SAFETY DATA SHEET

According to OSHA Hazcom Standard 29 CFR 1910.1200

S102

1. IDENTIFICATION

A. Product name

- S102

B. Recommended use and restriction on use

- General use : Refinish waterborne Base
- Restriction on use : Do not use except for purpose

C. Manufacturer / Supplier / Distributor information

○ Manufacturer information

- Company name : KCC Corporation
- Address : 100, Je4sandan-ro, Seoun-myeon, Anseong-si, Gyeonggi-do, Korea
- Emergency telephone number : 82-31-670-7777

○ Supplier/Distributer information

- Company name : KCC Corporation
- Address : 100, Je4sandan-ro, Seoun-myeon, Anseong-si, Gyeonggi-do, Korea
- Emergency telephone number : 82-31-670-7777

2. HAZARD IDENTIFICATION

A. GHS Classification

- Carcinogenicity : Category2

B. GHS label elements

○ Hazard symbols

○ Signal words

- Warning

○ Hazard statements

- H351 Suspected of causing cancer

○ Precautionary statements

1) Prevention

- P201 Obtain special instructions before use.
- P202 Do not handle until all safety precautions have been read and understood.
- P280 Wear protective gloves/protective clothing/eye protection/face protection/hearing protection.

2) Response

- P308+P313 If exposed or concerned: Get medical advice/attention.

3) Storage

- P405 Store locked up.

4) Disposal

- P501 Dispose of contents/container in accordance with local/regional/national/international regulation

C. Other hazards which do not result in classification

- Not available

3. COMPOSITION/INFORMATION ON INGREDIENTS

Chemical Name	Trade names and Synonyms	CAS No.	Content(%)
Water	Aqua; Dihydrogen oxide	7732-18-5	52 ~ 59
Titanium dioxide	Titanium oxide (Tio2) ; Titanium peroxide (Tio2) ; Dioxotitanium ; Pigment white 6	13463-67-7	7 ~ 14
2-Butoxyethanol	O-Butyl ethylene glycol ; Ethylene glycol butyl ether ; Ethylene glycol N-butyl ether ; Glycol butyl ether ; Glycol monobutyl ether ; Monobutyl glycol ether ; Butyl glycol ; Butyl oxitol ;	111-76-2	1 ~ 8
Tripropylene glycol	Tripropylene glycol ; 2-(2-(2-Hydroxypropoxy)propoxy)-1-propanol ; [(Methylethylene)bis(oxy)]dipropanol ; 2-[2-(2-hydroxypropoxy)propoxy]propan-1-ol ; Propanol, [(1-methyl-1,2-ethanediyl)bis(oxy)]bis- ; [(methylethylene)bis(oxy)]dipropanol ; [(1-Methyl-1,2-ethanediyl)bis(oxy)]bispropanol ; TRIPROPYLENE, GLYCOL ; PROPANOL, ((1-METHYL-1,2-ETHANEDIYL)BIS(OXY))BIS- ; Propanol, [(1-methyl-1,2-	24800-44-0	1 ~ 6
Aluminium hydroxide	Trihydroxyaluminum ; Aluminum oxide, Trihydrate ; Alumina hydrated ; Alumina trihydrate ; Alpha-alumina trihydrate ;	21645-51-2	1 ~ 6
Alkanes, (C=9-12)-iso-	C9-12-isoalkanes	90622-57-4	1 ~ 6
Propylene glycol	1,2-Dihydroxypropane ; 2-Dihydroxypropanol ; Alpha-beta-dioxypropan ; 1,2-Hydroxypropane ; 2-Hydroxypropanol ; Methylethylene glycol ; 1,2-Propanediol ; Propane-1,2-diol ;	57-55-6	1 ~ 6
2-Ethylhexanol	2-Ethyl-1-hexanol ; Ethylhexanol ; 2-Ethylhexyl alcohol ; Octyl alcohol ; 2-Ethylhexan-1-ol	104-76-7	0.1~1
Trimethylolpropane	Ethriol ; Trimethylolpropane ; 1,1,1-Tris(hydroxymethyl)propane ; 1,1,1-Trimethylolpropane ; 2,2-Bis(hydroxymethyl)-1-butanol ; 1,3-Propanediol, 2-ethyl-2-(hydroxymethyl) ; 2-Ethyl-2-(hydroxymethyl)-1,3-propanediol ; Tris(hydroxymethyl)propane ; Hexaglycerol ; Methanol, (propanetriyl)tris- ; Propylidynetrimethanol ;	77-99-6	0.1~1

4. FIRST AID MEASURES

A. Eye contact

- Do not rub your eyes.
- Immediately flush eyes with plenty of water for at least 15 minutes and call a doctor/physician.
- Get medical attention immediately.

B. Skin contact

- Flush skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes.
- Wash contaminated clothing thoroughly before re-using.
- Get medical attention immediately.

C. Inhalation contact

- Take specific treatment if needed.
- When exposed to large amounts of steam and mist, move to fresh air.
- Get medical attention immediately.
- If breathing is stopped or irregular, give artificial respiration and supply oxygen.

D. Ingestion contact

- Please be advised by doctor whether induction of vomit is demanded or not.
- Rinse your mouth with water immediately.
- Get medical attention immediately.

E. Delayed and immediate effects and also chronic effects from short and long term exposure

- Not available

F. Notes to physician

- Notify medical personnel of contaminated situations and have them take appropriate protective measures.
- If exposed or concerned, get medical attention/advice.

5. FIREFIGHTING MEASURES

A. Suitable (Unsuitable) extinguishing media

- Avoid use of water jet for extinguishing
- Dry chemical, carbon dioxide, regular foam extinguishing agent, spray

B. Specific hazards arising from the chemical

- Suspected of causing cancer

C. Special protective actions for firefighters

- Avoid inhalation of materials or combustion by-products.
- Cool containers with water until well after fire is out.
- Do not approach the tank surrounded by fire until it is extinguished.
- In case of conflagration, use automatic fire sprinkler. Major fire may require withdrawal, allowing the object itself to burn.
- Keep unauthorized personnel out.

6. ACCIDENTAL RELEASE MEASURES

A. Personal precautions, protective equipment and emergency procedures

- Do not touch spilled material. Stop leak if you can do it without risk.
- Handle the damaged containers or spilled material after wearing appropriate protective equipment
- Move container to safe area from the leak area.
- Must work against the wind, let the upwind people to evacuate.
- Remove all sources of ignition.

B. Environmental precautions

- If large amounts have been spilled, inform the relevant authorities.
- Prevent runoff and contact with waterways, drains or sewers.

C. Methods and materials for containment and cleaning up

- Appropriate container for disposal of spilled material collected.
- Dike for later disposal.
- Disposal of waste shall be in compliance with the Wastes Control Act

- Large spill : Stay upwind and keep out of low areas. Dike for later disposal.
- Notify the central and local government if the emission reach the standard threshold.

7. HANDLING AND STORAGE

A. Precautions for safe handling

- Avoid contact with incompatible materials.
- Avoid direct physical contact.
- Comply with all applicable laws and regulations for handling
- Dealing only with a well-ventilated place.
- Do not handle until all safety precautions have been read and understood.

B. Conditions for safe storage, including any incompatibilities

- Avoid direct sunlight.
- Check regularly for leaks.
- Do not apply any physical shock to container.
- Do not apply direct heat.
- Do not use damaged containers.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

A. Exposure limits

○ ACGIH TLV

- [Titanium dioxide] : TWA 0.2 mg/m3 (Nanoscale particles), 2.5 mg/m3 (Finescale particles) Respirable particulate mass
- [2-Butoxyethanol] : TWA, 20 ppm (97 mg/m3)
- [2-Ethylhexanol] : TWA 5 ppm

○ OSHA PEL

- [Titanium dioxide] : 15 mg/m3 (Total dust)
- [2-Butoxyethanol] : 50 ppm, 240 mg/m3

B. Engineering controls

- Business owner is recommended to maintain below recommended exposure limits for the working place with general exhaust of gas/vapour/mist/fume.

C. Individual protection measures, such as personal protective equipment

○ Respiratory protection

- Any chemical cartridge respirator with organic vapor cartridge(s).
- Any chemical cartridge respirator with a full facepiece and organic vaporcartridge(s).
- Respiratory protection is ranked in order from minimum to maximum.
- Any air-purifying respirator with a full facepiece and an organic vapor canister.
- Consider warning properties before use.
- For Unknown Concentration or Immediately Dangerous to Life or Health : 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.
- Under conditions of frequent use or heavy exposure, Respiratory protection may be needed.

○ Eye protection

- Wear primary eye protection such as splash resistant safety goggles with a secondary protection face shield.
- Provide an emergency eye wash station and quick drench shower in the immediate work area.

○ Hand protection

- Wear appropriate chemical resistant glove.

○ Skin protection

- Wear appropriate chemical resistant protective clothing.

○ Others

- Not available

9. PHYSICAL AND CHEMICAL PROPERTIES

A. Appearance	
- Appearance	Liquid
- Color	WHITE
B. Odor	Solvent odor
C. Odor threshold	Not available
D. pH	Not available
E. Melting point/Freezing point	Not available
F. Initial Boiling Point/Boiling Ranges	Not available
G. Flash point	Not available
H. Evaporation rate	Not available
I. Flammability(solid, gas)	Not available
J. Upper/Lower Flammability or explosive limits	Not available
K. Vapour pressure	Not available
L. Solubility	Not available
M. Vapour density	Not available
N. Specific gravity(Relative density)	Not available
O. Partition coefficient of n-octanol/water	Not available
P. Autoignition temperature	Not available
Q. Decomposition temperature	Not available
R. Viscosity	Not available
S. Molecular weight	Not available

10. STABILITY AND REACTIVITY

A. Chemical Stability

- This material is stable under recommended storage and handling conditions.

B. Possibility of hazardous reactions

- Hazardous Polymerization will not occur.

C. Conditions to avoid

- Avoid : Accumulation of electrostatic charges, Heating, Flames and hot surfaces
- Avoid contact with incompatible materials and condition.

D. Incompatible materials

- Sparks, flames, static electricity, strong acids and base substances

E. Hazardous decomposition products

- May emit flammable vapour if involved in fire.

11. TOXICOLOGICAL INFORMATION

A. Information on the likely routes of exposure

○ Respiratory tracts

- Not available

○ Oral

- Not available

○ Eye·Skin

- Not available

B. Delayed and immediate effects and also chronic effects from short and long term exposure

○ Acute toxicity

* Oral

- Product (ATEmix) : >5000mg/kg
- [Water] : LD50 > 90000 ㎎/㎏ Rat (LD50 > 90 ml/kg) (HSDB)
- [Titanium dioxide] : LD50 >5000 ㎎/㎏ Mouse (OECD TG 420) (OECD SIDS)
- [2-Butoxyethanol] : LD50 1414 mg/kg Guinea pig (OECD TG 401, GLP) (EU Harmonized Cat. 4) (ECHA)
- [Tripropylene glycol] : LD50 > 2000 ㎎/㎏ Rat
- [Aluminium hydroxide] : LD50 > 2000 mg/kg Rat (female) (OECD TG 423, GLP) (ECHA)
- [Alkanes, (C=9-12)-iso-] : LD50 > 5000 ㎎/㎏ Rat (ECHA)
- [Propylene glycol] : LD50 22000 mg/kg Rat (ECHA)
- [2-Ethylhexanol] : LD50 2047 mg/kg Rat (OECD TG 401) (ECHA)
- [Trimethylolpropane] : LD50 > 5000 mg/kg Rat (NIER)

* Dermal

- Product (ATEmix) : >5000mg/kg
- [2-Butoxyethanol] : LD50 > 2000 mg/kg Guinea pig (ECHA)
- [Tripropylene glycol] : LD50 > 16300 ㎎/㎏ Rabbit
- [Alkanes, (C=9-12)-iso-] : LD50 > 3160 ㎎/㎏ Rabbit (ECHA)
- [Propylene glycol] : LD50 > 2000 mg/kg Rabbit, No death (ECHA)
- [2-Ethylhexanol] : LD50 > 3000 mg/kg Rat (OECD TG 402) (ECHA)
- [Trimethylolpropane] : LD50 > 10000 mg/kg Rabbit (ECHA)

* Inhalation

- Product (ATEmix) : 20.0mg/L < ATEmix <= 50.0mg/L, Vapour, 4hr
- [Titanium dioxide] : Aerosol LC50 5.09 mg/L 4h Rat No death, Not classified (ECHA)
- [2-Butoxyethanol] : Vapor LC50 2~10 mg/L 4 hr (EU Harmonized) (ECHA)
- [Aluminium hydroxide] : Aerosol LC50 > 2.3 mg/L 4 hr Rat No death Not classified (Read-across Fumed alumina) (OECD TG 403, GLP) (ECHA)
- [Alkanes, (C=9-12)-iso-] : Steam LC50 > 5.11 ㎎/ℓ 4 hr Rat No death Not classified (ECHA)
- [Propylene glycol] : Aerosol LC50 > 158.5 mg/L 4hr (317042 mg/㎥ 2hr) Rabbit (ECHA)
- [2-Ethylhexanol] : Aerosol LC50 > 0.89 ~ <= 5.3 mg/L Rat (OECD TG 403, GLP) (ECHA)
- [Trimethylolpropane] : Aerosol LC50 > 0.85 ㎎/L 4 hr Rat No death Not classified (NIER,ECHA)

○ Skin corrosion/irritation

- Not available

○ Serious eye damage/irritation

- Not available

○ Respiratory sensitization

- Not available

○ Skin sensitization

- Not available

○ Carcinogenicity

* IARC

- [Titanium dioxide] : Group 2B

※ IARC (International Agency for Research on Cancer) has classified TiO2 as a substance which may be possibly carcinogenic to humans. However, studies on TiO2 conducted by the IARC state that when TiO2 is mixed in substance such as paints and coatings, the level of exposure is not severe. An increase in cancer was found only when ultrafine TiO2 particles of less than 100nm were used in a Study on Long-term Inhalation of TiO2 by Animals, issued by the National Institute for Occupational Safety & Health (NIOSH). Therefore, it is difficult to conclude that this product, which contains TiO2 with a particle size of 280~360nm, can be carcinogenic enough to cause cancer.

- [2-Butoxyethanol] : Group 3

* OSHA

- Not available

* ACGIH

- [Titanium dioxide] : A3
- [2-Butoxyethanol] : A3
- [2-Ethylhexanol] : A3

* NTP

- Not available

* EU CLP

- [Titanium dioxide] : Carc. 2

○ Germ cell mutagenicity

- Not available

○ Reproductive toxicity

- Not available

○ STOT-single exposure

- Not available

○ STOT-repeated exposure

- Not available

○ Aspiration hazard

- Not available

12. ECOLOGICAL INFORMATION

A. Ecotoxicity

○ Fish

- [Titanium dioxide] : LC50 >100 ㎎/L 96 hr Carassius auratus, Oncorhynchus mykiss (ECHA)
- [2-Butoxyethanol] : LC50 1474 ㎎/ℓ 96 hr Oncorhynchus mykiss (OECD TG 203), NOEC > 100 mg/L 21 d Danio rerio (OECD TG 204) (ECHA)
- [Tripropylene glycol] : LC50 1000 ㎎/ℓ 96 hr Oryzias latipes (SIDS)
- [Aluminium hydroxide] : LC50 > 218.64 mg/L 96hr Pimephales promelas (Read-across CAS no. 7446-70-0) (GLP), NOEC 1.5615 mg/L 7d Pimephales promelas (Read-across CAS no. 7784-27-2) (GLP) (ECHA)
- [Alkanes, (C=9-12)-iso-] : LC50 2600 ㎎/ℓ 96 hr Pimephales promelas (OECD 203) (ESIS)
- [Propylene glycol] : LC50 40613 mg/L 96hr Oncorhynchus mykiss, NOEC 11530 mg/L 7d Pimephales promelas (EPA 600/4-89/001) (ECHA)
- [2-Ethylhexanol] : LC50 17.1 mg/L 96 hr Leuciscus idus melanotus (EU Method C.1, GLP), LC10 0.278 mg/L 30d Danio rerio (OECD TG 210, GLP) (ECHA)
- [Trimethylolpropane] : LC50 > 1000 ㎎/ℓ 96 hr Alburnus alburnus (ECHA)

○ Crustaceans

- [Titanium dioxide] : EC50 >100 ㎎/L 48 hr Daphnia magna, OECD TG 202 (ECHA)
- [2-Butoxyethanol] : EC50 ca. 1800 ㎎/ℓ 48 hr Daphnia magna (OECD TG 202), NOEC 100 mg/L 21 d Daphnia magna (OECD TG 211) (ECHA)
- [Tripropylene glycol] : EC50 1000 ㎎/ℓ 24 hr Daphnia magna (SIDS)
- [Aluminium hydroxide] : LC50 > 99.6 mg/L 48hr Ceriodaphnia dubia (Read-across CAS no. 7446-70-0) (GLP), NOEC 4.2818 mg/L 10d Chironomus riparius (Read-across CAS no. 7784-27-2) (GLP) (ECHA)
- [Propylene glycol] : LC50 18340 mg/L 48hr Ceriodaphnia dubia (EPA 600/4-90/0-27), NOEC 13020 mg/L 7d Ceriodaphnia sp. (EPA 600/4-89/001) (ECHA)
- [2-Ethylhexanol] : EC50 39 mg/L 48 hr Daphnia magna (EU Method C.2, GLP), EC10 1.53 mg/L 21d Daphnia magna (OECD TG 211, GLP) (ECHA)
- [Trimethylolpropane] : LC50 13000 ㎎/ℓ 48 hr Daphnia magna (ECHA), NOEC > 1000 mg/L 21day Daphnia magna (NIER)

○ Algae

- [Titanium dioxide] : ErL50 > 100 ㎎/ℓ 72 hr Pseudokirchneriella subcapitata, growth rate, static, (72h-EyL50 >100 mg/L static, OECD TG 201) (ECHA)

- [2-Butoxyethanol] : EC50 911 ㎎/ℓ 72 hr, NOEC 88 mg/L 72 hr Selenastrum capricornutum (OECD TG 201) (ECHA)

- [Tripropylene glycol] : ErC50 1000 ㎎/ℓ 72 hr Selenastrum capricornutum (SIDS)

- [Aluminium hydroxide] : EC50 1.799 mg/L 72hr Raphidocelis subcapitata (Read-across CAS no. 1302-42-7) (OECD TG 201), NOEC > 0.052 mg/L 72hr Raphidocelis subcapitata (Read-across CAS no. 1344-28-1) (OECD TG 201, GLP) (ECHA)

- [Propylene glycol] : EC50 24200 mg/L 72hr, NOEC 15000 mg/L 14d Raphidocelis subcapitata (OECD TG 201, GLP) (ECHA)

- [2-Ethylhexanol] : EC50 21 mg/L, EC10 7.41 mg/L 72hr Desmodesmus subspicatus (EU Method C.3, GLP) (ECHA)

- [Trimethylolpropane] : EC50 > 1000 ㎎/ℓ 72 hr Raphidocelis subcapitata (ECHA)

B. Persistence and degradability

○ Persistence

- [Water] : log Kow -1.38 (HSDB)

- [2-Butoxyethanol] : log Kow 0.81 (25°C, pH 7, BASF standard method) (ECHA)

- [Tripropylene glycol] : log Kow = -0.50 (Estimate)

- [Propylene glycol] : log Pow -1.07 (20.5℃, pH 6.2 ~ 6.4) (EU Method A.8, GLP) (ECHA)

- [2-Ethylhexanol] : log Pow 2.9 (25 °C, pH 7) (ECHA)

- [Trimethylolpropane] : log Kow -0.47 (26 ℃) (ECHA)

○ Degradability

- Not available

C. Bioaccumulative potential

○ Bioaccumulative potential

- [Alkanes, (C=9-12)-iso-] : BCF 3152 ~ 100000 (ESIS)

- [2-Ethylhexanol] : BCF 13 (HSDB)

- [Trimethylolpropane] : BCF <10 (OECD TG 305C, GLP)(ECHA)

○ Biodegradation

- [2-Butoxyethanol] : Readily biodegradable, 90.4 % 28 d (CO_2 evolution) (OECD TG 301 B) (ECHA)

- [Alkanes, (C=9-12)-iso-] : 21.9 (%) 28 day (OECD 301 F) (ESIS)

- [Propylene glycol] : Ready biodegradable, 81.7 % degradation (CO_2 evolution) 28 day (OECD TG 301F, GLP) (ECHA)

- [2-Ethylhexanol] : Readily biodegradable (ECHA)

- [Trimethylolpropane] : Not readily biodegradable (NIER)

D. Mobility in soil

- [Trimethylolpropane] : log Koc 0.176 (ECHA)

E. Other adverse effects

- Not available

13. DISPOSAL CONSIDERATIONS

A. Disposal methods

- It shall be treated by incineration

- Oil water separation technology shall be applied as pre-waste treatment if it is applicable

- Stabilization and minimization treatment by incineration or similar method can be applied, if more than two kinds of designated wastes are in mixture state and it is impractical to separate them

B. Special precautions for disposal

- Anyone with business license number who generates industrial wastes shall treat the waste by him/herself or by entrusting to the legal entities who treat the wastes, recycle the wastes of others or install and operate the waste treatment facilities according to the Wastes Control Act

- Dispose of waste in accordance with all applicable laws and regulations.

14. TRANSPORT INFORMATION

A. UN No. (IMDG CODE/IATA DGR)

- Not applicable

B. Proper shipping name

- Not applicable

C. Hazard Class

- Not applicable

D. IMDG CODE/IATA DGR Packing group

- Not applicable

E. Marine pollutant

- Not applicable

F. Special precautions for user related to transport or transportation measures

- Air transport(IATA): Not subject to IATA regulations.
- Local transport follows in accordance with Dangerous goods Safety Management Law.
- Package and transport follow in accordance with Department of Transportation (DOT) and other regulatory agency requirements.
- EmS FIRE SCHEDULE : Not available
- EmS SPILLAGE SCHEDULE : Not available

15. REGULATORY INFORMATION

A. National and/or international regulatory information

○ POPs Management Law

- Not applicable

○ Information of EU Classification

* Classification

- [2-Butoxyethanol] : H302,H315,H319,H331

○ U.S. Federal regulations

* OSHA PROCESS SAFETY (29CFR1910.119)

- Not applicable

* CERCLA Section 103 (40CFR302.4)

- Not applicable

* EPCRA Section 302 (40CFR355.30)

- Not applicable

* EPCRA Section 304 (40CFR355.40)

- Not applicable

* EPCRA Section 313 (40CFR372.65)

- Not applicable

○ Rotterdam Convention listed ingredients

- Not applicable

○ Stockholm Convention listed ingredients

- Not applicable

○ Montreal Protocol listed ingredients

- Not applicable

16. OTHER INFORMATION

A. Reference

- The information contained herein is believed to be accurate. It is provided independently of any sale of the product for purpose of hazard communication. It is not intended to constitute performance information concerning the product. No express warranty, or implied warranty of merchantability or fitness for a particular purpose is made with respect to the product or the information contained herein.
- This Safety Data Sheet was compiled with data and information from the following sources: KOSHA, NITE, ESIS, NLM, SIDS, IPCS

B. Issue date

- 2025-10-01

C. Revision number and Last date revised

- Not applicable

D. Other

- This SDS is prepared according to the Globally Harmonized System (GHS).