

# SAFETY DATA SHEET

Hanex®  
Solid  
Surfaces  
ELEVATE LIFE™

## Safety Data Sheet

Version 5.0

Revision Date : 03/05/2024

This document is for information only, provided voluntarily and not subsequent to regulatory requirement.

## 1. Identification of the Substance or Mixture and of the Supplier

A) GHS product identifier : HANEX(Acrylic Solid Surface Material)  
(Hanex is a registered trademark of HYUNDAI L&C Corp.)

B) Recommended use of the chemical and restrictions on use

- Recommended use : Used for processing work for interior finishing (polishing, cutting, etc.)
- Restrictions on use : Use for recommended use only

If possible, do not use this product in places where it can come into contact with chemicals such as strong acids, strong alkalis or etc.

C) Supplier

Company name : HYUNDAI L&C CORP.

Address : 37, Buganggeumho-ro, Bugang-myeon, Sejong-si, Republic of Korea

Emergency phone number : 82-44-279-8241

Respondent : 82-44-279-8322

## 2. Hazards Identification

A) GHS classification of the substance/mixture

- Physical hazards :

Not classified

- Health hazards :

Acute toxicity(Inhalation) : Category 4

Skin sensitization : Category 1

Specific target organ toxicity(Single exposure) : Category 3 (respiratory irritation)

Environmental hazards : Not classified

B) GHS label elements, including precautionary statements Pictogram and symbol :



Signal word :

Warning

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## Hazard statements :

H317 May cause an allergic skin reaction

H332 Harmful if inhaled

H335 May cause respiratory irritation

## Precautionary statements

### Precaution :

P261 Avoid breathing dust/fume/vapours/spray.

P271 Use only outdoors or in a well-ventilated area

P272 Contaminated work clothing should not be allowed out of the workplace.

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

### Treatment:

P312 Call a POISON CENTER/doctor/etc(other health care workers) if you feel unwell.

P321 Give first aid P302+P352 IF ON SKIN: Wash with plenty of water.

P304+P340 IF INHALED: Remove person to fresh air and keep comfortable for breathing.

P333+P313 If skin irritation or rash occurs: Get medical advice/attention.

P362+P364 Take off contaminated clothing and wash it before reuse.

### Storage :

P405 Store locked up.

P403+P233 Store in a well-ventilated place. Keep container tightly closed.

### Disposal :

P501 Dispose of contents/container to an approved waste disposal plant.

## C) GHS label elements, including precautionary statements :

- Operations such as sawing, routing, drilling and sanding can generate dust.

## 3. Composition/Information on Ingredients

Chemical Name	Common Name (Synonyms)	CAS Number	EC Number	Content (%)
Aluminum hydroxide	Alumium trihydrate	21645-51-2	244-492-7	52 - 65
2- Methyl-2-pro- penoic acid methl ester hompolym	methyl methac- rylate, Polymer- ized9011-14-7	9011-14-7	618-466-4	30 - 40
Additives	-	-	-	0 - 5
2-Methyl-2-prope- noic acid methly ester	Methyl methacrylate	90-62-6	201-291-1	0 - 1

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## 4. First Aid Measures

### A) Eye contact

- Call a POISON CENTER/doctor/etc if you feel unwell.
- IF exposed or concerned: Get medical advice/attention.
- In case of contact with substance, immediately flush eyes with running water for at least 20 minutes.
- Get immediate medical advice/attention.

### B) Skin contact

- For hot product, immediately immerse in or flush the affected area with large amounts of cold water to dissipate heat.
- For minor skin contact, avoid spreading material on unaffected skin.
- Call a POISON CENTER/doctor/etc if you feel unwell.
- If skin irritation occurs: Get medical advice/attention.
- Wash contaminated clothing and shoes before reuse.
- In case of contact with substance, immediately flush skin with running water for at least 20 minutes.
- IF exposed or concerned: Call a POISON CENTER/doctor.

### C) Inhalation

- If exposed to excessive levels of dusts or fumes, remove to fresh air and get medical attention if cough or other symptoms develop.
- Do not use mouth-to-mouth method if victim ingested or inhaled the substance; give artificial respiration with the aid of a pocket mask equipped with a one-way valve or other proper respiratory medical device.
- Call a POISON CENTER/doctor/etc if you feel unwell.
- Get medical advice/attention.
- IF INHALED: Remove person to fresh air and keep comfortable for breathing.
- Administer oxygen if breathing is difficult.
- Specific medical treatment is urgent.
- IF exposed or concerned: Call a POISON CENTER/doctor.

### D) Ingestion

- Do not use mouth-to-mouth method if victim ingested or inhaled the substance; give artificial respiration with the aid of a pocket mask equipped with a one-way valve or other proper respiratory medical device.
- Call a POISON CENTER/doctor/etc if you feel unwell.
- Get medical advice/attention.
- Get immediate medical advice/attention.
- Do not let him/her eat anything, if unconscious.
- Rinse mouth.

### E) Indication of immediate medical attention and notes for physician

- Effects of contact or inhalation may be delayed.
- Keep victim under observation.

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## 5. Fire Fighting Measures

### A) Suitable (and unsuitable) extinguishing media

- Suitable extinguishing media: Dry sand, dry chemical, alcohol-resistant foam, water spray, regular foam, CO2
- Unsuitable extinguishing media: High pressure water streams

### B) Specific hazards arising from the chemical

- Some of these materials may burn, but none ignite readily.
- Fire will produce irritating and/or toxic gases.
- Inhalation of material may be harmful.
- May be ignited by heat, sparks, or flames.
- Fire may produce irritating and/or toxic gases.

### C) Special protective equipment and precautions for fire-fighters

- In case of fire: Use personal protective equipment as required.
- Dike fire-control water for later disposal; do not scatter the material.
- Contact may cause burns to skin and eyes.
- Runoff from fire control or dilution water may cause pollution.
- Move products from fire area if you can do it without risk.
- Keep personnel removed and upwind of fire.

## 6. Accidental Release Measures

### A) Personal precautions, protective equipment and emergency procedures

- Avoid breathing dust/fume/vapours/spray.
- In case of fire: Use personal protective equipment as required.
- Prevent dust cloud.
- Do not touch or walk through spilled material.
- Ventilate the area.
- Please note that materials and conditions to avoid.
- Eliminate all ignition sources.
- Use personal protective equipment as required.(particularly during purification and removal operations)
- Review 5. Fire fighting measures and 7. Handling and storage sections before proceeding with clean-up.

### B) Environmental precautions and protective procedures

- Runoff from fire control or dilution water may cause pollution.
- Prevent dust entry into waterways, sewers, basements or confined areas.

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## C. The methods of purification and removal

- Reduce dust and prevent scattering by moistening with water.
- Contaminated work clothing should not be allowed out of the workplace.
- Powder Spill; Cover powder spill with plastic sheet or tarp to minimize spreading and keep powder dry.
- Small Spill; Flush area with flooding quantities of water.
- Collect spillage.

## 7. Handling and Storage

### A) Precautions for safe handling

- Avoid breathing dust/fume/vapours/spray.
- Use only outdoors or in a well-ventilated area.
- Contaminated work clothing should not be allowed out of the workplace.
- Use only outdoors or in a well-ventilated area.
- Use carefully in handling/storage.
- Follow all MSDS/label precautions even after container is emptied because they may retain product residues.
- Do not eat, drink or smoke when using this product.
- Wash the handling area thoroughly after handling.
- Do not handle until all safety precautions have been read and understood.
- Please work with reference to engineering controls and personal protective equipment.
- Please note that materials and conditions to avoid.
- Avoid release to the environment.
- Avoid chemicals such as strong acids, strong alkalis, etc. when handling the product.
- Avoid inhalation of dust and smoke generated from the fabrication process.
- Wear protective equipment when working (P3 mask, eye/ear protection, etc).
- Prevent dust and fire from occurring through wet fabrication at all times.

### B) Conditions for safe storage

- Store in a closed container.
- Store in cool and dry place.
- Keep away from food and drinking water.
- Store in a well-ventilated place.
- Avoid exposure under direct sunlight because it may be discolored and deformed.
- Store in a horizontally stacked condition on a flat surface.

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## 8. Exposure Controls/Personal Protection

### A) Occupational exposure limits

KOREA regulation :

- Aluminium hydroxide :TWA = 2 mg/m<sup>3</sup> (Aluminum - Soluble salts),  
TWA = 10 mg/m<sup>3</sup> (Aluminum - Metal dust)
- 2-Methyl-2-propenoic acid methyl ester : TWA = 50 ppm, STEL = 100ppm

ACGIH regulation :

- Aluminium hydroxide : TWA = 1 mg/m<sup>3</sup> (Aluminum insoluble compounds)
- 2 Methyl-2-propenoic acid methyl ester : TWA = 50 ppm, STEL = 100 ppm

Biological exposure index : Not available

Other regulation : Not available

### B) Appropriate engineering controls

- Provide local exhaust ventilation system or other engineering controls to keep the airborne concentrations of vapors below their respective threshold limit value.

### C) Personal protective equipment

Respiratory protection :

- Wear NIOSH or European Standard EN 149 approved full or half face piece (with goggles) respiratory protective equipment when necessary.
- In case exposed to liquid material, the respiratory protective equipments as follow are recommended. ; escape full facepiece gas mask (of use for acid gas, in case of acid gas for organic compounds) or escape half facepiece gas mask (of use for acid gas, in case of acid gas for organic compounds) or direct full facepiece gas mask (of use for acid gas, in case of acid gas for organic compounds) half facepiece gas mask (of use for acid gas, in case of acid gas for organic compounds) or powered air-purifying gas mask.
- In lack of oxygen(< 19.6%), wear the supplied-air respirator or self-contained breathing apparatus.

Eye protection :

- In case of vapour state organic material: safety goggles or breathable safety goggles
- An eye wash unit and safety shower station should be available nearby work place.

Hand protection :

- Wear appropriate protective gloves by considering physical and chemical properties of chemicals.

Body protection :

- Wear appropriate protective clothing by considering physical and chemical properties of chemicals.
- Wear safety protector during operations such as sawing, sanding, drilling or routing.

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## 9. Physical and Chemical Properties

### A. Appearance

- Description : Solid
- Color : Various

### B. Odor : odorless

### C. Odor threshold : Not available

### D. pH : Not available

### E. Melting point/freezing point : Not available

### F. Initial boiling point and boiling range : Not available

### G. Flash point : 351°C

### H. Evaporation rate : Not available

### I. Flammability (solid, gas) : Not available

### J. Upper/lower flammability or explosive limits : Not available

### K. Vapor pressure : Not available

### L. Solubility (ies) : Not available (Insoluble)

### M. Vapor density : Not available

### N. Specific gravity : 1.6~1.8

### O. Partition coefficient: n-octanol/water : Not available

### P. Auto ignition temperature : Not available

### Q. Decomposition temperature : Not available

### R. Viscosity : Not applicable

### S. Molecular weight : Not available

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## 10. Stability and Reactivity

### A) Chemical stability and possibility of hazardous reactions

- Some of these materials may burn, but none ignite readily.
- Contact with molten substance may cause severe burns to skin and eyes.
- Some liquids produce vapors that may cause dizziness or suffocation.
- Inhalation of material may be harmful.
- Fire will produce irritating and/or toxic gases.
- Stable at room temperature, normal pressure and normal use.

### B) Conditions to avoid

- Ignition sources (heat, sparks or flames)

### C) Incompatible materials

- Flammable material
- Chemicals such as strong acids, strong alkalis or etc.

### D) Hazardous decomposition products

- Irritating and/or toxic gases

## 11. Toxicological Information

### A) Information of Health Hazardous

- Operations such as sawing, routing, drilling and sanding can generate dust.

#### Acute toxicity

Oral : Not classified (ATEmix > 2,000 mg/kg)

- Aluminium hydroxide : Rat LD50(female) > 2,000 mg/kg (OECD Guideline 423, GLP)
- 2-Methyl-2-propenoic acid methyl ester : Rat LD50 = 7,900 mg/kg

Dermal : Not classified (ATEmix > 2,000 mg/kg)

- Aluminium hydroxide : Rat LD50(male) > 2,000 mg/kg (OECD Guideline 423, GLP)
- 2-Methyl-2-propenoic acid methyl ester : Rat LD50 = 7,900 mg/kg

Inhalation : Category 4 (dust/mist(aerosol)) : ATEmix = 2.046 mg/L, vapour : ATEmix > 20 mg/L)

- Aluminium hydroxide : Rat LC50(male) = 7.6 mg/L/1hr (aerosol) (Read-across) (OECD Guideline 403)
- 2-Methyl-2-propenoic acid methyl ester : Rat LC50 = 29.8 mg/L/4hr (vapour)



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Skin corrosion/ irritation : Not classified

- Aluminium hydroxide : In the skin irritation test using rabbits(male), the test material was not irritating. (OEC- Guideline 404, GLP)
- 2-Methyl-2-propenoic acid methyl ester : In the skin irritation test using rabbits, the test material was irritating. (Category 2) (0.5ml, Duration of exposure: 4 hour)

Serious eye damage/ irritation : Not classified

- Aluminium hydroxide : In the eye irritation test using rabbits, the test material was not irritating. (OECD Guideline 405, GLP)
- 2-Methyl-2-propenoic acid methyl ester : In the eye irritation test using rabbits, the test material was not irritating.

Respiratory sensitization : Not classified

- 2-Methyl-2-propenoic acid methyl ester : According to the OECD SIDS report, there is insufficient conclusive evidence that this substance is a respiratory sensitizing to humans. (RISK ASSESSMENT, DRAFT of 04.04.2001)

Skin sensitization : Category 1

- Aluminium hydroxide : In the skin sensitization test using guinea pigs(male), the test material was not skin sensitizing. (OECD Guideline 406, GLP)
- 2-Methyl-2-propenoic acid methyl ester : In the skin sensitization test using mice, the test material was skin sensitizing. (Category 1B) (OECD Guideline 429)

Carcinogenicity : Not classified

- 2-Methyl-2-propenoic acid methyl ester homopolyme :
  - IARC : Group3
  - OSHA : Present
- Aluminium hydroxide :
  - ACGIH : A4 (Aluminum insoluble compounds)
- 2-Methyl-2-propenoic acid methyl ester :
  - IARC : Group3
  - ※ NTP, EU CLP : Not listed

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Mutagenicity : Not classified

- Aluminium hydroxide : Negative reactions were observed in vivo (Mammalian Erythrocyte Micronucleus Test (OECD Guideline 474, GLP)), negative reactions were observed in vitro ((Chromosomal aberrations test (OECD Guideline 476, GLP))).
- 2-Methyl-2-propenoic acid methyl ester : Negative reactions were observed in vivo (Rodent Dominant Lethal Test (OECD Guideline 478)), ambiguous reactions were observed in vitro (Mammalian Chromosome Aberration Test (OECD Guideline 473)).

Reproductive toxicity : Not classified

- Aluminium hydroxide : In the developmental toxicity test with rats, there were no significant adverse effects. (NOAEL = 266 mg/kg bw/day) (OECD Guideline 414)
- 2-Methyl-2-propenoic acid methyl ester : In the reproductive toxicity and developmental toxicity test with rats, there were no significant adverse effects. (OECD Guideline 416, GLP)

Specific target organ toxicity (single exposure) : Category 3 (respiratory irritation)

- Aluminium hydroxide : In the acute inhalation toxicity test with rats, adverse effects were observed. (adverse effects: respiratory distress / Category 3) (Read-across) (OECD Guideline 403)
- 2-Methyl-2-propenoic acid methyl ester : In the acute inhalation toxicity test with rats, adverse effects were observed. (adverse effects: degeneration in the olfactory epithelium lining in central septum, dyspnea, and anesthesia / Category 3)

Specific target organ toxicity (repeat exposure) : Not classified

- Aluminium hydroxide : In the repeated oral toxicity test in 28 days with rats, there were no significant adverse effects. (OECD Guideline 407)
- 2-Methyl-2-propenoic acid methyl ester : In the repeated inhalation toxicity test in 104 weeks with rats, there were adverse effects. (adverse effects : inflammation of rat nasal cavity as well as olfactory epithelial degeneration at all exposure levels in rats) (NOAEC = 500 ppm/6hr/day (OECD Guideline 453, GLP))

Aspiration Hazard : Not available

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## 12. Ecological Information

### A) Ecological toxicity

Acute toxicity : Not classified

Fish :

- Aluminium hydroxide : 96hr-NOEC(*Salmo trutta*) > 0.07 mg/L (OECD Guideline 203, GLP)
- 2-Methyl-2-propenoic acid methyl ester : 96hr-LC50(*Lepomis macrochirus*) = 191 mg/ (EPA-660/375-009)

Crustacean :

- Aluminium hydroxide : 48hr-NOEC(*Daphnia magna*) > 0.005 mg/L (OECD Guideline 202, GLP)
- 2-Methyl-2-propenoic acid methyl ester : 48hr-EC50(*Daphnia magna*) = 69 mg/L (EPA OTS 797.1300, GLP)

Algae :

- 2-Methyl-2-propenoic acid methyl ester : 72hr-EC50(*Pseudokirchneriella subcapitata*) > 110 mg/L (OECD Guideline 201)

Chronic toxicity : Not classified

Fish :

- 2-Methyl-2-propenoic acid methyl ester : 34day-NOEC(*Danio rerio*) = 9.4 mg/L (OECD Guideline 210, GLP)

Crustacean :

- 2-Methyl-2-propenoic acid methyl ester : 21day-NOEC(*Daphnia magna*) = 37 mg/L (OECD Guide - line211, GLP)

Algae :

- 2-Methyl-2-propenoic acid methyl ester : 72hr-EC50(*Pseudokirchneriella subcapitata*) > 110 mg/L (OECD Guideline 201)

### B) Persistence and degradability

Persistence :

- 2-Methyl-2-propenoic acid methyl ester : Low persistency (Log Kow is less than 4 estimated.) (Log Pow = 1.38 (at 20 °C, pH ca. 7))

Degradability : Not available

### C) Bioaccumulative potential

Bioaccumulation : Not available

Biodegradation :

- 2-Methyl-2-propenoic acid methyl ester : As well-biodegraded, it is expected to have low accumulation potential in living organisms (= 94 % biodegradation was observed after 14 days) (OECD Guideline 301C)

### D) Mobility in soil :

- 2-Methyl-2-propenoic acid methyl ester : Low potency of mobility to soil. (Koc = 0.94 - 1.86) (estimated)

### E) Other hazardous effect : Not available

### F) Hazardous to the ozone layer : Not applicable

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## 13. Disposal Considerations

A) Disposal method :

- Waste must be disposed of in accordance with federal, state and local environmental control regulations.

B) Disposal precaution :

- Dispose of contents/container in accordance with relevant regulation.

## 14. Transport Information

A) UN Number : Not applicable

B) UN Proper shipping name : Not applicable

C) Transport Hazard class : Not applicable

D) Packing group : Not applicable

E) Environmental hazards : No

F) Special precautions

in case of fire : Not applicable

in case of leakage : Not applicable

## 15. Regulatory Information

Korea Regulatory information

Occupational Safety and Health Act: Not regulated

- Aluminium hydroxide : Threshold Limit Values (TLVs) chemicals(Aluminum – Soluble salts, Aluminum - Metal dust), Hazardous Substances Subject to Control, Harmful Agents Subject to Work Environment Monitoring, Harmful Agents Subject to Workers Requiring Health Examination,

Chemicals Control Act : Not regulated

Safety Control of Dangerous Substances Act : Not regulated

Wastes Control Act : Not regulated

Other regulations:

Persistent Organic Pollutants Acts : Not regulated

Foreign Regulatory Information

Substance of Rotterdam Convention : Not regulated

Substance of Stockholm Convention : Not regulated

Substance of Montreal Protocol : Not regulated

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## 16. Other Information

### A) Information source and references :

UN Recommendations on the transport of dangerous goods 17th;  
[https://www.unece.org/trans/danger/publi/unrec/rev20/20files\\_e.html](https://www.unece.org/trans/danger/publi/unrec/rev20/20files_e.html)  
EU CLP;  
<https://echa.europa.eu/information-on-chemicals/cl-inventory-database>  
REACH information on registered substances;  
<https://echa.europa.eu/information-on-chemicals/registered-substances>  
U.S. National library of Medicine (NLM) Hazardous Substances Data Bank(HSDB);  
<http://toxnet.nlm.nih.gov/cgi-bin/sis/htmlgen?HSDB>  
OECD SIDS;  
<http://webnet.oecd.org/hpv/ui/Search.aspx>  
ECOTOX;  
<http://cfpub.epa.gov/ecotox/>  
EPISUITE v4.11;  
<https://www.epa.gov/tsca-screening-tools/download-epi-suitetm-estimation-program-interface-v411>  
IARC Monographs on the Evaluation of Carcinogenic Risks to Humans;  
<http://monographs.iarc.fr>  
National Toxicology Program;  
<https://ntp.niehs.nih.gov/whatwestudy/assessments/cancer/roc/index.html>  
TOMES-LOLI®;  
<http://www.rightanswerknowledge.com/loginRA.asp>  
Korea Occupational Health & Safety Agency;  
<http://www.kosha.or.kr>  
National Chemicals Information System;  
<http://ncis.nier.go.kr/main.do>  
Ministry of Public Safety and Security-Korea dangerous material inventory management system;  
<http://hazmat.mpss.kfi.or.kr/index.do>  
Waste Control Act enforcement regulation attached [1]

### B) Issuing date : February 12, 2004

### C) Revision number and date revision number : 05 date of the latest revision : March 05, 2024

### D) Others :

- The content is based on the latest information and knowledge that we currently possess.
- The MSDS is only applicable to processors who perform work such as dust generating operations, and does not apply to purchasers and general handlers.
- This SDS was authored to processor who handles the chemical of subject in the SDS; additionally, it does not warrant suitability of the chemical for special purposes or the commercial use of statements that approves the use of it in combination with other chemicals as well as technical or legal liabilities.
- The content of the SDS may vary depending on the country or the region and may not coincide with the actual regulations. Therefore, the processor of the chemical is responsible for observing responsible government's or the region's regulations.