Created 2/8/2017
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Safety Data Sheet

1 Chemical Substance and Company Information

Product

Product Name	CS-21 Builder Main agent
Product Code	B-7621:1

Manufacturer Information

Company name	Aston Inc.
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Responsible department	Engineering Department
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Recommended Application and Restrictions on Use

The liquid mixed with CS-21 Builder Auxiliary Agent works for surface protection, crack repa**ir and water stop of leakage on the concrete or mortar that contains cement component, etc.**

2 Summary of Danger and Toxicity

GHS Classification

Acute toxicity (oral)	Category 4
Skin corrosion / Irritation	Category 1
Serious damage to the eye / Eye irritation	Category 1

※Those not listed are what are out of the scope or those that cannot be classified.

Label Element


Signal words Danger

Hazard statement
- H302: Harmful if swallowed
- H314: Causes severe skin burns and eye damage

Precautions for handling

During handling, wear a protective mask, safety glasses, impermeable protective gloves, and an apron.

First-aid measures

In case of inhalation

When sprayed liquid is inhaled, rest in a clean place and consult a physician.

In case of adhesion to skin

Take off the contaminated clothes and flush the skin with water so that it will not stay for a long time. If there is inflammation, consult a physician.

In case of contact with eyes

Irrigate thoroughly with clean water and consult a physician.

In case when swallowed

Give liquid that does not cause poisoning as much as possible. Do not force the affected person to vomit. Immediately consult a physician.

Precautions for storage

Seal and store in an area inaccessible to outsiders and children.

Store indoors to prevent freezing in winter.

Always ensure the container is capped (closed) during storage. Do not store in a location that will expose the container to direct sunlight or in a location where the temperature exceeds 40 °C.

Precautions for disposal

Dispose of the waste liquid and/or containers after use in-house based on the relevant laws and regulations or have authorized contractor(s) dispose of them.

3 Composition and Ingredient Information

Single chemical / Mixture

Mixture

Common name

Sodium silicate-based surface penetrant, Reactive silicate-based surface penetrant

Alias

Two-liquid mixing type silicate-based surface penetrant, Concrete surface protection material, Concrete renovation

Constituent

Common name	Formula	Content	CAS №
Sodium silicate	$Na_2O \cdot nSiO_2$	25 - 35	1344-09-8
Others (Hydration activator, etc.)	—	Minute amount	—

4 First-aid Measures

In case of inhalation

When sprayed liquid is inhaled, rest in a clean place and consult a physician.

In case of adhesion to skin

Take off the contaminated clothes and flush the skin with water so that it will not stay for a long time.
If there is inflammation, consult a physician.

In case of contact with eyes

Irrigate thoroughly with clean water and consult a physician.

In case when swallowed

Give liquid that does not cause poisoning as much as possible. Do not force the affected person to vomit.
Immediately consult a physician.

5 Measures in Case of Fire

Fire extinguishing agent

This product does not burn in itself. Use the fire extinguishing agent suitable for the fire in the surrounding area.

Fire extinguishing method

In case of a fire in the surrounding area, promptly move the product to a safe place.
If this is not possible, sprinkle water and cool the containers to prevent destruction.
As the fire extinguish water mixed with the product is alkaline, it needs neutralization.

Protection for the fire-fighting personnel

A protective mask, safety glasses, impermeable protective gloves, and an apron must be worn.

6 Measures in Case of Leakage

Precautions for human body, protective equipment, and emergency measures

Prohibit unauthorized persons' access to the leakage site, for example by roping off the area.
When dealing with the leakage, wear a protective mask, safety glasses, impermeable protective gloves, and an apron in order to prevent direct contact.

Precautions for environment

Take precautions to prevent this discharge into rivers, sewage system, and soil.

Collection and neutralization

When the leakage is small, wipe off with cloth, etc.
When the leakage is large, take measures to avoid its spreading using soil, etc. and then collect it as much as possible.
Residues that cannot be collected must be neutralized with acid.

7 Precautions for Handling and Storage

Handling

Technical measures

When handling, wear a protective mask, safety glasses, impermeable protective gloves, and an apron to avoid direct contact with skin.

Local and general ventilation

Implement ventilation as needed.

Precautions

Follow the normal construction process when use.

Precautions for Safety handling

Measures such as curing must be taken so that this product will not adhere to the parts other than where it should be applied by curtaining or scattering.

Sanitary measures

After handling work is finished, wash hands and face and gargle.

Storage

Technical measures

Seal and store in an area inaccessible to outsiders and children.

Storage conditions

Always ensure the container is capped during storage. Do not store in a location that will expose the container to direct sunlight or in a location where the temperature exceeds 40 °C.

Below -2℃, the product may solidify. In this case, it restores to the original state by heating.

As the containers may be damaged, store indoors and prevent freezing in winter.

Reactive chemical hazard substances

Metals including aluminum, zinc, tin, and lead, and acids

Containers and Packaging materials

Polyethylene, polypropylene, stainless-steel, etc.

8 Exposure Prevention and Protection Measures

Measures for facilities

Provide water for washing hands and eyes near the handling area.

Exposure limit value

Standard control concentration: No data[1)]

Allowable concentration : No data[2)]

Protective gear

Respiratory protection	: A protective mask
Hand protection	: Impermeable protective gloves
Eye protection	: Proterctive glasses
Skin and body protection	: An apron

9 Physical and Chemical Properties

Main component	Sodium silicate
Appearance	Colorless, transparent liquid
Odor	None
pH value	11.0 - 13.0
Melting temerature	Below -2℃
Boiling temperature	Approx. 101℃
Flash point	Incombustible
Upper and lower limits of flammable or explosive range	Incombustible
Vapor pressure	No data
Vapor density	No data
Specific gravity (Density)	1.220 - 1.260 (g/cm^3)
Evaporation residue	30.0 - 33.0 wt%
Solubility	Dissolve in water at an optional rate
Octanol water partition coefficient	No data
Autoignition temperature	Incombustible
Decomposition temperature	No data
Viscosity	5.0 - 15.0 mPa･s
Kinetic viscosity	4.0 - 12.3 mm^2/s

10 Stability and Reactivity

Stability

This product is stable under the normal handling conditions. It does not decompose or burn by heating. It is not pyrophoric. It is not reactive to contact with water or air.

After two or more years from manufacturing, slight deposits may be found but there is no change in its physical property.

Reactivity

This product reacts with calcium and magnesium, forming gel.

Each of the alkaline earth metal salts reacts with sodium silicate and forms hydrate deposit.

It adheres to glass or tiles as white solid matter.

It reacts with metals such as aluminum and zinc and generates hydrogen.

Conditions to avoid

Contact with metals including aluminum, zinc, tin, and lead.

Hazardous decomposition products

It reacts with metals including aluminum, zinc, tin, and lead, and generates combustible hydrogen gas.

11 Hazard Statement

About the product

Acute toxicity	No data
Skin corrosivity and irritation to skin	No data
Serious eye damage or eye irritation	Causes acute pain when in contact with the eyes This product is determined to be Category 1 since its pH value is 11.0 - 13.0.

About sodium silicate

Acute toxicity	Oral:	Rats	LD 50	1600 mg/kg[3)]
		Mice	LD 50	1100 mg/kg[3)]
Skin corrosivity and irritation to skin	Skin:	Rabbits	250mg/24 h Severe[3)]	
	For humans, it irritates the skin and mucosa.			

12 Environmental Impact Information

Eco toxicity	No data
Perisitence / Decomposability	No data
Bioaccumulativity	No data
Mobility in soil	No data
Hazard to the ozone layer	No data

13 Precautions for Disposal

Residual wastes

Contract out the disposal to industrial waste disposal companies approved by the prefectural governors.
When the amount of waste is small, neutralize it with acid and then dilute it with a lot of water for disposal.

Contaminated containers and package

Collect empty containers and recycle them.
As for the containers that cannot be recycles, contract out the disposal of them to industrial waste disposal companies approved by the prefectural governors.

14 Precautions for Transportation

UN Number	Not classified
Product Name (UN Shipment Number)	Not classified
UN Classification	Not classified
Packing Group	Not classified
Marine contaminant	Category Y substance
Other precautions	After verifying that contents do not spill out after fastening the cap, package the item in a carton box, indicate top and bottom on the box for transport.

15 Applicable Laws

PRTR Law	Not applicable
Industrial Safety and Health Act	Not applicable
Poisonous and Deleterious Substance Control Law	Not applicable
Gunpowder Control Law	Not applicable
High Pressure Gas Safety Act	Not applicable
Fire Service Act	Not applicable
Ship Safety Law	Not applicable
CSCL Regulation	Existing chemical substance (1 – 508)
Marine Pollution Prevention Act	Hazardous waste (Category Y substance)

16 Other Information

Expiration date for use of this product

Consume within one year from shipment.

Cited Reference

1) Working Environment Standards (Ministry of Labor, Notification No. 79 in 1988)
2) Journal of Occupational Health Vol. 48 (2006)
3) NIOSH：1983 - 1983 Registry of Toxic Effects Chemical Substances

References

Chemical Risk Information Platform (CHRIP), the website of National Institute of Technology and Evaluation (nite)

Note on the entries in this document

The entries in this document are prepared based on the materials and information available at this time. However, since not all literature and information could be examined, there could be omissions. Also, this document is subject to revision due to new knowledge, testing, and so on.
The entries are intended for normal handling. In case of any special handling, implement new safety measures suitable for the specific application and use.

Contact Information for this SDS

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