTER or doctor/physician. Rinse mouth thoroughly. Never give anything by mouth to a victim who is unconscious or is having convulsions. Do not induce vomiting without advice from poison control center. If vomiting occurs, keep head low so that stomach content doesn't get into the lungs. Do not use mouth-to-mouth method if victim ingested the substance. Induce artificial respiration with the aid of a pocket mask equipped with a one-way valve or other proper respiratory medical device.

4.2 Most important symptoms and effects, both acute and delayed

Effects of Short-Term (Acute) Exposure:
Inhalation: May cause irritation of respiratory tract. Prolonged inhalation may be harmful. May Cause sensitization by inhalation. Do not breathe dust/fume/gas/mist/vapors/spray.

Skin Contact: Do not get this material in contact with skin. May cause skin irritation.

Eye Contact: Contact with eyes may cause irritation. Do not get this material in contact with eyes.

Ingestion: Irritating. May cause nausea, stomach pain and vomiting. Do not ingest.

Effects of Long-Term (Chronic) Exposure: Frequent or prolonged contact may defat and dry the skin, leading to discomfort and dermatitis. Single or repeated exposure may cause respiratory sensitization resulting in shortness of breath and asthma-like symptoms.

Medical Conditions Aggravated By Exposure: Persons susceptable to skin problems may find that the use of this product will cause increased symptoms of existing skin problems. Persons with prior lung and breathing problems may find that inhalation of fumes or vapours from this product will aggravate those problems.

4.3 Indication of any immediate medical attention and special treatment needed
None

5. Fire Fighting Measures

5.1 Extinguishing Media

Suitable extinguishing media: Water spray, alcohol-resistant foam, dry chemical, or carbon dioxide.

5.2 Special hazards arising from mixture: Carbon dioxide and oxides of nitrogen.

Advice for firefighters: Firefighters should wear full protective clothing including self contained breathing apparatus. Firefighters must use standard protective equipment including flame retardant

coat, helmet with face shield, gloves, rubber boots, and in enclosed spaces, SCBA. ALWAYS stay away from tanks engulfed in flame. In the event of fire, cool tanks with water spray. Withdraw immediately in case of rising sound from venting safety device or any discoloration of tanks due to fire. For massive fire in cargo area, use unmanned hose holder or monitor nozzles, if possible. If not, withdraw and let fire burn out.

5.3 Further Information:

Sensitivity to Impact: Not available
Sensitivity to Static Discharge: Not available

NATIONAL FIRE PROTECTION ASSOCIATION (NFPA) HAZARD INDEX:
HEALTH: 3
FLAMMABILITY: 0
REACTIVITY: 0

6. Accidental Release Measures

6.1 Personal precautions, protective equipment and emergency procedures

Keep unnecessary personnel away. Keep people away from and upwind of spill/leak. Do not touch damaged containers or spilled material unless wearing appropriate protective clothing. Ventilate closed spaces before entering them.

Respiratory Protection: Use a positive-pressure air-supplied respirator if there is any potential for an uncontrolled release, exposure levels are not known, or any other circumstances where air-purifying respirators may not provide adequate protection. Where risk assessment shows air-purifying respirators are appropriate, use a full face particulate respirator type N100 (US) or Type P3 (EN 143) respirator cartridges as a backup to engineering controls.

Skin protection: Handle with gloves. Gloves must be inspected prior to use. Use proper glove removal technique (without touching glove's outer surface) to avoid skin contact with this product. Dispose of gloves after use in accordance with applicable laws and good hygeine practices.Wear appropriate chemical resistant clothing. Suggested materials to use for working with this mixture are as follows. Full contact: Natural latex/chloroprene with a minimum thickness of 0.6 mm. Breakthrough time approximately 480 minutes. Splash contact: Nitrile rubber with a minimum thickness of 0.11 mm. Breakthrough time approximately 60 minutes.

Eye and Face Protection: Face shield and safety glasses.

Footwear: No specific recommendation.

Other: Emergency eyes wash fountains should be available in vicinity of use. At minimum, an eye lavage kit should be kept on hand.

6.2 Environmental precautions

Prevent further leakage or spillage, if safe to do so. Do not let product enter drains and discharge into the environment must be avoided.

6.3 Methods and materials for containment and cleanup

Stop leak if you can do so without risk. Prevent entry into waterways, sewer, basements or confined areas.

Remedial Measures: Wash spill area with strong detergent and water solution, rinse with minimal water, if possible.

Large Spills: Stop the flow of material, if this is without risk. Dike the spilled material, where this is possible. Cover with plastic sheet to prevent spreading. Absorb in vermiculite, dry sand or earth and place into containers. Following product recovery, flush area with water.

Small Spills: Wipe up with absorbent material (e.g. cloth, fleece). Clean surface thoroughly to remove residual contamination.

6.4 Reference to other sections

For disposal, see Section 13

7. Handling and Storage

7.1 Precautions for safe handling

Handling Procedures: Do not breathe mist or vapor. Do not get this material in contact with eyes. Do not get this material in contact with skin. Avoid prolonged exposure. Do not get this material on clothing. Do not use in areas without adequate ventilation. When using do not eat or drink. Wash thoroughly after handling. Avoid release to the environment.

7.2 Conditions for safe storage, including incompatibilities

Storage: Keep locked up. Store in a closed container away from incompatible materials. Store in a well-ventilated place. Store away from incompatible materials (see Section 10 of the SDS). Keep away from food, drink and animal foodstuffs.

7.3 Specific end use(s)

No other uses except those mentioned in Section 1.2

8. Exposure Controls, Personal Protection

8.1 Control parameters

Components with workplace control parameters

4,4'-Diphenylmethane Diisocyanate:	TLV-TWA: 0.005 ppm

8.2 Exposure Controls

Engineering Controls: Good general ventilation (typically 10 air changes per hour) 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. Ensure adequate ventilation, especially in confined areas.

Respiratory Protection: Use a positive-pressure air-supplied respirator if there is any potential for an uncontrolled release, exposure levels are not known, or any other circumstances where air-purifying respirators may not provide adequate protection. Where risk assessment shows air-purifying respirators are appropriate, use a full face particulate respirator type N100 (US) or Type P3 (EN 143) respirator cartridges as a backup to engineering controls.

Skin protection: Handle with gloves. Gloves must be inspected prior to use. Use proper glove removal technique (without touching glove's outer surface) to avoid skin contact with this product. Dispose of gloves after use in accordance with applicable laws and good hygeine practices.Wear appropriate chemical resistant clothing. Suggested materials to use for working with this mixture are as follows. Full contact: Natural latex/chloroprene with a minimum thickness of 0.6 mm. Breakthrough time approximately 480 minutes. Splash contact: Nitrile rubber with a minimum thickness of 0.11 mm. Breakthrough time approximately 60 minutes.

Eye and Face Protection: Face shield and safety glasses.

Footwear: No specific recommendation.

Other: Emergency eyes wash fountains should be available in vicinity of use. At minimum, an eye lavage kit should be kept on hand.

Control of environmental exposure

Prevent further leakage or spillage, if safe to do so. Do not let product enter drains.

9. Physical and Chemical Properties

9.1 Information on basic physical and chemical properties

Appearance:	Off white liquid
Odour:	Odourless
Odour Threshold:	Not available
pH:	Not available
Melting Point/Freezing Point:	<0°C
Initial Boiling Point:	316°C
Flash Point:	190°C
Evaporation Rate:	Not available
Flammability:	Flammable
Upper Explosion Limit:	Not available
Lower Explosion Limit:	Not available
Vapour Pressure:	0.66 to 1.3 kPa
Vapour Density:	Heavier than air
Relative Density:	1.22 @ 25^{o}C (water =1)
Solubility:	Insoluble, reacts with water
Partition Coefficient:	Not available
Autoignition Temperature:	240°C
Decomposition Temperature:	Not available
Viscosity:	Not available
Explosive Properties:	Not available
Oxidizing Properties:	Not available
Percent Volatiles:	Not available

9.2 Other safety information: None

10. Stability and Reactivity

10.1 Reactivity
React with water.

10.2 Chemical Stability
Stable under recommended storage conditions.

10.3 Possibility of hazardous reactions
No data available.

10.4 Conditions to avoid
Avoid temperatures exceeding the flash point. Contact with incompatible materials.

10.5 Incompatible materials
Water. Acids. Strong oxidizing agents. Alcohols. Amides. Phenols. Strong bases. Metal Compounds. Mercaptans.

10.6 Hazardous decomposition products
Oxides of carbon and nitrogen.

11.Toxicological Information

11.1 Information on toxicological effects

Acute toxicity
Oral, Category 4, H302, Harmful if swallowed. Warning
Inhalation, Category 1, H330, Fatal if inhaled. Danger

Skin corrosion/irritation
Skin Irritation, Category 2, H315, Causes skin irritation. Warning

Serious eye damage/eye irritation
Eye Irritation, Category 2A, H319, Causes serious eye irritation. Warning

Respiratory or skin sensitization
Skin Sensitization, Category 1, H317, May cause an allergic skin reaction. Warning.
Respiratory Sensitization, Category 1, H334, May cause allergy or asthma symptoms or breathing difficulties if inhaled. Danger

Germ Cell Mutagenicity
Not classifiable.

Carcinogenicity
Carcinogenicity, Category 2, H351, Suspected of causing cancer. Warning

Reproductive toxicity
Not classifiable

Specific Target Organ Toxicity – Single exposure
Respiratory System, Inhalation, Category 3, H335, May cause respiratory irritation. Warning.

Specific Target Organ Toxicity – Repeated exposure
Respiratory System, Inhalation, Category 2, H373, May cause damage to organs through prolonged or repeated exposure if inhaled.

Aspiration Hazard
Not classifiable

Aquatic Toxicity
Not classifiable

Additional information
No information available

12. Ecological Information

12.1 Toxicity

Aquatic, Acute	Algae EC_{50} Green algae (Scenedesmus subspicatus) > 1640 mg/l, 72 hours (Polymeric MDI) Crustacea EC_{50} Water flea (Daphnia magna) 129.7 mg/l, 24 hours (Polymeric MDI) Fish LC_{50} Japanese rice fish (Oryzias latipes) 0.24 mg/l, 96 hours
Aquatic, Chronic	NOEC Water flea (Daphnia magna) > 10 mg/l, 21 days (Polymeric MDI)

12.2 Persistence and degradability
No data available

12.3 Bioaccumulative potential
Cyprinus carpio (Carp) – 28 day: 0.0008 mg/l
Bioconcentration factor: 92

12.4 Mobility in soil
No data available

12.5 Results of PBT and vPvB assessment

Not conducted

12.6 Other adverse effects

An environmental hazard cannot be excluded in the event of unprofessional handling or disposal.

13. Disposal Considerations

13.1 Waste treatment methods

Product:

Collect and reclaim or dispose in sealed containers at licensed waste disposal site. Do not allow this material to drain into sewers/water supplies. Dispose in accordance with all applicable regulations. Residual vapors may explode on ignition; do not cut, drill, or weld on or near the container. Whatever cannot be saved for recovery or recycling should be handled as hazardous waste and sent to an approved waste facility. Processing, use or contamination of this product may change the waste management options. State and local disposal regulations may differ from federal disposal regulations.

Contaminated Packaging:

Empty containers should be taken to an approved waste handling site for recycling or disposal. Since emptied containers may retain product residue, follow label warnings even after container is emptied.

14. Transport Information

Transport of Dangerous Goods (TDG and CLR): UN 2810, TOXIC LIQUID, ORGANIC, N.O.S. (Diphenylmethane Diisocyanate (Isomers and homologues), 4,4'-Diphenylmethane Diisocyanate), Class 6.1, PG III

United States Department of Transport (49CFR): UN 2810, TOXIC LIQUID, ORGANIC, N.O.S. (Diphenylmethane Diisocyanate (Isomers and homologues), 4,4'-Diphenylmethane Diisocyanate), Class 6.1, PG III

International Air Transport Association (IATA): UN 2810, TOXIC LIQUID, ORGANIC, N.O.S. (Diphenylmethane Diisocyanate (Isomers and homologues), 4,4'-Diphenylmethane Diisocyanate), Class 6.1, PG III

International Maritime Organization (IMO): UN 2810, TOXIC LIQUID, ORGANIC, N.O.S. (Diphenylmethane Diisocyanate (Isomers and homologues), 4,4'-Diphenylmethane Diisocyanate), Class 6.1, PG III
EmS F-A, S-A, Stowage Category A, Clear of living quarters

15. Regulatory Information

CANADIAN FEDERAL REGULATIONS:

CEPA, DOMESTIC SUBSTANCES LIST: Listed

UNITED STATES – FEDERAL REGULATIONS:

TOXIC SUBSTANCES CONTROL ACT (TSCA): All components are listed in the inventory.
CALIFORNIA Proposition 65, Safe Drinking Water and Toxicity Enforcement Act, 1986: None listed
OSHA, 29 CFR 1910, Subpart Z: Meets criteria for a hazardous substance.
CERCLA, 40 CFR 302: No ingredients listed.
SARA 302, 40 CFR 355: No ingredients are listed.
SARA 313, 40 CFR 372: Diphenylmethane-4,4'-diisocyanate, Revision Date 2011-07-01
Isocyanic acid, polymethylenepolyphenylene ester, Revision Date 2007-03-01
SARA 311/312, 40 CFR 370: Immediate (Acute), Delayed(Chronic) Health

16. Other Information

Original Preparation Date: March 17, 2015

Prepared by: Upward Packaging Inc, Unit 180 – 3771 Jacombs Road, Richmond, B.C., V6V 2L9

Disclaimer: This Safety Data Sheet (SDS) was prepared using information provided by CCINFO, ingredient supplier SDS and other relevant sources. This product has been classified using weight of evidence, expert judgment and previous testing as per Part 1.3 of the Fifth Edition of The Globally Harmonized System of Classification and Labelling of Chemicals (GHS). The information in this SDS is offered for your consideration and guidance when exposed to this product. Integra Adhesives expressly disclaims all expressed or implied warranties and assumes no responsibilities for the accuracy or completeness of the data contained herein. The data in this SDS does not apply to use with any other product or in any other process.

This Safety Data Sheet may not be changed, or altered in any way without the expressed knowledge and permission of Integra Adhesives.

Revisions: None

SAFETY DATA SHEET

This Safety Data Sheet complies with the Canadian Hazardous Products Regulations, the United States Occupational Safety and Health Administration (OSHA) Hazard Communication Standard, 29 CFR 1910 (OSHA HCS)

1. Product and Supplier Identification

1.1 Product: **Substrate Bonder SB100, Part B**

1.2 Product Use: Bonding agent for acrylic and polyester sheets

1.3 Producer: **Integra Adhesives**
Unit 4 - 33759 Morey Avenue
Abbotsford, BC V2S 2W5
Canada, V2S 2W5

Telephone: +1(604) 850-1321

Supplier: **As above**

1.4 Emergencies (24-hour number): +1 (352) 323-3500 (Infotrac) - Contract # 103390

2. Hazards Identification

2.1 Classification of product or mixture
Note to reader: This product in an untested mixture and GHS classification is based on the classification of the ingredients and their concentrations. Proprietary ingredients , if any, do NOT exhibit any health effects not listed in this SDS.

GHS Classification: Acute Toxicity, Oral, Category 4
Specific Target Organ Toxicity, Repeated Exposure, kidney, Category 2

2.2 GHS Label Elements, including precautionary statements

Pictogram:

Signal Word: Warning

GHS Hazard Statements: H302: Harmful if swallowed.
H373: May cause damage to organs through prolonged or repeated exposure if ingested.

GHS Precautionary Statements:

P260: Do not breathe dust/fume/gas/mist/vapours/spray.
P264: Wash skin thoroughly after handling.
P270: Do not eat, drink or smoke when using this product.
P301+P312: IF SWALLOWED: Call a POISON CENTER or doctor/physician if you feel unwell.
P314: Get medical advice/attention if you feel unwell
P330: Rinse mouth.
P501: Dispose of contents/container to an approved waste disposal plant.

2.3 Hazards not otherwise classified (HNOC) or not covered by GHS: None

2.4 Additional Information

Primary Routes of Entry:

Skin Contact:	No
Skin Absorption:	No
Eye Contact:	Yes
Ingestion:	Yes
Inhalation:	No

Emergency Overview: Warning. Although unlikely, repeated ingestion may cause damage to kidneys and liver. Under normal conditions of use, no adverse health effects are expected or known. This mixture is used with Part A under normal use. Follow directions for Part A

Effects of Short-Term (Acute) Exposure:

Inhalation: Under normal conditions of use, this mixture is not expected to cause adverse health effects. Do not breathe dust/fume/gas/mist/vapors/spray.

Skin Contact: Under normal conditions of use, this mixture is not expected to cause adverse health effects.

Eye Contact: Under normal conditions of use, this mixture is not expected to cause adverse health effects.

Ingestion: Under normal conditions of use, this mixture is not expected to cause adverse health effects. Only repeated ingestion may cause damage to the liver and kidneys.

Effects of Long-Term (Chronic) Exposure: Long-term exposure by ingestion may cause damage to the liver and kidneys.

Medical Conditions Aggravated By Exposure: None known.

3. Composition

3.1 Mixture composition

Component	% (w/w)	Exposure Limits (ACGIH)*	LD_{50}	LC_{50}
Diethylene Glycol (CAS No. 111-46-6) (EINECS No. 203-872-2)	4 - 8	TWA-WEEL 10 mg/m^3	12565 mg/kg (oral/rat) 11890 mg/kg (dermal/rabbit)	N/d
Non-hazardous ingredients and ingredients below disclosure requirements.	92 - 96	N/ap	N/ap	N/ap
GHS CLASSIFICATION: ACUTE TOX, ORAL, Cat 4; STOT RE, Lungs, Cat 2				

* ACGIH: American Conference of Governmental Industrial Hygienists. Exposure limits may vary from time to time and from one jurisdiction to another. Check with local regulatory agency for the exposure limits in your area.

ABBREVIATION KEY: N/p: not published, N/d: not determined, N/ap: not applicable, N/av: not available

4. First Aid Measures

4.1 Description of First Aid Measures

General advice: Immediate medical attention is required. Ensure that medical personnel are aware of the material(s) involved, and take precautions to protect themselves. Show this safety data sheet to the doctor in attendance.

In case of eye contact: Flush eyes with water as a precaution.

In case of skin contact: Wash off with soap and water. Consult a physician if irritation occurs..

If inhalation: Move to fresh air. Administer oxygen or artificial respiration if needed. Call a physician immediately.

If ingestion: IF SWALLOWED: Immediately call a POISON CENTER or doctor/physician. Rinse mouth thoroughly. Never give anything by mouth to a victim who is unconscious or is having convulsions. Do not induce vomiting without advice from poison control center. If vomiting occurs, keep head low so that stomach content doesn't get into the lungs. Do not use mouth-to-mouth method if victim ingested the substance. Induce artificial respiration with the aid of a pocket mask equipped with a one-way valve or other proper respiratory medical device.

4.2 Most important symptoms and effects, both acute and delayed

Effects of Short-Term (Acute) Exposure:

Inhalation: Under normal conditions of use, this mixture is not expected to cause adverse health effects. Do not breathe dust/fume/gas/mist/vapors/spray.

Skin Contact: Under normal conditions of use, this mixture is not expected to cause adverse health effects.

Eye Contact: Under normal conditions of use, this mixture is not expected to cause adverse health effects.

Ingestion: Under normal conditions of use, this mixture is not expected to cause adverse health effects. Only repeated ingestion may cause damage to the liver and kidneys.

Effects of Long-Term (Chronic) Exposure: Long-term exposure by ingestion may cause damage to the liver and kidneys.

Medical Conditions Aggravated By Exposure: None known.

4.3 Indication of any immediate medical attention and special treatment needed
None

5. Fire Fighting Measures

5.1 Extinguishing Media

Suitable extinguishing media: Water spray, alcohol-resistant foam, dry chemical, or carbon dioxide.

5.2 Special hazards arising from mixture: Oxides of carbon.

Advice for firefighters: Firefighters should wear full protective clothing including self contained breathing apparatus. Firefighters must use standard protective equipment including flame retardant coat, helmet with face shield, gloves, rubber boots, and in enclosed spaces, SCBA. ALWAYS stay away from tanks engulfed in flame. In the event of fire, cool tanks with water spray. Withdraw immediately in case of rising sound from venting safety device or any discoloration of tanks due to fire. For massive fire in cargo area, use unmanned hose holder or monitor nozzles, if possible. If not, withdraw and let fire burn out.

5.3 Further Information:

Sensitivity to Impact: Not available
Sensitivity to Static Discharge: Not available

NATIONAL FIRE PROTECTION ASSOCIATION (NFPA) HAZARD INDEX:
HEALTH: 0
FLAMMABILITY: 1
REACTIVITY: 0

6. Accidental Release Measures

6.1 Personal precautions, protective equipment and emergency procedures

Keep unnecessary personnel away. Keep people away from and upwind of spill/leak. Do not touch damaged containers or spilled material unless wearing appropriate protective clothing. Ventilate closed spaces before entering them.

Respiratory Protection: Where risk assessment shows air-purifying respirators are appropriate, use a full-faced respirator with multi-purpose (US) or Type ABEK (EN 14387) respirator cartridges as a backup to engineering controls. If the respirator is the sole means of protection, use a full-faced air supplied respirator. Use respirators and components tested and approved by NIOSH (US) or CEN (EU).

Skin protection: Handle with gloves. Gloves must be inspected prior to use. Use proper glove removal technique (without touching glove's outer surface) to avoid skin contact with this product. Dispose of gloves after use in accordance with applicable laws and good hygeine practices.Wear appropriate chemical resistant clothing. Suggested materials to use for working with this mixture are as follows. Full contact: Natural latex/chloroprene with a minimum thickness of 0.6 mm. Breakthrough time approximately 480 minutes.

Eye and Face Protection: Face shield and safety glasses.

Footwear: No specific recommendation.

Other: Emergency eyes wash fountains should be available in vicinity of use. At minimum, an eye lavage kit should be kept on hand.

6.2 Environmental precautions

Prevent further leakage or spillage, if safe to do so. Do not let product enter drains and discharge into the environment must be avoided.

6.3 Methods and materials for containment and cleanup

Stop leak if you can do so without risk. Prevent entry into waterways, sewer, basements or confined areas.

Remedial Measures: Wash spill area with strong detergent and water solution, rinse with minimal water, if possible.

Large Spills: Soak up with inert material and dispose of as a hazardous waste. Keep in suitable containers for disposal.

Small Spills: Soak up with inert material and dispose of as a hazardous waste. Keep in suitable containers for disposal.

6.4 Reference to other sections

For disposal, see Section 13

7. Handling and Storage

7.1 Precautions for safe handling

Handling Procedures: Do not breathe mist or vapor. Do not get this material in contact with eyes or skin. Avoid prolonged exposure. Do not get this material on clothing. Do not use in areas without adequate ventilation. When using do not eat or drink. Wash thoroughly after handling. Avoid release to the environment.

7.2 Conditions for safe storage, including incompatibilities

Storage: Keep container tightly closed and store in a dry, well-ventilated place. Containers that have been opened must be carefully resealed and kept upright to prevent leakage.

7.3 Specific end use(s)

No other uses except those mentioned in Section 1.2

8. Exposure Controls, Personal Protection

8.1 Control parameters

Components with workplace control parameters

Diethylene glycol: TWA-WEEL: 10 mg/m^3

8.2 Exposure Controls

Engineering Controls: Handle in accordance with good industrial hygiene and safety practices. Wash hands at break time and at the end of the day.

Respiratory Protection: Where risk assessment shows air-purifying respirators are appropriate, use a full-faced respirator with multi-purpose (US) or Type ABEK (EN 14387) respirator cartridges as a backup to engineering controls. If the respirator is the sole means of protection, use a full-faced air supplied respirator. Use respirators and components tested and approved by NIOSH (US) or CEN (EU).

Skin protection: Handle with gloves. Gloves must be inspected prior to use. Use proper glove removal technique (without touching glove's outer surface) to avoid skin contact with this product. Dispose of gloves after use in accordance with applicable laws and good hygeine practices.Wear

appropriate chemical resistant clothing. Suggested materials to use for working with this mixture are as follows. Full contact: Natural latex/chloroprene with a minimum thickness of 0.6 mm. Breakthrough time approximately 480 minutes.

Eye and Face Protection: Face shield and safety glasses.

Footwear: No specific recommendation.

Other: Emergency eyes wash fountains should be available in vicinity of use. At minimum, an eye lavage kit should be kept on hand

Control of environmental exposure

Prevent further leakage or spillage, if safe to do so. Do not let product enter drains.

9. Physical and Chemical Properties

9.1 Information on basic physical and chemical properties

Appearance:	Clear to straw coloured viscous liquid
Odour:	Mild
Odour Threshold:	Not available
pH:	Not applicable
Melting Point/Freezing Point:	**<**0°C
Initial Boiling Point:	>100°C
Flash Point:	190-196^{o}C (ASTM D-93 Closed Cup)
Evaporation Rate:	7.5 (n-butyl acetate=1)
Flammability:	Combustible
Upper Explosion Limit:	Not available
Lower Explosion Limit:	Not available
Vapour Pressure:	106.4 kPa @ 25^{o}C
Vapour Density:	Not available
Relative Density:	1.44 @ 25^{o}C (water =1)
Solubility:	> 50% solubility in water
Partition Coefficient:	Not available
Autoignition Temperature:	Not available
Decomposition Temperature:	Not available
Viscosity:	Not available
Explosive Properties:	Not available
Oxidizing Properties:	Not available
Percent Volatiles:	Not available

9.2 Other safety information: None

10. Stability and Reactivity

10.1 Reactivity
No data available

10.2 Chemical Stability
Stable under recommended storage conditions.

10.3 Possibility of hazardous reactions
No data available.

10.4 Conditions to avoid
Avoid temperatures exceeding the flash point. Contact with incompatible materials.

10.5 Incompatible materials
Strong oxidizing agents. Strong acids. Zinc.

10.6 Hazardous decomposition products

Oxides of carbon.

11.Toxicological Information

11.1 Information on toxicological effects

Acute toxicity
Oral, Category 4, H302, Harmful if swallowed. Warning

Skin corrosion/irritation
Not classifiable.

Serious eye damage/eye irritation
Not classifiable.

Respiratory or skin sensitization
Not classifiable.

Germ Cell Mutagenicity
Not classifiable.

Carcinogenicity
Not classifiable.

Reproductive toxicity
Not classifiable

Specific Target Organ Toxicity – Single exposure
Not classifiable.

Specific Target Organ Toxicity – Repeated exposure
Respiratory System, Inhalation, Category 2, H373, May cause damage to organs through prolonged or repeated exposure if ingested.

Aspiration Hazard
Not classifiable

Aquatic Toxicity
Not classifiable

Additional information
No information available

12. Ecological Information

12.1 Toxicity

Aquatic, Acute No data

Aquatic, Chronic No data

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
Not conducted

12.6 Other adverse effects
An environmental hazard cannot be excluded in the event of unprofessional handling or disposal.

13. Disposal Considerations

13.1 Waste treatment methods

Product:

Collect and reclaim or dispose in sealed containers at licensed waste disposal site. Do not allow this material to drain into sewers/water supplies. Dispose in accordance with all applicable regulations. Residual vapors may explode on ignition; do not cut, drill, or weld on or near the container. Whatever cannot be saved for recovery or recycling should be handled as hazardous waste and sent to an approved waste facility. Processing, use or contamination of this product may change the waste management options. State and local disposal regulations may differ from federal disposal regulations.

Contaminated Packaging:

Empty containers should be taken to an approved waste handling site for recycling or disposal. Since emptied containers may retain product residue, follow label warnings even after container is emptied.

14. Transport Information

Transport of Dangerous Goods (TDG and CLR): Not regulated

United States Department of Transport (49CFR): Not regulated

International Air Transport Association (IATA): Not regulated

International Maritime Organization (IMO): Not regulated

15. Regulatory Information

CANADIAN FEDERAL REGULATIONS:

CEPA, DOMESTIC SUBSTANCES LIST: Listed

UNITED STATES – FEDERAL REGULATIONS:

TOXIC SUBSTANCES CONTROL ACT (TSCA): All components are listed in the inventory.
CALIFORNIA Proposition 65, Safe Drinking Water and Toxicity Enforcement Act, 1986: None listed
OSHA, 29 CFR 1910, Subpart Z: Meets criteria for a hazardous substance.
CERCLA, 40 CFR 302: No ingredients listed.
SARA 302, 40 CFR 355: No ingredients are listed.
SARA 313, 40 CFR 372: No ingredients are listed.
SARA 311/312, 40 CFR 370: Immediate (Acute)

16. Other Information

Original Preparation Date: March 17, 2015

Prepared by: Upward Packaging Inc, Unit 180 – 3771 Jacombs Road, Richmond, B.C., V6V 2L9

Disclaimer: This Safety Data Sheet (SDS) was prepared using information provided by CCINFO, ingredient supplier SDS and other relevant sources. This product has been classified using weight of evidence, expert judgment and previous testing as per Part 1.3 of the Fifth Edition of The Globally Harmonized System of Classification and Labelling of Chemicals (GHS). The information in this

SDS is offered for your consideration and guidance when exposed to this product. Integra Adhesives expressly disclaims all expressed or implied warranties and assumes no responsibilities for the accuracy or completeness of the data contained herein. The data in this SDS does not apply to use with any other product or in any other process.

This Safety Data Sheet may not be changed, or altered in any way without the expressed knowledge and permission of Integra Adhesives.

Revisions: None