

Material Safety Data Sheet

1. Chemical products and company information

a. Product name

- SMG-505Y,G

b. recommended use of product and restrictions on use

- Use: non-flammable material, non-flammable adhesive
- Restriction on use: no data

c. Supplier information

- Company name : Hanmir Co., Ltd.
- Address: 190 Dodam-ro, Seo-gu, Incheon (Oryu-dong)
- Emergency number: 02-2648-0203

2. Hazard risk

a. Hazard Classification

- Corrosive to metal Category1
- Skin corrosion/irritation Category 1
- Serious eye damage/eye irritation Category 1
- Skin sensitization Category 1
- Carcinogenicity Category2
- Aspiration hazard Category2

b. Warning label items including precautionary statements

- Pictograms



- Signal word : Danger

- Hazard statements : **H290 May be corrosive to metals.**

H305 May be harmful if swallowed and enters airways

H314 Causes severe skin burns and eye damage.

H317 May cause an allergic skin reaction

H318 Causes serious eye damage.

H351 Suspected of causing cancer

- Precautionary statements

1) Prevention **P201** : Obtain instructions before use

P202 : Do not handle until all safety precautions have been read and understood

P234 : Keep only in original container.

P260 : Do not breathe dust/fume/gas/mist/vapor/spray.

P261 : Avoid breathing dust/fume/gas/mist/vapours/spray.

P264 : After handling, wash the treated area thoroughly

P272 : Do not take contaminated clothing out of the work area.

P280 : Wear protective gloves, protective clothing and safety glasses.

2)Response P301+P310 : If swallowed, seek medical attention immediately.

P301+P330+P331 : If swallowed, rinse mouth. Do not induce vomiting.

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

P303+P361 : IF ON SKIN: Take off immediately all contaminated clothing.

P304+P340 : If inhaled, remove to fresh air and keep in a position comfortable for breathing. Take it easy.

P331 : Do not induce vomiting.

P333+P313 : If skin irritation or redness occurs: Get medical advice.

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

P390 : Absorb spillage to prevent material damage.

3)Storage P404 : Store in closed container

4)Disposal : P501 : Dispose of the contents and container according to the relevant contents of the Waste Management Act.

c. Other Hazards Not Included in Hazard Classification Criteria (NFPA)

- Health : 2
- Fire : 0
- Reactivity: 0

3. Composition/information on ingredients

Substance name	Alias (idiom)	CAS number	Content (wt %)
Sodium Silicate	sodium silicate	1344-09-8	55~60
Aluminium Silicate	Aluminium Silicate	12141-46-7	20~25
Titanium Dioxide(TiO ₂)	rutile	1317-80-2	15~20
Water	Water	7732-18-5	30~35

4. First aid

a. get in the eyes

- Do not rub eyes.
- Flush eyes with plenty of water for at least 20 minutes.
- If in eyes, rinse cautiously with water for several minutes. Remove contact lenses if possible.
- Seek medical examination and treatment immediately

b. In case of skin contact

- do not rub eyes.
- Wash with plenty of soapy water for at least 20minutes to remove chemicals.

c. In case of inhalation

- Take action as necessary
- Seek medical attention immediately

d. Ingestion

- Give plenty of water to drink
- Never give anything by mouth to an unconscious person.
- If material is inhaled, do not perform mouth-to-mouth artificial respiration and use appropriate respiratory medical equipment.

- If swallowed, rinse mouth. Do not try to induce vomiting.
- Get medical attention immediately .

e. precautions for doctors

- Let medical personnel know about the substance and take protective measures.

5. Countermeasures in case of explosion and fire

a. Appropriate (and unsuitable) extinguishing media

- Water, dry chemical, CO₂, foam

In case of large fire : Water in a protected area or from a safe distance. Avoid breathing the material itself or combustion products

b. Specific hazards from chemicals

- thermal decomposition products: Sodium oxide, carbon oxides
- Fire and explosion hazards : Negligible fire hazard.

c. Protective equipment and precautions to be worn during firefighting

- Move containers from fire area if it can be done without risk
- Use an extinguishing agent adapted to the surrounding fire.

6. Countermeasures in case of leakage accident

a. Necessary measures and protective equipment to protect the human body

- Do not touch or contact with hands

b. Environmental precautions

- Prevent entry into waterways, sewers, basements and confined spaces.

c. Purification or removal method

- In case of small spill: Transfer to an appropriate container for later disposal and dispose of it. Absorb with non-combustible material.
- In case of a large spill: Isolate the exposure area and control access by persons other than those involved.

7. Handling and storage

a. Precautions for safe

- For residual substances in empty containers, use sealed containers in accordance with safe work practices.

b. Safe storage method

- Store in closed container.
- Store and use in corrosion-resistant containers.

8. Exposure control and personal protective equipment

a. Chemical exposure standards, biological exposure standards, etc. (domestic standards, ACGIH, biological exposure standards)

Substance name	domestic regulations	ACGHI regulations	Biological Exposure Criteria
Sodium Silicate	no data	TWA 1 mg/m ³	no data
Aluminium Silicate	no data	no data	no data
Titanium Dioxide (TiO ₂)	TWA - 10mg/m ³	no data	no data
Water	no data	no data	no data

b. Appropriate engineering controls

- Ensure that the work process meets the Ministry of Labor's acceptance criteria and exposure standards.

c. personal protective equipment

- Respiratory protection: Wear respiratory protective equipment certified by the Korea Occupational Safety and Health Agency
- Eye protection: Wear safety glasses or face masks to protect your eyes and face from various flying objects and harmful liquids generated during work
- Hand protection: Wear chemical resistant protective gloves to avoid direct contact with chemicals
- Body protection: Wear chemical resistant protective clothing to prevent skin exposure

9. Physical and chemical properties**a. Appearance**

- Appearance: Liquid / Color: Off-white or gray

b. Smell

- None

c. Odor Threshold

- Odor Threshold Not Applicable

d. PH

- 9-10

e. Melting point/freezing point

- 0 degrees Celsius

f. Boiling Point/Boiling Range

- 100 degrees Celsius

g. Flash point

- No data available

h. Evaporation rate

- Not applicable

i. Flammable solid

- Not applicable

j. Upper/lower limits of flammability or explosion range

- Not applicable

k. Vapor pressure

- not applicable

l. Solubility

- Well diluted in water

m. Vapor density

- no data available

o. Specific gravity

- 1.28

p. Partition coefficient n-octanol/water

- Not applicable

q. Autoignition Temperature

- Not Applicable

r. Decomposition temperature

- not applicable

s. Viscosity

- no data available

10. Stability and reactivity

a. Chemical Stability and Possibility of Hazardous Reactions

- Polymerization: Does not polymerize / Stable at room temperature and pressure

b. Conditions to avoid

- Avoid water moisture, use and storage temperature below zero

c. Substances to avoid

- strong acid, strong alkali, metals such as aluminum, lead and zinc

d. Harmful substances generated during decomposition

- No data available

11. Toxicity information

a. Information on likely routes of exposure

- No data

b. Health Hazard Information

Substance name	Oral	transdermal	inhale
Sodium silicate	LD50 3400 mg/kg Rat (MR 2.0)	no data	no data
Aluminium Silicate	no data	no data	no data
titanium dioxide (TiO ₂)	LD50 > 24000 mg/kg Rat	no data	(6820mg/ 4 hours, rat-LC50)
Water	LD50 90000 mg/kg Rat (LD50 > 90 ml/kg (Rat))	no data	no data

12. Environmental impact

a. ecotoxicity

Substance name	Pisces	shellfish	Birds
Sodium silicate	LC50 1108 mg/ℓ 96 hr Brachydanio rerio	EC50 1700 mg/ℓ 48 hr Daphnia magna	EC50 345 mg/ℓ 72 hr Scenedesmus subspicatus
Aluminium Silicate	no data	no data	no data
titanium dioxide (TiO ₂)	LC50 35.988 mg/ℓ 96 hr	LC50 39.180 mg/ℓ 48 hr	EC50 24.821 mg/ℓ 96 hr
Water	no data	no data	no data

b. Persistence and degradability

- No data available

c. Bioaccumulative

- Concentrating : It is water soluble and rapidly excreted in urine when ingested. Rats, dogs, cats and guinea pigs Based on these results, the concentration is expected to be low

d. Mobility in soil

- No data available

e. Other adverse effects

- No data available

13. Precautions for disposal

a. Disposal method

- Dispose of the contents and container according to the regulations specified in the Waste Management Act.

b. Disposal precautions

- If specified in the Waste Management Act, consider the precautions specified in the regulation.

14. Information required for transportation

a. UN No.

- No information on classification of hazardous materials for UN transport

b. Proper shipping name

- No data

c. Hazard class in transport

- It is not classified as hazardous substances such as DOT (United States Department of Transportation) and TDG (Dangerous Goods Transport), and is not limited by the standards of the International Air Transport Association.

d. container class

- No data

e. Marine pollutants

- No data

f. Special safety measures that the user needs or needs to be aware of in relation to transport or means of transport

- No data

15. Legal and regulatory status

a. Regulations under the Occupational Safety and Health Act

- Materials subject to work environment measurement (measurement cycle: 6 months)

- Materials subject to special health examination (diagnosis cycle: 12 months)

b. Regulations under the Toxic Chemical Substances Control Act

- Not applicable

c. Regulations under the Dangerous Materials Safety Management Act

- Not applicable

d. Regulations under the Waste Management Act

- Designated waste

e. Regulations under other domestic and foreign laws

- Not applicable

16. Other notes

a. source of data

- Safety and Health Agency, ECHA, OECD SIDS, OECD SIDS, HSDB, ICSC, ECOSAR

b. Initial writing date

- August 1, 2019

c. Number of revisions and date of last revision

- 4th / August 26, 2022

d. Others

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