



MATERIAL SAFETY DATA SHEET

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



Product Name	D-225
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1. Product and Company Identification

- A. Product Name D-225
- B. Recommended use of the chemical and restrictions on use
- Recommended use of the chemical Particle board or wood bonding for soft PVC film of semi rigid PVC sheet.
 - Restrictions on use of the product Do not use for purposes other than adhesive.
- 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
- Acute toxicity(inhalation:vapor) : Cstegory 4
 - Skin corrosion / Skin irritation : categories 2
 - Reproductive toxicity : Category 1B
 - Specsific Target Organ Toxicity (Repeated Exposure) : Category 2
 - Aspiration hazard : Category 1
- B. Label elements including precautionary statements
- Symbol
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- Signal Word Danger
 - Hazard-Risk Statement
- H304 - May be fatal if swallowed and enters airways.
 - H315 - Causes skin irritation.
 - H332 - Harmful if inhaled.
 - H360 - May damage fertility or the unborn child .
 - H373 - May cause damage to organs through prolonged or repeated exposure exposure cause the hazard.
- Precautionary Statement
- Prevention
- P201 - Obtain special instructions before use.
 - P202 - Do not handle until all safety precautions have been read and understood.
 - P233 - Keep container tightly closed.
 - P240 - Ground/bond container and receiving equipment.
 - P241 - Use explosion-proof electrical/ventilating/lighting/equipment.
 - P260 - Do not breathe dust/fume/gas/mist/vapours/spray.
 - P261 - Avoid breathing dust/fume/gas/mist/vapours/spray.
 - P264 - Wash thoroughly after handling.
 - P271 - Use only outdoors or in a well-ventilated area.
 - P280 - Wear protective gloves/protective clothing/eye protection/face protection.

Response	P301 + P310 – IF SWALLOWED: Immediately call a POISON CENTER or doctor/physician.
Response	<p>P302 + P352 – IF ON SKIN: Wash with plenty of soap and water.</p> <p>P303 + P361 + P353 – IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower.</p> <p>P304 + P340 – IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing.</p> <p>P308 + P313 – IF exposed or concerned: Get medical advice/attention.</p> <p>P312 – Call a POISON CENTER or doctor/physician if you feel unwell.</p> <p>P314 – Get medical advice/attention if you feel unwell.</p> <p>P321 – Specific treatment (see 4 on this label).</p> <p>P331 – Do NOT induce vomiting.</p> <p>P332 + P313 – If skin irritation occurs: Get medical advice/attention.</p> <p>P362 – Take off contaminated clothing and wash before reuse.</p> <p>P370 + P378 – In case of fire: Use dry chemical, dry sand, alcohol-resistant foam, water spray, foam, CO₂ for extinction.</p>
Storage	<p>P403 + P235 – Store in a well-ventilated place. Keep cool.</p> <p>P405 – Store locked up.</p>
Disposal	P501 – Dispose of contents/container in accordance with local, regional, national and/or international regulations.

C. Other Hazard/Risk which are not included in the classification criteria (e.g. dust explosion hazard)

Health	1
Fire	1
Reactivity	0

3. Composition/Information on ingredients

Chemical Name	Other name	CAS number	Content(%)
Toluene	Toluol	108-88-3	5~10
ETHYLENE-VINYL ACETATE COPOLYMER	EVA	24937-78-8	40~50
Calcium carbonate	CARBONIC ACID, CALCIUM SALT	471-34-1	1~5
WATER	DIHYDROGEN OXIDE	7732-18-5	35~40
ADDITIVE	-	-	0.1~8.0

4. First aid measures

A. Eye contact	<p>IF IN EYES: Wash carefully with water for several minutes. Remove contact lenses, if possible. Easy to do.</p> <p>If eye irritation persists, Consult a physician if irritation persists.</p>
B. Skin contact	<p>In case of contact with substance, immediately flush skin or eyes with running water for at least 20 minutes.</p> <p>If skin irritation occurs, obtain medical advice Keep.</p> <p>Remove and isolate contaminated clothing and shoes.</p> <p>Wash skin with soap and water.</p>
C. Inhalation	<p>Move victim to fresh air.</p> <p>Administer oxygen if breathing is difficult.</p> <p>Give artificial respiration if victim is not breathing.</p>
D. Ingestion	Call 911 or emergency medical service.
E. Indication of immediate medical attention and notes for physician	Ensure that medical personnel are aware of the material(s) involved and take precautions to protect themselves.

5. Fire-Fighting measures

A. Suitable (and unsuitable) extinguishing media

Suitable extinguishing media Small Fire: Dry chemical, dry sand, alcohol-resistant foam, water spray, foam, CO₂
Large Fire: Water spray, foam

Unsuitable extinguishing media A large amount of water

B. hazards arising from the chemical (e.g. nature of any hazardous combustion products) Fire will produce irritating, corrosive and/or toxic gases.
Vapors may form explosive mixtures with air.

C. Special protective equipment and precautions for fire-fighters Withdraw immediately in case of rising sound from venting safety devices or discoloration of tank.
Cool containers with flooding quantities of water until well after fire is out.
ALWAYS stay away from tanks engulfed in fire.

6. Accidental release measures

A. Personal precautions, protective equipment and emergency procedures Avoid breathing dust/fume/gas/mist/vapours/spray
Use water spray/stream to protect personnel and to cool endangered containers.
Remove product from area of fire.
Wear suitable protective clothing, gloves and eye/face protection.
Stop leak if safe to do so. Remove all sources of ignition.
In case of fire: Wear self-contained breathing apparatus.
Evacuate unnecessary personnel. Remove all sources of ignition. Stop leak if safe to do so. Eliminate leaks immediately.

B. Environmental precautions and protective procedures Avoid release to the environment
Waterways, sewers, basements, and Prevent entry into confined spaces.

C. Methods and materials for containment and cleaning up Stop leak if you can do it without risk.
Dike far ahead of spill; use dry sand to contain the flow of material.
Dike far ahead of spill to collect runoff water.
Collect in closed containers for disposal.
Dispose of this material and its container to hazardous or special waste collection point.
Cover powder spill with plastic sheet or tarp to minimize spreading.
With clean shovel place material into clean, dry container and cover loosely; move containers from spill area.

7. Handling and storage

A. Precautions for safe handling Do not handle until all safety precautions Read and understand all safety precautions.
Use only non-sparking tools.
Avoid breathing dust/fume/gas/mist/vapours/spray
Wash thoroughly after handling
Follow all MSDS/label precautions even after container is emptied because it may retain product residues.
Use in the well-ventilated areas. Keep out of low areas.

B. Conditions for safe storage (including any incompatibilities) Store in a well ventilated place. Keep container tightly closed

8. Exposure controls & personal protection

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

– Occupational exposure limit values

Additive	TWA – 5mg/m ³
Toluene	TWA – 50ppm STEL – 150ppm
EVA	No data available
Calcium carbonate	TWA – 10mg/m ³
Water	No data available

– ACGIH limit values

Additive	TWA – 5 mg/m ³
Toluene	TWA 20 ppm
EVA	No data available
Calcium carbonate	TWA – 10mg/m ³
Water	No data available

– Biological limit values

Additive	TWA – 5mg/m ³
Toluene	0.02 mg/L Medium: blood Time: prior to last shift of workweek Parameter: Toluene: 0.03 mg/L Medium: urine Time: end of shift Parameter: Toluene: 0.3 mg/g creatinine Medium: urine Time: end of shift Parameter: oCresol with hydrolysis (background)
EVA	No data available
Calcium carbonate	TWA – 10mg/m ³
Water	Not applicable

B. Appropriate engineering controls

Emergency eye wash fountains and safety showers should be available in the immediate vicinity of any potential exposure. Provide adequate ventilation.

C. Personal protective equipment

– Respiratory protection

The filter class must be suitable for the maximum contaminant concentration(gas/vapour/aerosol/particulates) that may arise when handling the product.

In case of fire: Wear self contained breathing apparatus.

– Eye protection

Wear eye protection/face protection.

– Hands protection

Wear proper chemical resistant gloves.

– Body protection

Wear proper Protective clothing.

9. Physical and chemical properties

A. Appearance

Physical state Viscous liquid

Color White

B. Odor

Vinegar odor

C. Odor threshold

No data available

D. pH

6~8

E. Melting point/freezing point

Not applicable.

F. Initial boiling point and boiling range

Above 100 °C

G. Flashing point

No data available

H. Evaporation rate

No data available

I. Flammability(solid, gas)

No data available

J. Upper/lower flammability or explosive limits

No data available

K. Vapor pressure

No data available

L. Solubility

Solubility in water

M. Vapor density

No data available

N. Relative density	Above 1.0
O Partition coefficient:n-octanol/water	No data available
P. Auto-ignition temperature	Above 100 °C
Q. Decomposition temperature	No data available
R. Viscosity	23,000±1,000 cps
S. Formula mass	No data available

10. Stability and reactivity

A. Chemical stability and possibility of hazardous reactions	Stable under normal conditions.
B. Conditions to avoid	Heat, spark, flame etc.
C. Incompatible materials	Water reactive substances
D. Hazardous decomposition products	Fire may produce irritating, corrosive and/or toxic gases.

11. Toxicological information

A. Information on the likely routes of exposure	Material can enter the body by inhalation, ingestion, absorption
B. Health hazards information	
– Acute toxic	
Oral	
Additive	LD50 4290 mg/kg Mouse (EU Method B.1)
Toluene	LD50 5580 mg/kg Rat (EU Method B.1)
EVA	No data available
Carcium carbonate	LD50 6450 mg/kg Rat
Water	LD50 90000 mg/kg Rat (LD50 > 90 ml/kg (Rat))
Inhalation	
Additive	Vapor LC50 ≥ 15.68 mg/l 4 hr Rat
Toluene	Vapor LC50 > 20 mg/l Rat (OECD TG 403)
EVA	No data available
Carcium carbonate	No data available
Water	No data available
Dermal	
Additive	LD50 20 Guinea pig
Toluene	LD50 > 5000 mg/kg Rabbit
EVA	No data available
Carcium carbonate	No data available
Water	No data available
– Skin corrosive/irritant	
Additive	No data available
Toluene	Skin irritation test results using rabbits result in moderate irritation
EVA	No data available
Carcium carbonate	No data available
Water	No data available
– Serious eye damage/eye irritation	
Additive	No data available
Toluene	caused mild eye irritation and the subjects recovered from the damage within 7 days in rabbit eye irritation test.
EVA	No data available
Carcium carbonate	No data available
Water	No data available

– Skin sensitization

Additive	No data available
Toluene	Negative (Guinea Pigs)
EVA	No data available
Calcium carbonate	No data available
Water	No data available

– Carcinogenicity

Ministry of Employment and Labor Notice

Additive	No data available
Toluene	No data available
EVA	No data available
Calcium carbonate	No data available
Water	No data available

IARC

Additive	No data available
Toluene	Group 3 ; Not classifiable as to carcinogenicity to humans
EVA	No data available
Calcium carbonate	No data available
Water	No data available

OSHA

Additive	No data available
Toluene	No data available
EVA	No data available
Calcium carbonate	No data available
Water	No data available

ACGIH

Additive	No data available
Toluene	A4 ; Not Classifiable as a Human Carcinogen
EVA	No data available
Calcium carbonate	No data available
Water	No data available

NTP

Additive	No data available
Toluene	R
EVA	No data available
Calcium carbonate	No data available
Water	No data available

EU CLP

Additive	No data available
Toluene	2
EVA	No data available
Calcium carbonate	No data available
Water	No data available

– Germ Cell Mutagenicity

Additive	No data available
Toluene	– Dominant lethal tests: negative – Micronucleus test: positive – Chromosome aberration test: positive

EVA	No data available
Calcium carbonate	No data available
Water	No data available
– Reproductive toxicity	
Additive	No data available
Toluene	No data available
EVA	No data available
Calcium carbonate	No data available
Water	No data available
– Specific target organ toxicity (single exposure):	
Additive	No data available
Toluene	No data available
EVA	No data available
Calcium carbonate	No data available
Water	No data available
– Specific target organ toxicity (repeated exposure)	
Additive	No data available
Toluene	No data available
EVA	No data available
Calcium carbonate	No data available
Water	No data available
– Aspiration hazard	
Additive	No data available
Toluene	No data available
EVA	No data available
Calcium carbonate	No data available
Water	No data available

12. Ecological information

A. Aquatic and terrestrial ecotoxicity

– Fish	
Additive	LD50 0.85 mg/l 96 hr <i>Lepomis macrochirus</i> (US EPA, 1975 ,GLP)
Toluene	LC50 5.5 mg/l 96 hr <i>Oncorhynchus kistutch</i>
EVA	No data available
Calcium carbonate	LC50 > 56000 mg/l 96 hr
Water	No data available
– Shellfish	
Additive	LC50 1.82 mg/l 48 hr (daphnia, REACH guidance on QSAR)
Toluene	No data available
EVA	No data available
Calcium carbonate	No data available
Water	No data available
– Bird	
Additive	EbC50 2.12 mg/l 72 hr (<i>Desmodemus subspicatus</i> , EU Method C.3, GLP)
Toluene	No data available
EVA	No data available
Calcium carbonate	No data available
Water	No data available

B. Persistence and degradability

- Persistence

Additive	log Kow 3.7 (OECD Guideline 117)
Toluene	log Kow 2.73 (20 °C)
EVA	No data available
Calcium carbonate	No data available
Water	log Kow -1.38

- Degradability

Additive	No data available
Toluene	No data available
EVA	No data available
Calcium carbonate	No data available
Water	No data available

C. Bioaccumulative potential

- Potential

Additive	BCF < 0.2 ((at 2.0mg/L))
Toluene	BCF 90
EVA	112 ug/L 2.1 hr BCF
Calcium carbonate	BCF 3.162
Water	No data available

- Biodegradable

Additive	81 % 28 day
Toluene	80 % 20 day
EVA	No data available
Calcium carbonate	No data available
Water	No data available

D. Mobility in soil

Additive	No data available
Toluene	No data available
EVA	No data available
Calcium carbonate	No data available
Water	No data available

E. Other adverse effects

Additive	No data available
Toluene	Fish :Oncorhynchus kisutch : NOEC40 d=1.39 mg/L Shellfish :Ceriodaphnia dubia : NOEC7 d=0.74 mg/L
EVA	No data available
Calcium carbonate	No data available
Water	No data available

13. Disposal considerations

A. Disposal method	Dispose of according to regulations by incineration or sanitary landfill.
B. Disposal precaution	Dispose of according to regulations by incineration or sanitary landfill.

14. Transport information

A. UN number	
Land transport(USDOT)	Not classified as a dangerous good under transport regulations
Sea transport(IMDG)	Not classified as a dangerous good under transport regulations

Air transport(IATA/ICAO)

Not classified as a dangerous good under transport regulations

B. 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:

Store at room temperature not to freeze because it is a water-based product.

15. Regulatory information

A. Industrial Safety and Health Act

B. Chemical Control Act

Not Applicable.

C. Dangerous Material Safety Control Act

Not Applicable(Not regulated as a hazardous material)

D. Wastes Management Act

Designated Wastes

E. Other requirements in domestic and other countries

– Domestic

Not Applicable.

– Other countries

OSHA

Not Applicable.

CERCLA

Not Applicable.

EPCRA 302

Not Applicable.

EPCRA 304

Not Applicable.

EU (Classification)

Not Applicable.

EU (Risk Phrases)

Not Applicable.

EU (Safety Phrases)

Not Applicable.

16. Other information

A. Information source and references

Source of data : Korea Occupational Safety and Health Agency (KOSHA)>

B. Issuing date

November 27, 2017

C. Revision number and date

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D. Others

May 31, 2022