

MATERIAL SAFETY DATA SHEET

(In compliance with GHS)

SECTION 1 Chemical Product and Manufacturer's Identification

Chemical Name and Synonyms:	Polyvinyl Alcohol (PVA, PVOH, PVAL)
Trade Name:	BP28, BP26, BP24, BP20, BP20H, BP17, BP16, BP14,BP08, BP05, BP04, BP03, BP24A, BP24S, BP20S,BP20A, BP17A, BP05A, BP17G, BP05G, BP05S, BF26,BF24, BF24H, BF24E, BF17H, BF17, BF17E, BF17S,BF17W, BF14, BF14W, BF08, BF05, BF04, BF03,BC03H, BC16, BC20, BC24
Chemical Family:	polymer, synthetic resin
Chemical Formula:	[-CH ₂ CHOH-] _n [CH ₂ CHOOCCH ₃] _m
Supplier Information:	Chang Chun Petrochemical Co., Ltd 301 Songkang Road, 7 th Fl., Taipei, Taiwan, 10477 Tel: 886-2-25038131, 886-2-25001800 Fax: 886-2-25033378

SECTION 2 Hazards Identification

CAUTION! May form combustible dust concentrations in air. Nuisance dust.

This product is intended for industrial use only, not for food, feed or medical additives

Potential Health Effects

Inhalation:	Dust may be formed under certain conditions of use. Treat as a nuisance dust.
Ingestion:	Not expected to be a health hazard via ingestion.
Skin Contact:	May cause skin irritation. Not expected to be a health hazard from skin exposure.
Eye Contact:	May cause eye irritation .

SECTION 3 Composition / Information on Ingredients

Ingredient	CAS No	Percent
Polyvinyl Alcohol	25213-24-5 (partially hydrolyzed) 9002—89-5(fully hydrolyzed)	> 94%

SECTION 4. First Aid Measures

Inhalation:	Remove to fresh air. Get medical attention for any breathing difficulty.
Ingestion:	If large quantities of this material are swallowed, call a physician immediately. Do not induce vomiting unless directed to do so by a physician. Never give anything by mouth to an unconscious person. Get medical attention.
Skin Contact:	Wash exposed area with soap and water.
Eye Contact:	Wash thoroughly with running water. Get medical advice if irritation develops.

SECTION 5 Fire Fighting Measures

Flammable properties:

Flammable limits in air, % by volume: Upper: Not Applicable, Lower: Not Applicable.

Auto ignition temperature: Not Applicable. Flash point: None.

Fire: As with most organic solids, fire is possible at elevated temperatures or by contact with an ignition source. Minimum dust cloud ignition temperature: 440°C.

Explosion: Fine dust dispersed in air in sufficient concentrations, and in the presence of an ignition source is a potential dust explosion hazard. Minimum explosion concentration 35 g/m³. Maximum explosion pressure: 6.26 kg/cm².

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 face-piece operated in the pressure demand or other positive pressure mode.

SECTION 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.

SECTION 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.

SECTION 8. Exposure Controls/Personal Protection

Airborne Exposure Limits

OSHA Permissible Exposure Limit (PEL):

15 mg/m³ total dust, 5 mg/m³ respirable fraction for nuisance dusts.

ACGIH Threshold Limit Value (TLV):

10 mg/m³ total dust containing no asbestos and < 1% crystalline silica for Particulates Not Otherwise Classified (PNOC).

Ventilation System: A system of local and/or general exhaust is recommended to keep employee exposures below the Airborne Exposure Limits. Local exhaust ventilation is generally preferred.

Personal Respirators: If the exposure limit is exceeded, a half-face dust/mist respirator may be worn for up to ten times the exposure limit or the maximum use concentration specified by the appropriate regulatory agency or respirator supplier, whichever is lowest.

Eye Protection: Use chemical safety goggles.

Skin Protection: Wear protective gloves and clean body-covering clothing.

SECTION 9. Physical and Chemical Properties

Appearance:	White to ivory granule
Odor:	Odorless.
Solubility	Moderately soluble.
Specific Gravity	1.23 - 1.31
pH	5~7 (4wt% solution)
Boiling Point	Not Applicable.
Melting Point	180~230°C
Vapor Density (Air=1)	Not Applicable.
Vapor Pressure (mm Hg):	Not Applicable.
Evaporation Rate (BuAc=1)	Not Applicable.

SECTION 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 may produce 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.

SECTION 11. Toxicological Information

PVA is safe and non-toxic materials. Feeding studies indicate very low order of oral toxicity. As PVA is technical product, it is not recommended for food and medical applications that might be taken internally.

Oral rat LD50: > 5000 mg/kg; practically nontoxic to animals by ingestion.

Inhalation LC50:>20.0 mg/l (rats; dust with 3-5 micron particle size; 1 hr.exposure); practically nontoxic to animals by acute inhalation exposure.

Skin: In powder form, PVA is nonirritating to rabbit skin. In aqueous solution, slight irritation to rabbit skin was noted. Not a skin sensitizer in guinea pigs when dosed as a 10% aqueous solution. Practically nontoxic to animals (LD50, rabbits: >1,000 mg/kg).

Eye: The powder and aqueous solutions are slightly irritating to rabbit eyes; irritation subsided by 48 hrs after exposure.

Carcinogenicity: Polyvinyl Alcohol is not classifiable as to (its) carcinogenicity in humans".

Reproductive/Developmental Effects: No information available.

Repeated Exposure: A review of Polyvinyl Alcohol studies by the Cosmetic Ingredient Review Expert Panel is available in the published literature (Int. J. Toxicology, 17(Suppl. 5): 67-92 (1998)). The Panel concluded that Polyvinyl Alcohol is safe as used in cosmetic formulations.

SECTION 12. Ecological Information

Ecotoxicity: Polyvinyl alcohol exhibits low acute toxicity to aquatic species. Fish (Pimephales promelas) 96-hr. LC50: > 40,000 ppm. Fish (Lepomis macrochirus) 96-hr. LC50: >10,000 ppm. Bacteria (Photobacterium phosphoreum), Microtox Method, EC50: >50,000 ppm.

Environmental Fate/Biodegradation:

Polyvinyl alcohol (PVOH) has been reported to be substantially biodegraded in several test systems after a lag time for microbial acclimation. Almost 100% degradation of 30-day BOD with a PVOH-acclimated culture can be reached.

SECTION 13. Disposal Considerations

Whatever cannot be saved for recovery or recycling should be managed in an appropriate and approved waste disposal facility. Dispose of as a non-hazardous solid waste.

SECTION 14. Transport Information

This product is not classified as dangerous goods according to the international regulations for transport by land, inland waterway, sea and air.

SECTION 15. Regulatory Information**Chemical Inventory Status**

Country	NSA/TSCA	EC/EINECS	Japan/MITI	Australia/AICS
Status	<i>Yes</i>	<i>No*</i>	<i>Yes</i>	<i>Yes</i>
Country	New Zealand/ NZIoC	China/IECES	Philippines /PICCS	Korea/KECI
Status	<i>Yes</i>	<i>Yes</i>	<i>Yes</i>	<i>Yes</i>
Country	Canada/DSL	Canada/NDSL	Denmark/Mal Code	
Status	<i>Yes</i>	<i>No</i>	<i>No</i>	

*EINECS: Polymer exempted, monomer listed.

SECTION 16. Other Information

NFPA ratings: Health: 0, Flammability: 1, Reactivity: 0
HMIS ratings: Health: 0, Flammability: 1, Reactivity: 0
HS code: 3905.30.0000
Label hazard warning: CAUTION! MAY FORM NUISANCE DUST.

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