SUB 100 Substrate Bonder Safety Data Sheet (SDS)

Issued: February 25, 2023
Revision: 2

SECTION 1: Identification

1.1. Identification

Product form : Mixture

Product name : Substrate Bonder

Product code : SUB100

1.2. Recommended use and restrictions on use

Recommended use : Adhesives, sealants

Restrictions on use : No additional information available

1.3. Supplier

Big Dog Adhesives LLC
435 Harrison Street
Elkhart, IN 46516
Phone: 574-350-2237
Email: sales@bigdogadhesives.com
www.bigdogadhesives.com

Emergency telephone number : **In Case of Emergency Contact CHEMTREC: 800-424-9300 (USA) 703-527-3887 (INTERNATIONAL)**

SECTION 2: Hazard(s) identification

2.1. Classification of the substance or mixture

GHS classification

Skin corrosion/irritation, Category 2	H315	Causes skin irritation.
Serious eye damage/eye irritation, Category 2A	H319	Causes serious eye irritation.
Respiratory sensitisation, Category 1	H334	May cause allergy or asthma symptoms or breathing difficulties if inhaled.
Skin sensitisation, Category 1	H317	May cause an allergic skin reaction.
Carcinogenicity, Category 2	H351	Suspected of causing cancer.
Specific target organ toxicity — Repeated exposure, Category 2	H373	May cause damage to organs through prolonged or repeated exposure.

Full text of H statements see section 16

2.2. GHS Label elements, including precautionary statements

GHS-US labelling

Hazard pictograms (GHS) :

Signal word (GHS) : Danger

Hazard statements (GHS US) :
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.
H351 - Suspected of causing cancer.
H373 - May cause damage to organs through prolonged or repeated exposure.

Precautionary statements (GHS) :
P201 - Obtain special instructions before use.
P202 - Do not handle until all safety precautions have been read and understood.
P260 - Do not breathe mist, spray, vapours.
P261 - Avoid breathing mist, spray, vapours.
P264 - Wash hands, forearms and face thoroughly after handling.
P272 - Contaminated work clothing must not be allowed out of the workplace.
P280 - Wear protective gloves/protective clothing/eye protection/face protection.
P284 - [In case of inadequate ventilation] wear respiratory protection.
P302+P352 - If on skin: Wash with plenty of water.
P304+P341 - If inhaled: If breathing is difficult, remove person to fresh air and keep 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.
P314 - Get medical advice/attention if you feel unwell.
P321 - Specific treatment (see supplemental first aid instruction on this label).

P332+P313 - If skin irritation occurs: Get medical advice/attention.
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.
P362+P364 - Take off contaminated clothing and wash it before reuse.
P363 - Wash contaminated clothing before reuse.
P405 - Store locked up.
P501 - Dispose of contents/container to hazardous or special waste collection point, in accordance with local, regional, national and/or international regulation.

2.3. Other hazards which do not result in classification

No additional information available

2.4. Unknown acute toxicity (GHS_US)

9.41% of the mixture consists of ingredient(s) of unknown acute toxicity (Inhalation (Dust/Mist))

SECTION 3: Composition/information on ingredients

3.1. Substances

Not applicable

3.2. Mixtures

Name	Product identifier	%	GHS classification
4,4'Methylene bisphenyl isocyanate	(CAS-No.) 101-68-8	5 - 15	Acute Tox. 4 (Inhalation), H332 Skin Irrit. 2, H315 Eye Irrit. 2A, H319 Resp. Sens. 1, H334 Skin Sens. 1, H317 Carc. 2, H351 STOT SE 3, H335 STOT RE 2, H373
Hydroxy terminated poly(oxylalkyated) polyol	(CAS-No.) 102-60-3	1 - 10	Eye Irrit. 2A, H319
Polyoxypropylenediamine AC3	(CAS-No.) 9046-10-0	0.5 - 1.5	Skin Corr. 1C, H314 Eye Dam. 1, H318 Aquatic Chronic 3, H412

***Chemical name, CAS number and/or exact concentration have been withheld as a trade secret**

Full text of hazard classes and H-statements : see section 16

SECTION 4: First-aid measures

4.1. Description of first aid measures

First-aid measures general : Never give anything by mouth to an unconscious person. If you feel unwell, seek medical advice (show the label where possible).

First-aid measures after inhalation : 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 a doctor.

First-aid measures after skin contact : Wash skin thoroughly with mild soap and water. If skin irritation or rash occurs: Get medical advice/attention. Take off contaminated clothing and wash it before reuse.

First-aid measures after eye contact : 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.

First-aid measures after ingestion : Rinse mouth. Do NOT induce vomiting. Get medical advice/attention if you feel unwell.

4.2. Most important symptoms and effects (acute and delayed)

Symptoms/effects : May cause damage to organs through prolonged or repeated exposure. Suspected of causing cancer.

Symptoms/effects after inhalation : May cause allergy or asthma symptoms or breathing difficulties if inhaled.

Symptoms/effects after skin contact : Causes skin irritation. May cause an allergic skin reaction.

Symptoms/effects after eye contact : Causes serious eye irritation.

4.3. Immediate medical attention and special treatment, if necessary

Treat symptomatically.

SECTION 5: Fire-fighting measures

5.1. Suitable (and unsuitable) extinguishing media

Suitable extinguishing media : Foam. Dry powder. Carbon dioxide. Water spray. Sand.

Unsuitable extinguishing media : Do not use a heavy water stream.

5.2. Specific hazards arising from the chemical

Fire hazard : Burning produces irritating, toxic and noxious fumes.

Explosion hazard : Heat may build pressure, rupturing closed containers.

Reactivity : No dangerous reactions known.

5.3. Special protective equipment and precautions for fire-fighters

Firefighting instructions : Use water spray or fog for cooling exposed containers. Exercise caution when fighting any chemical fire. Prevent fire fighting water from entering the environment.

Protection during firefighting : Do not enter fire area without proper protective equipment, including respiratory protection. Wear a self contained breathing apparatus. Wear fire/flame resistant/retardant clothing.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

General measures : Do not get in eyes, on skin, or on clothing. Do not breathe vapour. Ensure adequate ventilation. No open flames. No smoking. Remove ignition sources. Use personal protective equipment as required.

6.1.1. For non-emergency personnel

Protective equipment : Refer to section 8.2.

Emergency procedures : Evacuate unnecessary personnel.

6.1.2. For emergency responders

Protective equipment : Refer to section 8.2.

Emergency procedures : Ventilate area.

6.2. Environmental precautions

Prevent entry to sewers and public waters.

6.3. Methods and material for containment and cleaning up

For containment : Contain any spills with dikes or absorbents to prevent migration and entry into sewers or streams.

Methods for cleaning up : Soak up spills with inert solids, such as clay or diatomaceous earth as soon as possible. Collect spillage. Store away from other materials.

6.4. Reference to other sections

See Heading 8. Exposure controls and personal protection.

SECTION 7: Handling and storage

7.1. Precautions for safe handling

Precautions for safe handling : Wash hands and other exposed areas with mild soap and water before eating, drinking or smoking and when leaving work. Provide good ventilation in process area to prevent formation of vapour. Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Use only outdoors or in a well-ventilated area. Do not breathe vapours. Do not get in eyes, on skin, or on clothing.

Hygiene measures : Take off contaminated clothing and wash before reuse. Contaminated work clothing should not be allowed out of the workplace. Do not eat, drink or smoke when using this product.

7.2. Conditions for safe storage, including any incompatibilities

Storage conditions : Keep only in the original container in a cool well ventilated place. Keep container tightly closed.

Incompatible products : Strong bases. Strong acids. Strong oxidizers. Water. alcohols. Amides. Phenols. Metal compounds. Mercaptans. zinc.

Incompatible materials : Sources of ignition. Direct sunlight.

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

4,4'Methylene bisphenyl isocyanate (101-68-8)		
ACGIH	Local name	Methylene bisphenyl isocyanate (MDI)
ACGIH	ACGIH TWA (mg/m³)	0.051 mg/m³
ACGIH	ACGIH TWA (ppm)	0.005 ppm
ACGIH	Remark (ACGIH)	TLV® Basis: Resp sens

4,4'Methylene bisphenyl isocyanate (101-68-8)		
ACGIH	Regulatory reference	ACGIH 2020
OSHA	OSHA PEL (Ceiling) (mg/m³)	0.2 mg/m³
OSHA	OSHA PEL (Ceiling) [ppm]	0.02 ppm
OSHA	Regulatory reference (US-OSHA)	OSHA Annotated Table Z-1
IDLH	US IDLH (mg/m³)	75 mg/m³
NIOSH	NIOSH REL (TWA) (mg/m³)	0.05 mg/m³
NIOSH	NIOSH REL (TWA) [ppm]	0.005 ppm
NIOSH	NIOSH REL (ceiling) (mg/m³)	0.2 mg/m³
NIOSH	NIOSH REL (Ceiling) [ppm]	0.02 ppm

Hydroxy terminated poly(oxylalkyated) polyol (102-60-3)
Not applicable

Polyoxypropylenediamine AC3 (9046-10-0)
Not applicable

8.2. Appropriate engineering controls

Appropriate engineering controls : Avoid creating mist or spray. Emergency eye wash fountains and safety showers should be available in the immediate vicinity of any potential exposure. Use only in well ventilated areas.

Environmental exposure controls : Avoid release to the environment. Prevent leakage or spillage.

8.3. Individual protection measures/Personal protective equipment

Personal protective equipment:

Avoid all unnecessary exposure.

Hand protection:

Wear suitable gloves resistant to chemical penetration. Latex gloves. Chloroprene rubber. Breakthrough time is > 480 minutes. Nitrile rubber. Breakthrough time: 60 min

Eye protection:

Chemical goggles or safety glasses

Skin and body protection:

Wear suitable protective clothing

Respiratory protection:

In case of inadequate ventilation wear respiratory protection. If excessive exposure exists, use only approved air-purifying or supplied air respirator operated in a positive pressure mode

Other information:

Do not eat, drink or smoke during use.

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Physical state : Liquid

Appearance : Viscous.

Colour : straw

Odour : Solvent

Odour threshold : No data available

pH : No data available

Melting point : No data available

Freezing point : No data available

Boiling point : No data available

Flash point : No data available

Relative evaporation rate (butylacetate=1)	:	No data available
Flammability (solid, gas)	:	Non flammable.
Vapour pressure	:	No data available
Relative vapour density at 20 °C	:	No data available
Relative density	:	No data available
Solubility	:	No data available
Log Pow	:	No data available
Auto-ignition temperature	:	No data available
Decomposition temperature	:	No data available
Viscosity, kinematic	:	No data available
Viscosity, dynamic	:	No data available
Explosive limits	:	No data available
Explosive properties	:	No data available
Oxidising properties	:	No data available

9.2. Other information

No additional information available

SECTION 10: Stability and reactivity

10.1. Reactivity

No dangerous reactions known.

10.2. Chemical stability

Stable under normal conditions.

10.3. Possibility of hazardous reactions

Hazardous polymerization will not occur.

10.4. Conditions to avoid

Direct sunlight. Extremely high or low temperatures.

10.5. Incompatible materials

Strong acids. Strong bases. Strong oxidizers. Water. alcohols. Amides. Phenols. Metal compounds. Mercaptans. zinc.

10.6. Hazardous decomposition products

Carbon monoxide. Carbon dioxide. Nitrogen oxides.

SECTION 11: Toxicological information

11.1. Information on toxicological effects

Acute toxicity (oral)	:	Not classified
Acute toxicity (dermal)	:	Not classified
Acute toxicity (inhalation)	:	Not classified

Unknown acute toxicity (GHS_US)	9.41% of the mixture consists of ingredient(s) of unknown acute toxicity (Inhalation (Dust/Mist))
4,4'Methylene bisphenyl isocyanate (101-68-8)	
LD50 oral rat	> 10000 mg/kg
LD50 dermal rat	> 9400 mg/kg
ATE (gases)	4500 ppmv/4h
ATE (vapours)	11 mg/l/4h
ATE (dust,mist)	1.5 mg/l/4h
Hydroxy terminated poly(oxylalkyated) polyol (102-60-3)	
LD50 oral rat	2890 mg/kg bodyweight
LD50 dermal rat	> 2000 mg/kg bodyweight
ATE (oral)	2890 mg/kg bodyweight
Polyoxypropylenediamine AC3 (9046-10-0)	
LD50 oral rat	2885 mg/kg
LD50 dermal rabbit	2980 mg/kg

Polyoxypropylenediamine AC3 (9046-10-0)	
LC50 Inhalation - Rat	> 0.74 mg/l/4h
ATE (oral)	2885 mg/kg bodyweight
ATE (dermal)	2980 mg/kg bodyweight

Skin corrosion/irritation : Causes skin irritation.

Serious eye damage/irritation : Causes serious eye irritation.

Respiratory or skin sensitisation : May cause allergy or asthma symptoms or breathing difficulties if inhaled. May cause an allergic skin reaction.

Germ cell mutagenicity : Not classified

Carcinogenicity : Suspected of causing cancer.

4,4'Methylene bisphenyl isocyanate (101-68-8)	
IARC group	3 - Not classifiable

Reproductive toxicity : Not classified

STOT-single exposure : Not classified

4,4'Methylene bisphenyl isocyanate (101-68-8)	
STOT-single exposure	May cause respiratory irritation.

STOT-repeated exposure : May cause damage to organs through prolonged or repeated exposure.

4,4'Methylene bisphenyl isocyanate (101-68-8)	
STOT-repeated exposure	May cause damage to organs through prolonged or repeated exposure.

Aspiration hazard : Not classified

Viscosity, kinematic : No data available

Likely routes of exposure : Inhalation. Skin and eye contact.

Symptoms/effects : May cause damage to organs through prolonged or repeated exposure. Suspected of causing cancer.

Symptoms/effects after inhalation : May cause allergy or asthma symptoms or breathing difficulties if inhaled.

Symptoms/effects after skin contact : Causes skin irritation. May cause an allergic skin reaction.

Symptoms/effects after eye contact : Causes serious eye irritation.

SECTION 12: Ecological information

12.1. Toxicity

4,4'Methylene bisphenyl isocyanate (101-68-8)	
LC50 fish 1	1000 mg/l
EC50 crustacea	1000 mg/l
NOEC chronic crustacea	10 mg/l
NOEC chronic algae	1640 mg/l

Polyoxypropylenediamine AC3 (9046-10-0)	
LC50 fish 1	> 15 mg/l
EC50 crustacea	80 mg/l

12.2. Persistence and degradability

Polyoxypropylenediamine AC3 (9046-10-0)	
Biodegradation	0 %

12.3. Bioaccumulative potential

Substrate Bonder	
Bioaccumulative potential	Not established.

4,4'Methylene bisphenyl isocyanate (101-68-8)	
BCF fish 1	200

Polyoxypropylenediamine AC3 (9046-10-0)	
Log Pow	1.34

12.4. Mobility in soil

Substrate Bonder	
Ecology - soil	Not established.

12.5. Other adverse effects

Other information : Avoid release to the environment.

SECTION 13: Disposal considerations

13.1. Disposal methods

Sewage disposal recommendations : Do not dispose of waste into sewer.

Waste disposal recommendations : Dispose in a safe manner in accordance with local/national regulations.

Ecology - waste materials : Avoid release to the environment.

SECTION 14: Transport information

Department of Transportation (DOT)

In accordance with DOT

Not regulated.

Transport by sea

Not regulated.

Air transport

Not regulated.

SECTION 15: Regulatory information

15.1. US Federal regulations

All components of this product are listed, or excluded from listing, on the United States Environmental Protection Agency Toxic Substances Control Act (TSCA) inventory

4,4'Methylene bisphenyl isocyanate (101-68-8)	
Subject to reporting requirements of United States SARA Section 313 Listed on EPA Hazardous Air Pollutant (HAPS)	
Listed on EPA Hazardous Air Pollutant (HAPS)	
CERCLA RQ	5000 lb

Polyoxypropylenediamine AC3 (9046-10-0)	
EPA TSCA Regulatory Flag	XU - XU - indicates a substance exempt from reporting under the Chemical Data Reporting Rule, (40 CFR 711).

15.2. International regulations

CANADA

4,4'Methylene bisphenyl isocyanate (101-68-8)
Listed on the Canadian DSL (Domestic Substances List) inventory.

Hydroxy terminated poly(oxylalkyated) polyol (102-60-3)
Listed on the Canadian DSL (Domestic Substances List) inventory.

Polyoxypropylenediamine AC3 (9046-10-0)
Listed on the Canadian DSL (Domestic Substances List) inventory.

EU-Regulations

4,4'Methylene bisphenyl isocyanate (101-68-8)
Listed on the EEC inventory EINECS (European Inventory of Existing Commercial Chemical Substances)

Hydroxy terminated poly(oxylalkyated) polyol (102-60-3)
Listed on the EEC inventory EINECS (European Inventory of Existing Commercial Chemical Substances)

Polyoxypropylenediamine AC3 (9046-10-0)
Listed on the EEC inventory EINECS (European Inventory of Existing Commercial Chemical Substances)

National regulations

4,4'Methylene bisphenyl isocyanate (101-68-8)
Listed on IECSC (Inventory of Existing Chemical Substances Produced or Imported in China) Listed on the Chinese Catalog of Hazardous Chemicals. Listed on the AICS (Australian Inventory of Chemical Substances) CSCL: Japanese Chemical Substances Control Law Listed on KECL/KECI (Korean Existing Chemicals Inventory) Listed on NZIoC (New Zealand Inventory of Chemicals) Mexico - National Inventory of Chemical Substances Listed on PICCS (Philippines Inventory of Chemicals and Chemical Substances)

Hydroxy terminated poly(oxylalkyated) polyol (102-60-3)
Listed on the Japanese ENCS (Existing & New Chemical Substances) inventory Listed on KECL/KECI (Korean Existing Chemicals Inventory) Listed on Taiwan National Chemical Inventory Listed on the AICS (Australian Inventory of Chemical Substances) Listed on PICCS (Philippines Inventory of Chemicals and Chemical Substances) Listed on NZIoC (New Zealand Inventory of Chemicals)

Polyoxypropylenediamine AC3 (9046-10-0)
Listed on IECSC (Inventory of Existing Chemical Substances Produced or Imported in China) Exempt from the United States Toxic Substances Control Act (TSCA) inventory. Listed on the Japanese ENCS (Existing & New Chemical Substances) inventory Listed on Taiwan National Chemical Inventory Listed on PICCS (Philippines Inventory of Chemicals and Chemical Substances) Listed on the AICS (Australian Inventory of Chemical Substances) Listed on NZIoC (New Zealand Inventory of Chemicals) Listed on KECL/KECI (Korean Existing Chemicals Inventory)

15.3. US State regulations

California Proposition 65 - This product does not contain any substances known to the state of California to cause cancer, developmental and/or reproductive harm.

Component	**State or local regulations**
4,4'Methylene bisphenyl isocyanate(101-68-8)	U.S. - Delaware - Pollutant Discharge Requirements - Reportable Quantities; U.S. - Idaho - Non-Carcinogenic Toxic Air Pollutants - Acceptable Ambient Concentrations; U.S. - Massachusetts - Right To Know List; U.S. - New Jersey - Right to Know Hazardous Substance List; U.S. - Pennsylvania - RTK (Right to Know) List

SECTION 16: Other information

according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations

Revision date : February 25, 2023

Data sources : REGULATION (EC) No 1272/2008 OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL of 16 December 2008 on classification, labelling and packaging of substances and mixtures, amending and repealing Directives 67/548/EEC and 1999/45/EC, and amending Regulation (EC) No 1907/2006. European Chemicals Agency (ECHA) C&L Inventory database. Accessed at http://echa.europa.eu/web/guest/information-on-chemicals/cl-inventory-database. Krister Forsberg and S.Z. Mansdorf, "Quick Selection Guide to Chemical Protective Clothing", Fifth Edition. National Fire Protection Association. Fire Protection Guide to Hazardous Materials; 10th edition. Manufacturer Information. United Nations Economic Commission for Europe: About the GHS. Accessed at http://www.unece.org/trans/danger/publi/ghs/ghs_welcome_e.html.

Other information : None.

Full text of H-statements:

H314	Causes severe skin burns and eye damage.
H315	Causes skin irritation.
H317	May cause an allergic skin reaction.
H318	Causes serious eye damage.

H319	Causes serious eye irritation.
H332	Harmful 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.
H412	Harmful to aquatic life with long lasting effects.

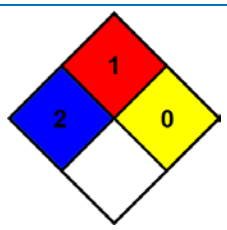
Abbreviations and acronyms:

	ATE: Acute Toxicity Estimate
	CAS (Chemical Abstracts Service) number
	CLP: Classification, Labelling, Packaging.
	EC50: Environmental Concentration associated with a response by 50% of the test population.
	GHS: Globally Harmonized System (of Classification and Labeling of Chemicals).
	European List of Waste (LoW) code
	LD50: Lethal Dose for 50% of the test population
	TWA: Time Weighted Average
	STEL: Short Term Exposure Limits
	PBT: Persistent, Bioaccumulative, Toxic
	WEL: Workplace Exposure Limit
vPvB	Very Persistent and Very Bioaccumulative

NFPA health hazard : 2 - Materials that, under emergency conditions, can cause temporary incapacitation or residual injury.

NFPA fire hazard : 1 - Materials that must be preheated before ignition can occur.

NFPA reactivity : 0 - Normally stable, even under fire exposure conditions, and not reactive with water.



Indication of changes:
Regulatory information.

This information is based on our current knowledge and is intended to describe the product for the purposes of health, safety and environmental requirements only. It should not therefore be construed as guaranteeing any specific property of the product.