MATERIAL SAFETY DATA SHEET

DEAHEUNG CHEMICAL CO., LTD. www.dhcbond.com

PGM

Product Name	DF-550

1. Product and Company Identification

A. Product Name: DF-550

B. Recommended use of the chemical and restrictions on use

- Recommended use of the chemical: Adhesion of floor-covering such as carpet and tile(deco tile, tex tile, sense tile, deluxe tile etc.)
- 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: Skin Corrosion/Irritation : Category 2

Target Organ Toxicity (Repeated Exposure) : Category 2

B. Label elements including precautionary statements

- Symbol

- Signal Word: Danger
- Hazard·Risk Statement: H315 Causes skin irritation

H373 May cause damage to organs through prolonged or repeated exposure

- Precautionary Statement

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

P264 Wash thoroughly after handling

P280 Wear protective gloves, protective clothing, protective goggles, and goggles.

Response: P302+P352 IF ON SKIN: Wash with plenty of soap and water.

P304+P340 IF INHALED : Remove victim to fresh air and keep at rest in a position comfortable for breathing

P314 Get Medical advice/attention if you feel unwell

P332+P313 If skin irritation occurs : Get medical advice/attention

P321 Take appropriate first aid measures.

Storage: Seal and store at room temperature.(Freezing Attention)

Disposal: P501 Dispose of contents/container to …

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

ACRYLIC ESTER COPOLYMER	
Health	No data available
Fire	No data available
Reactivity	No data available

Carbonic Calcium	
Health	2
Fire	0
Reactivity	0
Water	
Health	0
Fire	0
Reactivity	0

3. Composition/Information on ingredients

Chemical Name	Other name	CAS number	Content(%)
ACRYLIC ESTER COPOLYMER	-	30445-28-4	20~30
Carbonic Calcium	CARBONIC ACID, CALCIUM SALT	471-34-1	30~40
Water	DIHYDROGEN OXIDE	7732-18-5	25~35
ADDITIVE	-	(Trade Secrets)	5~10

4. First aid measures

A. Eye contact	IF IN EYES: Wash carefully with water for several minutes. Remove contact lenses, if possible. Easy to do.
	If eye irritation persists, Consult a physician if irritation persists.
	If skin irritation occurs, obtain medical advice Keep
B. Skin contact	Remove/Take off immediately all contaminated clothing.
	Evacuate area.
	Wash with soap and water.
C. Inhalation	Call a POISON CENTER or doctor/physician if you feel unwell.
	Excessive dust, or fumes when exposed to clean air removed by coughing or other symptoms and Seek medical attention if you have.
D. Ingestion	Do not induce vomiting. If swallowed, rinse mouth with water (only if the person is conscious).
	Seek immediate medical advice.
E. Indication of immediate medical attention and notes for physician	Medical personnel are aware of the material and to take precautions to protect.

5. Fire-Fighting measures

A. Suitable (and unsuitable) extinguishing media	Dry chemical, CO_2, sand, earth, water spray or regular foam.
B. Specific hazards arising from the chemical (e.g. nature of any hazardous combustion products)	Fire may produce irritating, corrosive and/or toxic gases.
	Containers may explode when heated.
C. Special protective equipment and precautions for fire-fighters	Wear chemical protective clothing that is specifically recommended by the manufacturer. It may provide little or no thermal protection.
	Fight fire with normal precautions from a reasonable distance.
	Dike far ahead of liquid spill for later disposal.
	Move containers from fire area if you can do it without risk.
	Fight fire from maximum distance or use unmanned hose holders or monitor nozzles.
	Cool containers with flooding quantities of water until well after fire is out.
	Withdraw immediately in case of rising sound from venting safety devices or discoloration of tank.
	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, vapors, spray.
	Wipe off any spills immediately and follow all protective precautions.
	Remove all ignition sources.
	Stop the leak if it is not dangerous.
	Do not touch a damaged container or spill without adequate protection.
	Cover with plastic sheet to prevent diffusion.
	Note the substances and conditions to avoid.
B. Environmental precautions and protective procedures	Prevent entry into waterways, sewers, basements, and confined spaces.
C. Methods and materials for containment and cleaning up	Absorb spillage with inert materials (eg dry sand or earth) and place in a chemical waste container.
	Absorb liquid and rinse contaminated area with detergent and water.

7. Handling and storage

A. Precautions for safe handling	Avoid breathing dust/fume/gas/mist/vapours/spray.
	Wash thoroughly after handling.
	Keep cool. Protect from sunlight.(Freezing Attention)
	All equipment used when handling the product must be grounded.
	Store in a well ventilated place. Keep container tightly closed
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

ACRYLIC ESTER COPOLYMER	No data available
Carbonic Calcium	TWA - 10mg/m^3
Water	No data available

- ACGIH limit values

ACRYLIC ESTER COPOLYMER	No data available
Carbonic Calcium	No data available
Water	No data available

- Biological limit values

ACRYLIC ESTER COPOLYMER	No data available
Carbonic Calcium	No data available
Water	No data available

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.
- 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	Emulsion
Color	MILK WHITE
B. Odour	little ammonia smell, effluvium
C. Odour threshold	No data available
D. pH	6~8
E. Melting point/freezing point	0℃ (similar to water)
F. Initial boiling point and boiling range	100℃ (similar to water)
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	About 23 hPa at 20℃ (similar to water)
L. Solubility	No data available
M. Vapor density	About 1 or more (air = 1)
N. Relative density	About 1.25
O Partition coefficient:n-octanol/water	No data available
P. Auto-ignition temperature	No data available
Q. Decomposition temperature	No data available
R. Viscosity	13,000~17,000 cps
S. Formula mass	More than 1 million

10. Stability and reactivity

A. Chemical stability and possibility of hazardous reactions	If dealt and stored with caution, it is safe.
	Container may explode when heated.
	May cause irritating, corrosive, toxic gases during fire.
	Inhalation of the substance may be harmful.
	Some can burn, but not easily ignite.
	Some fluids may cause dizziness, suffocation-inducing vapors.
B. Conditions to avoid (e.g. static discharge, shock or vibration, etc)	Strong Acidic, Strong Alkalic, Strong Oxidizer.
C. Incompatible materials	Water reactive material.
	Combustible materials, reducing materials.
D. Hazardous decomposition products	During burning, pyrolysis or combustion can produce irritating and highly toxic gases.

11. Toxicological information

A. Information on the likely routes of exposure

No data available

B. Health hazards information

- Acute toxic

Oral

ACRYLIC ESTER COPOLYMER	No data available
Carbonic Calcium	LD50 6450 ㎎/㎏ Rat
Water	LD50 90000 ㎎/㎏ Rat (LD50 > 90 ml/kg (Rat))

Dermal

ACRYLIC ESTER COPOLYMER	No data available
Carbonic Calcium	No data available
Water	No data available

Inhalation

ACRYLIC ESTER COPOLYMER	No data available
Carbonic Calcium	No data available
Water	No data available

- Skin corrosive/irritant

ACRYLIC ESTER COPOLYMER	No data available
Carbonic Calcium	Normal irritation of rabbit –Draize tes, irritation to person
Water	No data available

- Serious eye damage/eye irritation

ACRYLIC ESTER COPOLYMER	No data available
Carbonic Calcium	Extreme irritation of Rabbit–Draize tes, showing slight stimulation to humans
Water	No data available

- Respiratory sensitization

ACRYLIC ESTER COPOLYMER	No data available
Carbonic Calcium	No data available
Water	Not applicable

- Skin sensitization

ACRYLIC ESTER COPOLYMER	No data available
Carbonic Calcium	No data available
Water	Not applicable

- Carcinogenicity

ACRYLIC ESTER COPOLYMER	No data available
Carbonic Calcium	No data available
Water	No data available

- Germ Cell Mutagenicity

ACRYLIC ESTER COPOLYMER	No data available
Carbonic Calcium	In vitro Salmonella typhimurium Ames test Negative
Water	No data available

- Reproductive toxicity

ACRYLIC ESTER COPOLYMER	No data available
Carbonic Calcium	No data available
Water	Not applicable

- Specific target organ toxicity (single exposure)

ACRYLIC ESTER COPOLYMER	No data available
Carbonic Calcium	Causes irritation when inhaled.
Water	Not applicable

- Specific target organ toxicity (repeated exposure)

ACRYLIC ESTER COPOLYMER	No data available
Carbonic Calcium	Exposure causes blood system abnormalities, gastrointestinal disorders, and Hoechst abnormalities.
Water	Not applicable

- Aspiration hazard

ACRYLIC ESTER COPOLYMER	No data available
Carbonic Calcium	No data available
Water	Not applicable

12. Ecological information

A. Aquatic and terrestrial ecotoxicity

- Fish

ACRYLIC ESTER COPOLYMER	No data available
Carbonic Calcium	LC50 > 56000 ㎎/ℓ 96 hr
Water	No data available

- Shellfish

ACRYLIC ESTER COPOLYMER	No data available
Carbonic Calcium	No data available
Water	No data available

- Birds

ACRYLIC ESTER COPOLYMER	No data available
Carbonic Calcium	EC50 22000 ㎎/ℓ 96 hr
Water	No data available

B. Persistence and degradability

- Persistence

ACRYLIC ESTER COPOLYMER	No data available
Carbonic Calcium	No data available
Water	log Kow -1.38

- Resolvability

ACRYLIC ESTER COPOLYMER	No data available
Carbonic Calcium	No data available
Water	No data available

C. Bioaccumulative potential

- Concentration

ACRYLIC ESTER COPOLYMER	No data available
Carbonic Calcium	BCF 3.162
Water	No data available

- Bio resolvability

ACRYLIC ESTER COPOLYMER	No data available
Carbonic Calcium	No data available
Water	No data available

D. Mobility in soil

ACRYLIC ESTER COPOLYMER	No data available
Carbonic Calcium	No data available
Water	No data available

E. Other adverse effects

ACRYLIC ESTER COPOLYMER	No data available
Carbonic Calcium	No data available
Water	No data available

13. Disposal considerations

A. Disposal method	Dispose of contents and container in accordance with local regulations.
B. Disposal precaution	Dispose of contents container according to the regulations.

14. Transport information

A. UN TDG	Not dangerous goods
B. IMDG	Not dangerous goods
C. IATA	Not dangerous goods
D. Marine pollution	Not applicable

E. Special precaution	Fire EmS Guide : F-A (Recommendation) Spillage EmS Guide : Not dangerous goods

15. Regulatory information

A. Industrial Safety and Health Act	
ACRYLIC ESTER COPOLYMER	No data available
Carbonic Calcium	Exposure limits set material
Water	No data available
B. Chemical Control Act	No data available
C. Dangerous Material Safety Control Act	Not hazardous material
D. Wastes Management Act	Designated Wastes
E. Other requirements in domestic and other countries	
- Domestic regulation	
Persistent Organic Pollutant Control Act	
ACRYLIC ESTER COPOLYMER	Not applicable
Carbonic Calcium	Not applicable
Water	Not applicable
- Other countries	
USA(OSHA)	
ACRYLIC ESTER COPOLYMER	Not applicable
Carbonic Calcium	Not applicable
Water	Not applicable
USA(CERCLA)	
ACRYLIC ESTER COPOLYMER	Not applicable
Carbonic Calcium	Not applicable
Water	Not applicable
USA(EPCRA 302)	
ACRYLIC ESTER COPOLYMER	Not applicable
Carbonic Calcium	Not applicable
Water	Not applicable
USA(EPCRA 304)	
ACRYLIC ESTER COPOLYMER	Not applicable
Carbonic Calcium	Not applicable
Water	Not applicable
USA(EPCRA 313)	
ACRYLIC ESTER COPOLYMER	Not applicable
Carbonic Calcium	Not applicable
Water	Not applicable
USA (Rotterdam Convention material)	
ACRYLIC ESTER COPOLYMER	Not applicable
Carbonic Calcium	Not applicable
Water	Not applicable
USA (Stockholm Convention material)	
ACRYLIC ESTER COPOLYMER	Not applicable
Carbonic Calcium	Not applicable
Water	Not applicable
USA (Substance Montreal Protocol)	
ACRYLIC ESTER COPOLYMER	Not applicable
Carbonic Calcium	Not applicable
Water	Not applicable

EU (Classification)

ACRYLIC ESTER COPOLYMER	Not applicable
Carbonic Calcium	Not applicable
Water	Not applicable

EU (Risk Phrases)

ACRYLIC ESTER COPOLYMER	Not applicable
Carbonic Calcium	Not applicable
Water	Not applicable

EU (Safety Phrases)

ACRYLIC ESTER COPOLYMER	Not applicable
Carbonic Calcium	Not applicable
Water	Not applicable

16. Other information

A. Information source and references

ACRYLIC ESTER COPOLYMER

DAEHEUNG SPECIALTY CHEMICAL CO., LTD.

CALCIUM CARBONATE

International Uniform ChemicaL Information Database(IUCLID)(http://ecb.jrc.it/esis)(Oral)

International Uniform ChemicaL Information Database(IUCLID)(http://ecb.jrc.it/esis)(Skin corrosive/irritant)

International Uniform ChemicaL Information Database(IUCLID)(Serious eye damage/eye irritation)

National Library of Medicine/Chemical Carcinogenesis Research Information System(NLM/CCRIS)
(http://toxnet.nlm.nih.gov/cgi-bin/sis/htmlgen?CCRIS)(Germ Cell Mutagenicity)

ECOTOX(Fish)

Ecological Structure Activity Relationships(ECOSAR)(bird)

Quantitative Structure Activity Relation(QSAR)(Concentration)

Quantitative Structure Activity Relation(QSAR)(Mobility in soil)

The Chemical Database, The Department of Chemistry at the University of (http://ull.chemistry.uakron.edu/erd)

WATER

NLM

B. Issuing date	May 22, 2017
C. Revision number and date	0
D. others	