


# Material Safety Data Sheet

## (Nature's Reflections Floors 2.0T 0.15WL)

### 1. Information of the chemical product and company

1. Product Name :
2. Recommended use of the chemical and restrictions on use
  - ① Recommended use : Interior floors for commercial space
  - ② Restrictions on use : Do not employ for recommended use
3. Supplier Information
  - ① Company :
  - ② Address :
  - ③ Emergency Number :

### 2. Hazard - Risk

1. Hazard/Risk Classification
  - ① Specific target organ toxicity(Single exposure) : Section 2
  - ② Specific target organ toxicity (Repeated exposure) : Section 2
2. GHS Label Items
  - ① Pictogram 
  - ② Single : Warning
  - ③ Hazards/Risk Statement : H371 Cause damage to organs.  
H373 Causes damage to organs through prolonged or repeated exposure.
  - ④ Precautions
    - Prevention : P260 Do not breathe dust/fume/gas/mist/vapors/spray.  
P264 Wash thoroughly after handling.  
P270 Do not eat, drink or smoke when using this product.
    - Response : P309+P311 Exposed or feel uncomfortable,get a medical attention.  
P314 Get medical advice if you feel unwell.
    - Storage : P405 Store locked up.
    - Disposal : P501 Dispose of contents/container to hazardous or special waste collection point.
3. Other hazard/risk which are not included in the classification criteria.(NFPA)
  - ① Chloroethylene, polymer
    - Health : 1
    - Fire : 1
    - Reactivity : 0
  - ② CALCIUM CARBONATE, NATURAL
    - Health : 1
    - Fire : 0
    - Reactivity : 0

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- ③ 1,4-benzenedicarboxylic..
  - Health : 1
  - Fire : 1
  - Reactivity : 0
- ④ 2-methyl-2-propenyl pensan, methyl ester, a polymer of 1,3-butadiene..
  - Health : 1
  - Fire : 1
  - Reactivity : 0

### 3. Composition/Information on Ingredients Mixtures

Ingredients	Common Name	CAS Number	% by Wt
POLYVINYL CHLORIDE	Chloroethylene, polymer	9002-86-2	16 ~ 20 %
LIMESTONE	CALCIUM CARBONATE, NATURAL	1317-65-3	56 ~ 76 %
Plasticizer	1,4-BENZENEDICARB OXYLIC..	6422-86-2	6 ~ 12 %
METHACRYLIC ACID METHYL E...	2-methyl-2-propenyl pensan..	25053-09-2	≤ 1 %

### 4. First-Aid Method

1. On contact with eyes
  - ① Get emergency medical attention.
  - ② Immediately wash affected eyes for at least 20 minutes under running water.
2. On skin contact
  - ① Exposed or feel uncomfortable, get a medical attention.
  - ② Remove contaminated clothing and isolate the place.
  - ③ Immediately wash affected skin for at least 20 minutes under running water.
  - ④ If you get minor skin contact, prevent spreading contaminated area.

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### 3. When Inhale

- ① Exposed or feel uncomfortable, get a medical attention.
- ② Move to fresh air.
- ③ If stop breathing, try artificial respiration.
- ④ If breathing is difficult, provide oxygen .
- ⑤ Keep warm and stable.

### 4. When Ingest

- ① Exposed or feel uncomfortable, get a medical attention.

### 5. Other medical attention

- ① Medical personnel are aware of the material and take protective measures.

## 5. Fire-Fighting Measures

### 1. Suitable(Unsuitable) extinguishing media

- ① Suitable(Unsuitable) extinguishing media
  - Alcohol foam, Carbon dioxide, Water spray, Dry chemical
  - Dry sand

### 2. Specific hazards arising from the chemical

- ① Decompose at high temperature and can generate toxic gas.
- ② Explosion of the container risk in case of fire.
- ③ Partial combustion, not catch fire easily.
- ④ Non-flammable, but decompose by heat and generate corrosive/toxic fumes.

### 3. Special protective equipment and precaution for fire-fighters

- ① Chloroethylene, polymer
  - Wear positive pressure self-contained breathing apparatus (SCBA).
  - Structural firefighters' protective clothing will only provide limited protection.
- ② CALCIUM CARBONATE, NATURAL
  - Wear adequate personal protection to prevent contact with material or its combustion products.
  - Firefighters should use self contained NIOSH approve breathing apparatus with full face piece to protect against the products of combustion.
- ③ 1,4-BENZENEDICARBOXYLIC..
  - Full firefighting turn-out gear (bunker gear).
  - Any supplied-air respirator with full facepiece and operated in a pressure-demand or other positive-pressure mode in combination with a separate escape supply.
  - Any self-contained breathing apparatus with a full facepiece.
- ④ 2-methyl-2-propenyl pensan..
  - Wear positive pressure self-contained breathing apparatus (SCBA).
  - Wear chemical protective clothing that is specifically recommended by the manufacturer. It may provide little or no thermal protection

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### 6. Accidental release measures

#### 1. Personal precautions, protective equipment and emergency procedures

- ① Stop leak if you can do it without risk.
- ② Isolate exposed area.
- ③ Keep unauthorized personnel away.
- ④ Use certificated protective equipment.
- ⑤ Ventilate the leaked area.
- ⑥ CALL Emergency Response Telephone Number on Shipping Paper first.  
If Shipping Paper not available or no answer, refer to appropriate telephone number listed on the inside back cover.
- ⑦ Stay upwind.

#### 2. Environmental precautions and protective procedures

- ① Prevent entry into waterways, sewers, basements or confined areas.

#### 3. The methods of purification and removal

- ① ELIMINATE all ignition sources  
(no smoking, flares, sparks or flames in immediate area).
- ② All equipment used when handling the product must be grounded.
- ③ Do not touch or walk through spilled material.
- ④ Stop leak if you can do it without risk.

### 7. Handling and storage

#### 1. Precautions for safe handling

- ① Wash thoroughly after handling.
- ② Wear suitable protective clothes and face shield.
- ③ DO NOT eat, drink or smoke in product area.
- ④ Use certificated protective equipment.
- ⑤ Use general dilution ventilation and/or local exhaust ventilation to control airborne exposures.

#### 2. Conditions for safe storage

- ① Store in a closed container.
- ② Keep away from waterways and sewers.
- ③ Keep away combustible materials and ignition sources.

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### 8. Exposure controls/personal protection

#### 1. Occupational Exposure Limits

- ① Regulation in Korean: Not applicable
- ② ACGIH Regulation
  - Chloroethylene, polymer : TWA 1 mg/m<sup>3</sup>
- ③ Biological Exposure Index: Not applicable

#### 2. Appropriate engineering controls

- ① Provide local exhaust ventilation or other engineering controls to keep concentration of airborne under threshold limit value. Minimize dust generation.
- ② Provide blaster resistance equipment at ventilation system if when explosive risk.
- ③ Check legal suitability of exposure level.

#### 3. Personal protective equipment

- ① Respiratory protection
  - Chloroethylene, polymer
    - : Wear NIOSH or European Standard EN 149 approved full or half face piece (with goggles) respiratory protective equipment when necessary.
  - CALCIUM CARBONATE, NATURAL
    - : For respirable quartz levels that exceed or are likely to exceed appropriate exposure limits, a NIOSH-approved 100 series particulate filter respirator must be worn.
  - 1,4-BENZENEDICARBOXYLIC..
    - : Under conditions of frequent use or heavy exposure, respiratory protection may be needed.
  - 2-methyl-2-propenyl pensan..
    - : Wear NIOSH or European Standard EN 149 approved full or half face piece (with goggles) respiratory protective equipment.

### 9. Physical and chemical properties

#### 1. Appearance

- ① Physical state : Not available
  - ② Color : Not available
- 2. Odor : Not available
  - 3. Odor Threshold : Not available
  - 4. PH : Not available
  - 5. Melting point/freezing point : Not available
  - 6. Initial boiling point and boiling range : Not available
  - 7. Flash point : Not available
  - 8. Evaporation rate : Not available
  - 9. Flammability (solid, gas) : Not available
  - 10. Upper/lower flammability or explosive limits : Not available
  - 11. Vapour pressure : Not available
  - 12. Solubility(ies) : Not available

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- 13. vapour density : Not available
- 14. Specific gravity : Not available
- 15. n-octanol/water partition coefficient : Not available
- 16. Auto ignition temperature : Not available
- 17. Degradation temperature : Not available
- 18. Viscosity : Not available
- 19. Molecular weight : Not available

### 10. Stability and reactivity

- 1. Chemical stability and possibility of hazardous reactions
  - ① Stable under normal temperatures and pressures.
- 2. Conditions to avoid
  - ① Avoid heat, flames, sparks and other sources of ignition.
  - ② Avoid contact with incompatible materials.
- 3. Incompatible materials
  - ① Oxidizing materials
- 4. Hazardous decomposition products
  - ① Oxides of carbon
  - ② Ethyl chloride
  - ③ Phosgene
  - ④ Vinyl chloride monomer

### 11. Toxicological information

- 1. Information on the likely routes of exposure
  - ① May cause nausea, headache, dizziness, skin or eye irritation by vapor of residue monomer.
- 2. Delay by short term and long term exposures, acute and chronic effect
  - ① Acute toxicity
    - Oral : LD50 > 5000 mg/kg Rat (similar substance Rohm and Haas)
    - Dermal : Not available
    - Inhalation : Not available
  - ② Skin Corrosion/ Irritation: Not available
  - ③ Serious Eye Damage/ Irritation: Not available
  - ④ Respiratory sensitizer: Not available
  - ⑤ Skin Sensitization: Not available
  - ⑥ Carcinogenicity: Not classified
    - IARC, NTP, OSHA, ACGIH, Regulation 1272/2008, US EPA: Not listed
  - ⑦ Mutagenicity: Not available
  - ⑧ Reproductive toxicity: Not available
  - ⑨ Specific target organ toxicity (single exposure): Not available
  - ⑩ Specific target organ toxicity (repeat exposure): Not available
  - ⑪ Aspiration hazard: Not available

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### 12. Ecological information

#### 1. Aquatic Ecotoxicity

- ① Fish : Not available
- ② Crustacea: Not available
- ③ Algae : Not available

#### 2. Persistence and degradability

- ① Persistence : log Kow 8.390
- ② Degradability : Not available

#### 3. Bioaccumulative potential

: Not available

#### 4. Mobility in soil

: Not available

### 13. Disposal considerations

#### 1. Disposal method

: Landfill in landfill facilities after crushing, cutting (below 15cm diameter) or smelting, if incineration is difficult.

#### 2. Disposal precaution

: Consider the require attentions in accordance with waste treatment management regulation.

### 14. Transport information

1. UN Number : Not applicable

2. UN Proper shipping name : Not applicable

3. Transport Hazard class : Not applicable

4. Packing group : Not applicable

5. Marine pollutant : Not applicable

6. Special safety response for transportation or transportation measure

- ① Emergency schedule for fire : Not applicable
- ② Emergency schedule for spillage : Not applicable

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### 15. Regulatory information

#### 1. Korea Regulation

- ① Occupational Safety and Health Regulation: Not regulated
- ② Toxic Chemical Control Act: Not regulated
- ③ Dangerous Material Safety Management Regulation: Not regulated
- ④ Wastes Control Act: Not regulated

#### 2. Global Regulation

- ① OSHA : Not regulated
- ② CERCLA : Not regulated
- ③ EPCRA 302 : Not regulated
- ④ EPCRA 304 : Not regulated
- ⑤ EPCRA 313 : Not regulated
- ⑥ Substance of Roterdame Protocol: Not regulated
- ⑦ Substance of Stockholme Protocol: Not regulated
- ⑧ Substance of Montreal Protocol: Not regulated
- ⑨ EU classification:
  - Classification: Not applicable
  - Risk phrases: Not applicable
  - Safety phrases: Not applicable

### 16. Other information

#### 1. Information source and references

- ① Chloroethylene, polymer
  - HSDB
  - HSDB
  - HSDB
  - ICSC
  - HSDB
  - HSDB
  - National Library of Medicine/Chemical Carcinogenesis Research Information System(NLM/CCRIS)(<http://toxnet.nlm.nih.gov/cgi-bin/sis/htmlgen?CCRIS>)
  - National Library of Medicine/Hazardous Substances Data Bank(NLM/HSDB) (<http://toxnet.nlm.nih.gov/cgi-bin/sis/htmlgen?HSDB>)
  - International Chemical Safety Cards (ICSC)(<http://www.ilo.org/public/english/protection/safework/cis/products/icsc/dtasht/index.htm>)
- ② CALCIUM CARBONATE, NATURAL
- ③ 1,4-BENZENEDICARBOXYLIC..
  - The Chemical Database, The Department of Chemistry at the University of Akron(<http://ull.chemistry.uakron.edu/erd>)
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- National Library of Medicine(NLM)(<http://toxnet.nlm.nih.gov/cgi-bin/sis/htmlgen?CHEM>)
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- National Library of Medicine/Hazardous Substances Data Bank(NLM/HSDB) (<http://toxnet.nlm.nih.gov/cgi-bin/sis/htmlgen?HSDB>)
- National Library of Medicine(NLM)(<http://toxnet.nlm.nih.gov/cgi-bin/sis/htmlgen?CHEM>)
- National Library of Medicine(NLM)(<http://toxnet.nlm.nih.gov/cgi-bin/sis/htmlgen?CHEM>)
- The Chemical Database, The Department of Chemistry at the University of Akron(<http://ull.chemistry.uakron.edu/erd>)
- National Library of Medicine/Hazardous Substances Data Bank(NLM/HSDB) (<http://toxnet.nlm.nih.gov/cgi-bin/sis/htmlgen?HSDB>)
- National Library of Medicine(NLM)(<http://toxnet.nlm.nih.gov/cgi-bin/sis/htmlgen?CHEM>)
- HSDB
- The Chemical Database, The Department of Chemistry at the University of Akron(<http://ull.chemistry.uakron.edu/erd>)
- TOMES;RTECS
- National Library of Medicine(NLM)(<http://toxnet.nlm.nih.gov/cgi-bin/sis/htmlgen?CHEM>)
- National Library of Medicine/Hazardous Substances Data Bank(NLM/HSDB) (<http://toxnet.nlm.nih.gov/cgi-bin/sis/htmlgen?HSDB>)

④ 2-methyl-2-propenyl pensan..

2. Issue date : 2022-09-20

3. Revision number and date

4. Other material safety data sheet information

: This MSDS were made of the informational purposes for the safe handling when education or use of the production department workers. Therefore we make no guarantee for result obtained, and assume no responsibility for damages incurred by use of this product. But the material used for the purpose of the data requested is available for further information.