Material Safety Data Sheet
Polyvinyl Butyral

Section 1 - Product Identification

Synonyms : Butvar, Polyvinyl butyral resins
Chemical Formula : $(C_8H_{14}O_2)_n$
Company Identification : Tradeasia International Pte. Limited
Address : 133 Cecil Street # 12-03 Keck Seng Tower, Singapore
Tel: +65-6227 6365
Fax: +65-6225 6286
Email: contact@chemtradeasia.com
Recommended use : Laboratory chemicals, Manufacture of substances

Section 2 – Hazards Identification

2.1 Classification
Not a hazardous substance or mixture according to Regulation (EC) No. 1272/2008

2.2 Label elements
Not a hazardous substance or mixture according to Regulation (EC) No. 1272/2008
Signal Word N.A.
Hazard Statements
N.A.
Precautionary Statements
Prevention
N.A.

2.3 Other hazards
N.A.

Section 3 – Composition/Information on Ingredients

3.1 Composition comments
Synonyms : butvar b-98
CAS-No. : 63148-65-2

Chemical Name	EC No/CAS No	Purity, %
Polyvinyl Butyral	63148-65-2	max. 99.9

Section 4 – First-Aid Measures

4.1. Description of first aid measures
If inhaled
If breathed in, move person into fresh air. If not breathing, give artificial respiration.
In case of skin contact
Wash off with soap and plenty of water.

In case of eye contact
Flush eyes with water as a precaution.
If swallowed
Never give anything by mouth to an unconscious person. Rinse mouth with water.

4.2. Most important symptoms and effects, both acute and delayed
May cause skin irritation
May cause eye irritation
Dust may cause respiratory tract irritation
Ingestion may cause nausea, vomiting, and diarrhea

4.3. Indication of any immediate medical attention and special treatment needed
Treat symptomatically.

Section 5 – Fire Fighting Measures

5.1. Suitable Extinguishing media
Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide.

5.2. Specific hazards arising from the chemical
Nature of decomposition products not known.

5.3. Special protective actions for fire-fighters
Wear self-contained breathing apparatus for firefighting if necessary.

Section 6 – Accidental Release Measures

6.1. Personal precautions, protective equipment and emergency procedures
Wear respiratory protection. Avoid dust formation. Avoid breathing vapors, mist or gas. Ensure adequate ventilation. Evacuate personnel to safe areas. Avoid breathing dust.

6.2. Environmental precautions
Should not be released into the environment. See Section 12 for additional ecological information.

6.3. Methods and material for containment and cleaning up
Sweep up and shovel. Keep in suitable, closed containers for disposal.

Section 7 – Handling and Storage

7.1. Precautions for safe Handling
Wear personal protective equipment. Ensure adequate ventilation. Avoid contact with skin, eyes and clothing. Avoid ingestion and inhalation. Avoid dust formation.

7.2. Conditions for safe storage, including any incompatibilities
Keep container tightly closed in a dry and well-ventilated place. Store in cool place.

Section 8 – Exposure Controls/Personal Protection

8.1. Appropriate engineering controls

Handle in accordance with good industrial hygiene and safety practice. Wash hands before breaks and at the end of workday.

8.2. Individual protection measures, such as personal protective equipment (PPE)
Eye/face protection
Face shield and safety glasses Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166(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 contaminated gloves after use in accordance with applicable laws and good laboratory practices. Wash and dry hands. The selected protective gloves have to satisfy the specifications of Regulation (EU) 2016/425 and the standard EN 374 derived from it.
Body Protection
Complete suit protecting against chemicals, The type of protective equipment must be selected according to the concentration and amount of the dangerous substance at the specific workplace.
Respiratory protection
Where risk assessment shows air-purifying respirators are appropriate use a fullface particle respirator type N100 (US) or type P3 (EN 143) respirator cartridges as a backup to engineering controls. If the respirator is the sole means of protection, use a full-face supplied air respirator. Use respirators and components tested and approved under appropriate government standards such as NIOSH (US) or CEN (EU).
Control of environmental exposure
Do not let product enter drains.

Section 9 – Physical and Chemical Properties

9.1. Information on basic physical and chemical properties
Physical State : Solid
Appearance : White
Odor : Characteristic
Odor Threshold : No information available
pH : No information available
Melting Point/Range : No data available
Softening Point : 140 - 200 °C / 284 - 392 °F
Boiling Point/Range : No information available
Flash Point : No information available
Evaporation Rate : Not applicable
Flammability (solid,gas) : No information available
Flammability or explosive limits :
Upper No data available
Lower No data available
Vapor Pressure : No information available
Vapor Density : Not applicable
Specific Gravity : 1.1
Solubility : insoluble
Partition coefficient; n-octanol/water : No data available
Autoignition Temperature :
Decomposition Temperature : No information available
Viscosity : Not applicable

Section 10 – Stability and Reactivity

10.1. Reactivity
N.A

10.2. Chemical stability
Stable under recommended storage conditions.

10.3. Possibility of hazardous reactions
No special considerations. Hazardous polymerisation is not possible.

10.4. Conditions to avoid:
N.A.

10.5. Incompatible materials
N.A.

10.6. Hazardous decomposition products
N.A.

Section 11 – Toxicological Information

11.1 Health effects associated with ingredients
Acute toxicity
No data available
Skin corrosion/irritation No data available
Serious eye damage/eye irritation No data available
Respiratory or skin sensitisation No data available
Germ cell mutagenicity No data available
Carcinogenicity IARC: No component of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.
Reproductive toxicity No data available
Specific target organ toxicity - single exposure No data available
Specific target organ toxicity - repeated exposure No data available
Aspiration hazard No data available
Additional Information RTECS: TR4955000

Section 12 – Ecological Information

12.1.Toxicity
N.A.

12.2. Bioaccumulative potential
N.A.

12.3. Mobility in soil
N.A.

12.4. Other adverse effects

N.A.

Section 13 – Disposal Considerations

13.1. Disposal methods
Chemical waste generators must determine whether a discarded chemical is classified as a hazardous waste. Chemical waste generators must also consult local, regional, and national hazardous waste regulations to ensure complete and accurate classification.

Section 14 – Transport Information

14.1 UN number
DOT Not regulated
TDG Not regulated
IATA Not regulated
IMDG/IMO Not regulated

Section 15 – Regulatory Information

15.1. Safety, health and environmental regulations
This material safety data sheet complies with the requirements of Regulation (EC) No. 1907/2006.

Section 16 : Additional Information

16.1. List of abbreviation and acronyms used in this MSDS
SDS : Safety Data Sheets
Index N° : atomic number of the element most characteristic of the properties of the substance
CAS No : Chemical Abstracts Service number
EC No : EINECS Number : European Inventory of Existing Commercial Substances
Repr. Cat. 2 : Substance presumed human reproductive toxicant
Acute Oral Cat. 5 : Substance which is of relatively low acute oral toxicity.
GHS : Globally Harmonised System of Classification and Labelling
LD_{50} : Median Lethal Dose
LC_{50} : Lethal Concentration, 50%
N.A. : Not Applicable
OSHA : Occupational Safety & Health Administration
Cal OSHA : The State of California Division of Occupational Safety and Health (DOSH)
PEL : Permissible Exposure Limits
ACGIH : American Conference of Governmental Industrial Hygienists
TLV : Threshold Limit Value
Japanese MITI : Japanese Ministry of International Trade and Industry
EC_{50} : Half maximal effective concentration
UN : United Nations
U.S. EPA TSCA Inventory: Inventory of the chemical substances manufactured or processed in the United States according to Toxic Substances Control Act compiled and published under the autority of the Environmental Protection Agency
Canadian DSL: Canadian Domestic Substances List

16.2. List of relevant hazard statements and precautionary statements used in this MSDS

Hazard Statement
H361 d: Suspected of damaging the unborn child
H319: Causes serious eye irritation
H303: May be harmful if swallowed
Precautionary Statements
Prevention
P201: Obtain special instructions before use.
P202: Do not handle until all safety precautions have been read and understood.
P281: Use personal protective equipment as required.
P264: Wash eyes thoroughly after handling.
P280: Wear protective gloves/ protective clothing/ eye protection/ face protection.
Response
P308 + P313: If exposed or concerned: 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.
Storage
P405: Store locked up.
Disposal
P501: Dispose of contents/container to in accordance with local regulations.

16.3. References
1. Litovitz T L, Norman S A, Veltri J C, Annual Report of the American Association of Poison Control Centers Data Collection System. Am. J. Emerg. Med. (1986), 4, 427-458
2. Denton SM (1996). Acute oral toxicity study in the rat: anhydrous boric acid. Final report. Report no.: 1341/7-1032.
3. National Toxicology Program (NTP) – Technical Report Series No. TR324, NIH Publication No. 88 2580 (1987), PB88 213475/XAB
4. Fail et al., Fund. Appl. Toxicol. (1991) 17, 225-239
5. Heindel et al., Fund. Appl. Toxicol. (1992) 18, 266-277
6. Birge W J, Black J A, EPA-560/-76-008 (April 1977) PB 267 085
7. Scialli AR, Bonde JP, Brüske-Hohlfeld I, Culver D, Li Y, Sullivan FM; ELSEVIER 2009
8. Robbins WA, Xun L, Jia J, Kennedy N, Elashoff DA, Ping L. ;ELSEVIER 2009;(Reproductive Toxicology)
9. Hansveit and Oldersma, 2000; TNO Nutrition and Food Research Institute. Report No. V99.157.
10. Gersich, FM (1984a). Environ.Toxicol.Chem., 3 #1, 89-94 (1984)
11. Soucek et al., 2010. Illinois Natural History Survey, University of Illinois.
For general information on the toxicology of borates see ECETOC Technical Report No. 63 (1995); Patty's Industrial Hygiene and Toxicology, 4th Edition Vol. II, (1994) Chap. 42, 'Boron'.

16.4. Disclaimer of Liability
The information in this MSDS was obtained from sources which we believe are reliable. However, the information is provided without any warranty, express or implied, regarding its accuracy, reliability or completeness. The conditions or methods of handling, storage use or disposal of the product are beyond our control and may be beyond our knowledge. For this and other reasons, we do not assume responsibility and expressly disclaim liability for loss, damage or expense arising out of or in any way connected with the handling, storage, use or disposal of the product. It is the user's responsibility to satisfy himself as to the suitableness and completeness of such information for his own particular use.
This MSDS was prepared and is to be used only for this product. If the product is used as a component in another product, this MSDS information may not be applicable.