

MSDS Number: **P5282** * * * * * *Effective Date: 05/14/03* * * * * * *Supersedes: 11/02/01*



From: Mallinckrodt Baker, Inc.
222 Red School Lane
Phillipsburg, NJ 08865



24 Hour Emergency Telephone: 908-859-2151
CHEMTREC: 1-800-424-9300

National Response in Canada
CANUTEC: 613-996-6666

Outside U.S. And Canada
Chemtrec: 703-527-3887

NOTE: CHEMTREC, CANUTEC and National Response Center emergency numbers to be used only in the event of chemical emergencies involving a spill, leak, fire, exposure or accident involving chemicals.

All non-emergency questions should be directed to Customer Service (1-800-582-2537) for assistance.

POLYVINYL ALCOHOL

1. Product Identification

Synonyms: Polyvinyl alcohol; PVA; Polyvinol; ethenol homopolymer

CAS No.: 9002-89-5

Molecular Weight: Not applicable to mixtures.

Chemical Formula: [-CH₂CHOH-]_n

Product Codes: U227, U228, U229, U232

2. Composition/Information on Ingredients

Ingredient	CAS No	Percent
Hazardous	-----	-----

Methyl Alcohol	67-56-1	< 1%
No		
Polyvinyl Alcohol	9002-89-5	> 95%
Yes		

3. Hazards Identification

Emergency Overview

CAUTION! MAY FORM COMBUSTIBLE DUST CONCENTRATIONS IN AIR. NUISANCE DUST.

J.T. Baker SAF-T-DATA^(tm) Ratings (Provided here for your convenience)

Health Rating: 0 - None

Flammability Rating: 2 - Moderate

Reactivity Rating: 0 - None

Contact Rating: 0 - None

Lab Protective Equip: GOGGLES; LAB COAT; CLASS B EXTINGUISHER

Storage Color Code: Red (Flammable)

Potential Health Effects

Inhalation:

Dust may be formed under certain conditions of use. Treat as a nuisance dust. When heated above 200C, fumes irritating the eyes nose, throat will be evolved. Symptoms may include tears in the eyes with itching, redness, burning pain in throat and nose.

Ingestion:

Not expected to be a health hazard via ingestion.

Skin Contact:

Not expected to be a health hazard from skin exposure.

Eye Contact:

Mechanical irritation only.

Chronic Exposure:

No human data. Animal studies showed a drop in hemoglobin and erythrocyte (red blood cell) number with eventual complete coagulation inhibition. There is the possibility of carcinogenicity as seen in some animal studies.

Aggravation of Pre-existing Conditions:

No information found.

4. First Aid Measures

Inhalation:

Remove to fresh air. Get medical attention for any breathing difficulty.

Ingestion:

Not expected to require first aid measures.

Skin Contact:

Wash exposed area with soap and water. Get medical advice if irritation develops.

Eye Contact:

Wash thoroughly with running water. Get medical advice if irritation develops.

5. Fire Fighting Measures

Fire:

Flash point: 79C (174F) OC

As with most organic solids, fire is possible at elevated temperatures or by contact with an ignition source. Minimum dust cloud ignition temperature: 450C (842F).

Explosion:

Fine dust dispersed in air in sufficient concentrations, and in the presence of an ignition source is a potential dust explosion hazard. Maximum explosion pressure: 78 lb./sq. in.

Fire Extinguishing Media:

Water spray, dry chemical, alcohol foam, or carbon dioxide.

Special Information:

In the event of a fire, wear full protective clothing and NIOSH-approved self-contained breathing apparatus with full facepiece operated in the pressure demand or other positive pressure mode.

6. Accidental Release Measures

Remove all sources of ignition. Ventilate area of leak or spill. Wear appropriate personal protective equipment as specified in Section 8. Spills: Clean up spills in a manner that does not disperse dust into the air. Use non-sparking tools and equipment. Reduce airborne dust and prevent scattering by moistening with water. Pick up spill for recovery or disposal and place in a closed container.

7. Handling and Storage

Keep in a tightly closed container, stored in a cool, dry, ventilated area. Protect against physical damage. Separate from incompatibilities. Avoid dust formation and control ignition sources. Employ grounding, venting and explosion relief provisions in accord with accepted engineering practices in any process capable of generating dust and/or static electricity. Empty only into inert or non-flammable atmosphere. Emptying contents into a non-inert atmosphere where flammable vapors may be present could cause a flash fire or explosion due to electrostatic discharge.

8. Exposure Controls/Personal Protection

Airborne Exposure Limits:

None established.

Ventilation System:

A system of local and/or general exhaust is recommended to keep employee exposures as low as possible. Local exhaust ventilation is generally preferred because it can control the emissions of the contaminant at its source, preventing dispersion of it into the general work area. Please refer to the ACGIH document, *Industrial Ventilation, A Manual of Recommended Practices*, most recent edition, for details.

Personal Respirators (NIOSH Approved):

For conditions of use where exposure to dust or mist is apparent and engineering controls are not feasible, a particulate respirator (NIOSH type N95 or better filters) may be worn. If oil particles (e.g. lubricants, cutting fluids, glycerine, etc.) are present, use a NIOSH type R or P filter. For emergencies or instances where the exposure levels are not known, use a full-face positive-pressure, air-supplied respirator. **WARNING:** Air-purifying respirators do not protect workers in oxygen-deficient atmospheres.

Skin Protection:

Wear protective gloves and clean body-covering clothing.

Eye Protection:

Use chemical safety goggles.

9. Physical and Chemical Properties

Appearance:

White free-flowing granules.

Odor:

Mild odor.

Solubility:

Moderately soluble.

Specific Gravity:

1.19 - 1.31

pH:

Aqueous solution is neutral or slightly acid.

% Volatiles by volume @ 21C (70F):

0

Boiling Point:

No information found.

Melting Point:

ca. 200C (ca. 392F)

Vapor Density (Air=1):

No information found.

Vapor Pressure (mm Hg):

No information found.

Evaporation Rate (BuAc=1):
No information found.

10. Stability and Reactivity

Stability:

Stable under ordinary conditions of use and storage.

Hazardous Decomposition Products:

Complete combustion will emit carbon dioxide and water when heated to decomposition. Incomplete combustion gives in addition carbon monoxide and oxidation products, including organic acids, aldehydes and alcohol.

Hazardous Polymerization:

Will not occur.

Incompatibilities:

Strong oxidizers.

Conditions to Avoid:

Heat, flame, ignition sources, dusting and incompatibles.

11. Toxicological Information

Oral rat LD50: > 20 gm/kg. Investigated as a tumorigen.

-----\Cancer Lists\-----

Ingredient Category	---NTP Carcinogen---		IARC
	Known	Anticipated	
Methyl Alcohol (67-56-1)	No	No	
None			
Polyvinyl Alcohol (9002-89-5)	No	No	3

12. Ecological Information

Environmental Fate:

No information found.

Environmental Toxicity:

No information found.

13. Disposal Considerations

Whatever cannot be saved for recovery or recycling should be managed in an appropriate and approved waste disposal 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. Dispose of container and unused contents in accordance with federal, state and local requirements.

14. Transport Information

Not regulated.

15. Regulatory Information

```

-----\Chemical Inventory Status - Part 1\-----
-----
Ingredient                                TSCA  EC   Japan
Australia
-----
Methyl Alcohol (67-56-1)                 Yes   Yes  Yes
Yes
Polyvinyl Alcohol (9002-89-5)           Yes   No   Yes
Yes

```

```

-----\Chemical Inventory Status - Part 2\-----
-----
Ingredient                                Korea  --Canada--
Phil.                                     DSL   NDSL
-----
Methyl Alcohol (67-56-1)                 Yes   Yes  No
Yes
Polyvinyl Alcohol (9002-89-5)           Yes   Yes  No
Yes

```

```

-----\Federal, State & International Regulations - Part 1\-----
-----
313-----
Ingredient                                -SARA 302-  -----SARA
Chemical Catg.                            RQ      TPQ      List
-----
Methyl Alcohol (67-56-1)                 No      No      Yes
No
Polyvinyl Alcohol (9002-89-5)           No      No      No
No

```

```

-----\Federal, State & International Regulations - Part 2\-----
-----

```

Ingredient	CERCLA	261.33	8(d)
Methyl Alcohol (67-56-1)	5000	U154	No
Polyvinyl Alcohol (9002-89-5)	No	No	No

Chemical Weapons Convention: No TSCA 12(b): No CDTA: No
 SARA 311/312: Acute: No Chronic: No Fire: Yes Pressure: No
 Reactivity: No (Mixture / Solid)

Australian Hazchem Code: None allocated.

Poison Schedule: None allocated.

WHMIS:

This MSDS has been prepared according to the hazard criteria of the Controlled Products Regulations (CPR) and the MSDS contains all of the information required by the CPR.

16. Other Information

NFPA Ratings: Health: 0 Flammability: 2 Reactivity: 0

Label Hazard Warning:

CAUTION! MAY FORM COMBUSTIBLE DUST CONCENTRATIONS IN AIR.
 NUISANCE DUST.

Label Precautions:

Store in a tightly closed container.
 Avoid breathing dust.
 Avoid dust cloud in presence of an ignition source.
 Maintain adequate ventilation.

Label First Aid:

Not applicable.

Product Use:

Laboratory Reagent.

Revision Information:

MSDS Section(s) changed since last revision of document include: 8.

Disclaimer:

Mallinckrodt Baker, Inc. provides the information contained herein in good faith but makes no representation as to its comprehensiveness or accuracy. This document is intended only as a guide to the appropriate precautionary handling of the material by a properly trained person using this product. Individuals receiving the information must exercise their independent judgment in determining its appropriateness for a particular purpose. MALLINCKRODT BAKER, INC. MAKES NO REPRESENTATIONS OR WARRANTIES, EITHER EXPRESS OR

IMPLIED, INCLUDING WITHOUT LIMITATION ANY WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE WITH RESPECT TO THE INFORMATION SET FORTH HEREIN OR THE PRODUCT TO WHICH THE INFORMATION REFERS. ACCORDINGLY, MALLINCKRODT BAKER, INC. WILL NOT BE RESPONSIBLE FOR DAMAGES RESULTING FROM USE OF OR RELIANCE UPON THIS INFORMATION.

Prepared by: Environmental Health & Safety
Phone Number: (314) 654-1600 (U.S.A.)