



MATERIAL SAFETY DATA SHEET

DAEHEUNG CHEMICAL CO., LTD. www.dhcbond.co.kr



Product Name	D-2000P
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1. Product and Company Identification

- A. Product Name D-2000P
- B. Recommended use of the chemical
- Recommended use of the chemical Bonding for polystyrene foam to concrete and wood, stile to concrete, metal etc.
 - Restrictions on use of the product Don't use except for the original purpose.
- C. Manufacturer/Supplier/Distributor Information
- Name DAEHEUNG CHEMICAL CO., LTD.
 - Address 68, Sandan-ro 64beon-gil, Pyeongtaek-si, Gyeonggi-do, Korea
 - Emergency phone number +82-31-668-1424

2. Hazards identification

- A. Hazard-Risk Classification
- Flammable liquids: category 2
 - Acute toxic(Oral): category 4
 - Skin irritation: category 2
 - Eye irritation: category 2
 - Specific target organ toxicity(single exposure): category 1

B. Label elements including precautionary statements

- Symbol



- Signal Word
- Hazard-Risk Statement

Danger

H221 Flammable gas

H302 Harmful if swallowed

H315 Causes skin irritation

H319 Causes serious eye irritation

H370 Causes damage to organs

- Precautionary Statement

Prevention

P210 Keep away from heat/sparks/open flames/hot surfaces – No smoking

P260 Do not breathe dust/fume/gas/mist/vapours/spray

P264 Wash thoroughly after handling

P270 Do not eat, drink or smoke when using this product

P280 Wear protective gloves/protective clothing/eye protection/face protection

Response

P377 If eye irritation persists

P381 Eliminate all ignition sources if safe to do so

P301+P312 IF SWALLOWED: Call a POISON CENTER or doctor/physician if you feel unwell

P302+P352 IF ON SKIN: Wash with soap and water

Response	<p>P305+P351+P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses if present and easy to do – continue rinsing</p> <p>P307+P311 IF exposed: Call a POISON CENTER or doctor/physician</p> <p>P321 Specific treatment (see 4 on this label)</p> <p>P330 Rinse mouth</p> <p>P332+313 If skin irritation occurs: Get medical advice/attention</p> <p>P337+313 If eye irritation persists get medical advice/attention</p> <p>P362 Take off contaminated clothing and wash before reuse</p>
Storage	<p>P403 Store in a well ventilated place</p> <p>P405 Store locked up</p>
Disposal	<p>P501 Dispose of contents/container to in accordance with local/regional/national/international regulation.</p>

3. Composition/Information on ingredients

Chemical Name	Other name	CAS number	Content(%)
Polyvinyl acetate	PVA, PVAc, poly(ethenyl ethanoate)	9003-20-7	45~55
Methanol	Methyl alcohol, Hydroxymethane	67-56-1	45~55
ADDITIVE	-	Trade Secrets	0.01~0.1

4. First aid measures

- A. Eye contact
Wear appropriate eye protection to prevent eye contact.
Consult a physician if irritation persists.
- B. Skin contact
Skin that becomes wet with liquid methyl alcohol should be promptly washed or showered. Eating and smoking should not be permitted in areas where liquid methyl alcohol is handled, processed, or stored.
Wear appropriate chemical protective goggles.
Most of solvent used are of dissolving natural oils of skin & causing dermatitis on hands of operators unless protective gloves & suitable barrier creams are used.
- C. Inhalation
If affected, remove individual to fresh air. Use only in well ventilated areas.
Consult a physician if irritation persists.
- D. Ingestion
Wear appropriate chemical protective gloves, boots, and goggles.
- E. Indication of immediate medical attention and notes for physician
Consult a physician if irritation persists.

5. Fire-Fighting measures

- A. Suitable (and unsuitable) extinguishing media
Do not extinguish fire unless flow can be stopped. Use water in flooding quantities as fog. Solid streams of water may be ineffective. Cool all containers with flooding quantities or water. Apply water from as far a distance as possible. Use "alcohol" foam, dry chemical or carbon dioxide.
- B. hazards arising from the chemical (e.g. nature of any hazardous combustion products)
When it is exposed to the flame of heat, there is a danger.
The fume is heavier air and moves more distance, it could backfire by ignition sources.

C. Special protective equipment and precautions for fire-fighters

Shut off fuel if possible to do without hazard

Evacuate area and fight fire from a safe distance.

To the case where the formation fire occurs from the store area, it uses the unmanned hose carrier or the other atals, it must throw away

When the tank, the freight car and the tank truck are enveloped in fire, it will have to quarantine over half-mile(approximately 800m)

Apply water from a safe distance to cool and protect surrounding area.

Firefighters should wear proper protective equipment

6. Accidental release measures

A. Personal precautions, protective equipment and emergency procedures

Use personal protective equipment.

Do not inhale the volatilized solvent directly.

In order to prevent the dangerous the approach other than the interested party.

B. Environmental precautions and protective procedures

Do not allow to enter drains or waterways.

Do not discharge into the subsoil/soil

Absorb spills with waste or dry sand or earth, then place in a chemical waste container

For large spills, prevent them from entering into sewers, watercourse or low area by mounding soil, then recover to a chemical waste container.

C. Methods and materials for containment and cleaning up

Take up with absorbent materials(sand, kieselguhr, universal binder)

Dispose of absorbed material in accordance with the regulations.

7. Handling and storage

A. Precautions for safe handling

Wear suitable chemical resistant gloves, safety goggles, dust mask and other protective clothing.

Use in the well-ventilated areas. Prevent build-up electrostatic charge(by grounding).

Shower and eye bath. Keep away from acidic material.

B. Conditions for safe storage (including any incompatibilities)

Store in its original container in a cool environment, keep away from heat, spark, and open flame. Ground containers during storage and transfer operations to avoid static spark.

Ideal storage temp. range fore ease of handling is 10 ~ 27°C

8. Exposure controls & personal protection

A. Control parameters (e.g. occupational exposure limit values, biological limit values)

- Occupational exposure limit values

Polyvinyl acetate

No data available

Methanol

TWA : 200ppm260mg/m³ STEL : 250ppm310mg/m³

- ACGIH limit values

Polyvinyl acetate

No data available

Methanol

TWA 200 ppm STEL 250 ppm

- Biological limit values

No data available

B. Appropriate engineering controls

In many processes significant quantities of solvent, monomer or plasticizer vapor may be evolved. These processes should be conducted in closed plant, or within enclosure or under hood to which exhaust ventilation is applied to remove fume before they enter air of workroom.

C. Personal protective equipment

– Respiratory protection

A respirator that is recommended or approved for use may be necessary for spray application or other situations such as high temperature use which may produce inhalation exposures.

Respirator Recommendations: Escape: Any appropriate escape-type, self-contained breathing apparatus.

– Eye protection

Wear appropriate eye protection to prevent eye contact.

– Hands protection

Wear appropriate personal protective clothing to prevent skin contact.

– Body protection

Wear appropriate personal protective clothing to prevent skin contact.

9. Physical and chemical properties

A. Appearance

Physical state

Viscous liquid

Color

Transparent pink

B. Odour

Alcoholic odor

C. Odour threshold

The air odor threshold for methanol has been reported as 100 ppm. A level of 2,000 ppm is barely detectable.

Methanol : Low threshold= 13.1150 mg/cu m; High threshold= 26840 mg/cu m; Irritating concn= 22875 mg/cu m.

D. pH

No date available

E. Melting point/freezing point

No date available

F. Initial boiling point and boiling range

63.9°C

G. Flashing point

10°C

H. Evaporation rate

No date available

I. Flammability(solid, gas)

No date available

J. Upper/lower flammability or explosive limits

36.5% / 6.0%

K. Vapor pressure

No date available

L. Solubility

INSOL IN WATER, GASOLINE, OILS & FATS

M. Vapor density

No date available

N. Relative density

0.9 (at 20°C)

O Partition coefficient:n-octanol/water

No date available

P. Auto-ignition temperature

No date available

Q. Decomposition temperature

No date available

R. Viscosity

2,400~2,600cps

S. Formula mass

No date available

10. Stability and reactivity

A. Chemical stability and possibility of hazardous reactions

Stable under normal conditions

B. Conditions to avoid

Avoid the fire, spark, flame, and other ignition sources

Store in tightly closed containers in a cool, well ventilated area away from heat.

C. Incompatible materials

flammable material

D. Hazardous decomposition products

CO, CO₂, nitrogen compounds

11. Toxicological information

A. Information on the likely routes of exposure

Methanol : NIOSH (NOES Survey 1981–1983) has statistically estimated that 1,620,617 workers (388,352 of these are female) are potentially exposed to methanol in the US(1). Occupational exposure to methanol may occur through inhalation and dermal contact with this compound at workplaces where methanol is produced or used(SRC). Monitoring data indicate that the general population may be exposed to methanol via inhalation of ambient air, ingestion of food and drinking water(SRC).

B. Health hazards information

– Acute toxic

Oral

Polyvinyl acetate

LD50 25000mg/kg–Rat (chemIDplus)

Methanol

LD50 > 1187 mg/kg–Rat Male/Female (ECHA)

Dermal

Polyvinyl acetate

No data available

Methanol

LD50 15,800mg/kg–Rabbit (HSDB)

Inhalation

Polyvinyl acetate

No data available

Methanol

Rat $\geq 0.27 \leq 13.3$ mg/L air, male, 6hr(ECHA)

– Skin corrosive/irritant

Polyvinyl acetate

Causes skin irritation by short–term exposure(KOSHA)

Methanol

NIOSH (1981) reported that 45% of "spirit" duplicating machine operators at the University of Washington experienced some symptoms(blurred vision, headache, nausea, dizziness and eye irritation), consistent with the toxic effects of methanol.(EHC(1997))

– Serious eye damage/eye irritation

Polyvinyl acetate

Causes skin irritation by short–term exposure(KOSHA)

Methanol

Methanol is an eye and skin irritant.(HSDB)

– Respiratory sensitization

No data available

– Skin sensitization

Polyvinyl acetate

No data available

Methanol

In the rabbit, methanol is a moderately irritant to the eye.(EHC(1997))

– Carcinogenicity

IARC

Polyvinyl acetate

No data are available in humans. Inadequate evidence of carcinogenicity in animals. OVERALL EVALUATION: Group 3: The agent is not classifiable as to its carcinogenicity to humans.(HSDB)

Methanol

No data available

– Germ Cell Mutagenicity

No data available

– Reproductive toxicity

No data available

– Specific target organ toxicity(single exposure)

– Specific target organ toxicity(repeated exposure)

No data available

– Aspiration hazard

No data available

12. Ecological information

A. Aquatic and terrestrial ecotoxicity

– Fish

Polyvinyl acetate

No data available

Methanol

LC50: Species: Lepomis macrochirus (Bluegill); Conditions: flow through; Concentration: 15,400 mg/L for 96 hr(HSDB)

- Shellfish		
Polyvinyl acetate		No data available
Methanol		EC50; Species: Daphnia obtusa (Water flea) age <24 hr; Conditions: static, 20+/-2 deg C, hardness 250 mg/L CaCO3, pH 7.8+/-0.2; Concentration: 22,200 mg/L for 48 hr; Effect: immobilization /from table/(HSDB)
- Birds		
Polyvinyl acetate		No data available
Methanol		No data available
B. Persistence and degradability		
- Persistence		
Polyvinyl acetate		No data available
Methanol		-0.77 log kow
- degradability		
Polyvinyl acetate		No data available
Methanol		No data available
C. Bioaccumulative potential		
- Bioaccumulative		
Polyvinyl acetate		No data available
Methanol		No data available
- Potential		
Polyvinyl acetate		No data available
Methanol		No data available
D. Mobility in soil		No data available
E. Other adverse effects		No data available

13. Disposal considerations

A. Disposal method	Generators of waste (equal to or greater than 100 kg/mo) containing this contaminant, EPA hazardous waste numbers U154 and F003, must conform with USEPA regulations in storage, transportation, treatment and disposal of waste.
B. Disposal precaution	Waste methanol must never be discharged directly into sewers or surface waters. Large quantities of waste methanol can either be disposed of at licensed waste solvent disposal company or reclaimed by filtration and distillation. It can also be incinerated.

14. Transport information

A. UN number	1133
B. UN proper shipping name	ADHESIVES containing flammable liquid
C. Transport hazard class	3
D. Packing group (if applicable)	II
E. Marine pollution (yes/no)	Yes
F. Special precaution which a user to be aware of or needs to comply with in connection with transport or conveyance either within or outside their premises	F-E, S-D

15. Regulatory information

A. Industrial Safety and Health Act	
Polyvinyl acetate	Not Applicable

Methanol	Working environment measurement target material (measurement period: 6 months)
	Managed hazardous substances
	Special medical examination the substance (diagnostic period: 12 months)
	Exposure limits set material
B. Toxic Chemical Control Act	
Polyvinyl acetate	Not Applicable
Methanol	Awareness materials
	Toxic
C. Dangerous Material Safety Control Act	
	Not Applicable
D. Wastes Management Act	
	Designated Wastes
E. Other requirements in domestic and other countries	
– Domestic	Not Applicable
– Other countries	
OSHA	
Polyvinyl acetate	Not Applicable
Methanol	Not Applicable
CERCLA	
Polyvinyl acetate	Not Applicable
Methanol	2267.995 kg 5000 lb
EPCRA 302	
Polyvinyl acetate	Not Applicable
Methanol	Not Applicable
EPCRA 304	
Polyvinyl acetate	Not Applicable
Methanol	Not Applicable
EPCRA 313	
Polyvinyl acetate	Not Applicable
Methanol	Not Applicable
Rotterdam Convention on material	
Polyvinyl acetate	Not Applicable
Methanol	Not Applicable
Stockholm Convention on material	
Polyvinyl acetate	Not Applicable
Methanol	Not Applicable
The Montreal Protocol on Substances	
Polyvinyl acetate	Not Applicable
Methanol	Not Applicable
EU classification information (Classification)	
Polyvinyl acetate	Not Applicable
Methanol	F; R11 T; R23/24/25–39/23/24/25
EU classification information (phrases)	
Polyvinyl acetate	Not Applicable
Methanol	R11, R23/24/25, R39/23/24/25
EU classification information (Safety phrases)	
Polyvinyl acetate	Not Applicable
Methanol	S1/2, S7, S16, S36/37, S45

16. Other information

A. Information source and references

HSDB, ECHA, ICSC, KOSHA(Korea Occupational Safety and Health Agency), chemIDplus

B. Issuing date November 23, 2017

C. Revision number and date -

D. others