TERRACO 테라코 코리아㈜

SAFETY DATA SHEET

BONATO

Date of issue: 2018-07-11 **Revision date: 2018-07-11** **Version: R0001.0003**

1. IDENTIFICATION

A. Product name

- BONATO

B. Recommended use and restriction on use

- General use : Bilding exterior wall finish
- Restriction on use : Not available

C. Manufacturer / Supplier / Distributor information

○ **Manufacturer information**

- Company name : TERRACO KOREA
- Address : 518-13 SIGOK-RI, SONG-HAK-MYUN, CHE-CHEN CITY, CHUNG-BOOK, KOREA
- Dept. : TERRACO KOREA R&D
- Telephone number : 82-043-645-8814
- Emergency telephone number : 82-043-645-8814
- Fax number : 82-043-645-8840
- E-mail address : terraco@terraco.co.kr

○ **Supplier/Distributer information**

- Company name : TORO LIFE Co., Ltd
- Address : 386-22, Wanju-Ro, Yongjin-Eup, Wanju-Gun, Jeollabuk-Do, KOREA
- Telephone number : 070-4047-4564
- Emergency telephone number : 02-1644-4562
- Fax number : 02-6008-1703
- E-mail address : tororo@torolife.com

2. HAZARD IDENTIFICATION

A. GHS Classification

- Skin corrosion/irritation : Category2
- Serious eye damage/irritation : Category1
- Carcinogenicity : Category1A
- Specific target organ toxicity(Single exposure) : Category2
- Specific target organ toxicity(Single exposure) : Category3(Respiratory tract irritation)
- Aspiration hazard : Category1

B. GHS label elements

○ **Hazard symbols**

○ **Signal words**

- Danger

○ **Hazard statements**

- H304 May be fatal if swallowed and enters airways
- H315 Causes skin irritation
- H318 Causes serious eye damage
- H335 May cause respiratory irritation.
- H350 May cause cancer
- H371 May cause damage to organs (Refer Section SDS 11)

○ **Precautionary statements**

1) Prevention

- P201 Obtain special instructions before use.
- P202 Do not handle until all safety precautions have been read and understood.
- P260 Do not breathe dust/fume.
- P261 Avoid breathing dust/fume.
- P264 Wash hands thoroughly after handling.
- P270 Do not eat, drink or smoke when using this product.
- P271 Use only outdoors or in a well-ventilated area.
- P280 Wear protective gloves/protective clothing/eye protection/face protection.

2) Response

- P301+P310 IF SWALLOWED: Immediately call a POISON CENTER or doctor/physician.
- P302+P352 IF ON SKIN: Wash with plenty of soap and water.
- P304+P340 IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing.
- P305+P351+P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
- P308+P313 If exposed or concerned: Get medical advice/attention.
- P309+P311 If exposed or if you feel unwell: Call a POISON CENTER or doctor/physician.
- P310 Immediately call a POISON CENTER or doctor/physician.
- P312 Call a POISON CENTER or doctor/physician if you feel unwell.
- P321 Specific treatment
- P331 Do NOT induce vomiting.
- P332+P313 If skin irritation occurs: Get medical advice/attention.
- P362 Take off contaminated clothing and wash before reuse.

3) Storage

- P403+P233 Store in a well-ventilated place. Keep container tightly closed.
- 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 : (NFPA Classification)

○ **NFPA grade (0 ~ 4 level)**

- Health : 3, Flammability : 0, Reactivity : 0

3. COMPOSITION/INFORMATION ON INGREDIENTS

Chemical Name	Trade names and Synonyms	CAS No.	Content(%)
Quartz (SiO2)	-	14808-60-7	40-50
Dolomite	-	16389-88-1	25-35
Portland cement, chemicals	-	65997-15-1	10-20
Limestone	-	1317-65-3	10-20
Calcium hydroxide	-	1305-62-0	1-10
Alumina cement, chemicals	-	65997-16-2	1-10
other	-	-	0.1-3

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.
- Remove contact lenses if worn.

B. Skin contact

- Flush skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes.
- Laundering enough contaminated clothing before reuse.
- Get medical attention immediately.
- Go to the hospital immediately if symptoms(flare, irritate) occur.
- Remove contaminated clothing, shoes and isolate.
- Wash thoroughly after handling.

- Wear gloves when washing the patient, and please avoid contact with contaminated clothing.

C. Inhalation contact

- When exposed to large amounts of steam and mist, move to fresh air.
- Take specific treatment if needed.
- 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.
- If swallowed, large amounts of water to drink and do not induce vomiting.

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

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

B. Specific hazards arising from the chemical

- Not available

C. Special protective actions for firefighters

- Withdraw immediately in case of rising sound from venting safety devices or discoloration of tank.
- Using a unattended and water devices in case of large fire and leave alone to burn if you do not imperative.
- Avoid inhalation of materials or combustion by-products.
- Do not access if the tank on fire.
- Use appropriate extinguishing measure suitable for surrounding fire.
- Keep containers cool with water spray.
- Fine powder may cause ignition.

6. ACCIDENTAL RELEASE MEASURES

A. Personal precautions, protective equipment and emergency procedures

- Ventilate closed spaces before entering.
- Do not touch spilled material. Stop leak if you can do it without risk.
- Handling the damaged containers or spilled material after wearing protective equipment.
- Avoid dust formation.
- Moist with water to prevent dust scattering.
- Avoid skin contact and inhalation.
- Cleanup and disposal under expert supervision is advised.
- Keep unauthorized people away,isolate hazard area and deny entry.

B. Environmental precautions

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

C. Methods and materials for containment and cleaning up

- Large spill : Stay upwind and keep out of low areas. Dike for later disposal.
- Notification to central government, local government. When emissions at least of the standard amount
- Dispose of waste in accordance with local regulation.
- Appropriate container for disposal of spilled material collected.

- Dust spills : Cover dust spills with plastic sheet or waterproof cloth to minimize spreading and avoid contact with water.
- Small liquid state spills: Appropriate container for disposal of spilled material collected.
- For disposal of spilled material in appropriate containers collected and clear surface.
- Spilled material should be treated as a potential risk of waste collected.

7. HANDLING AND STORAGE

A. Precautions for safe handling

- Wash thoroughly after handling.
- Avoid direct physical contact.
- Since emptied containers retain product residue(vapor, liquid, solid) follow all MSDS and label warnings even after container is emptied.
- Comply with all applicable laws and regulations for handling
- Minimize occurrence of dust and accumulation.`
- Contaminated work clothing should not be allowed out of the workplace.

B. Conditions for safe storage, including any incompatibilities

- Save in cool, dry and well ventilated place.
- Do not apply direct heat.
- Do not apply any physical shock to container.
- Keep in the original container.
- Please pay attention to incompatibilities materials and conditions to avoid.
- By specifying a storage area for carcinogenic substances.
- Collected them in sealed containers.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

A. Exposure limits

○ **ACGIH TLV**

- [Quartz (SiO2)] : TWA 0.025 mg/m3, Respirable particulate matter
- [Portland cement, chemicals] : TWA 1 mg/m3, Respirable Particulate Matter (containing no asbestos and <1% crystalline silica)
- [Calcium hydroxide] : TWA, 5 mg/m3
- [Titanium dioxide] : TWA 10 mg/m3
- [Octadecanoic acid zinc salt] : TWA 10 mg/m3, Total particulate mass
- [Cellulose] : TWA, 10 mg/m3

○ **OSHA PEL**

- [Quartz (SiO2)]: 10 mg/m3(%SiO2+2)
- [Portland cement, chemicals]: 15 mg/m3 (Total dust), 5 mg/m3 (Respirable fraction)
- [Limestone]: 15 mg/m3 (Total dust), 5 mg/m3 (Respirable fraction)
- [Calcium hydroxide]: 15 mg/m3 (Total dust), 5 mg/m3 (Respirable fraction)
- [Titanium dioxide]: 15 mg/m3 (Total dust)
- [Octadecanoic acid zinc salt]: 15 mg/m3 (Total dust), 5 mg/m3 (Respirable fraction)
- [Cellulose]: 15 mg/m3 (Total dust), 5 mg/m3 (Respirable fraction)

B. Engineering controls

- A system of local and/or general exhaust is recommended to keep employee exposures above the Exposure Limits. Local exhaust ventilation is generally preferred because it can control the emissions of the contaminant at its source, preventing dispersion of it into the general work area. The use of local exhaust ventilation is recommended to control emissions near the source.

C. Individual protection measures, such as personal protective equipment

○ **Respiratory protection**

- Under conditions of frequent use or heavy exposure, Respiratory protection may be needed.
- Respiratory protection is ranked in order from minimum to maximum.
- Consider warning properties before use.
- Dust, mist, fume-purifying respiratory protection
- Any air-purifying respirator with a corpuscle filter of high efficiency
- Any respiratory protection with a electromotion fan(for dust, mist, fume-purifying)
- Self-contained breathing apparatus with a corpuscle filter of high efficiency
- 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.

○ **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 glove.

○ **Skin protection**

- Wear appropriate clothing.

○ **Others**

- Not available

9. PHYSICAL AND CHEMICAL PROPERTIES

A. Appearance	
- Appearance	Solid(Powder)
- Color	Depends on grade
B. Odor	Odorless
C. Odor threshold	Not applicable
D. pH	10-12
E. Melting point/Freezing point	Not applicable
F. Initial Boiling Point/Boiling Ranges	Not applicable
G. Flash point	Not applicable
H. Evaporation rate	Not applicable
I. Flammability(solid, gas)	Not applicable
J. Upper/Lower Flammability or explosive limits	Not applicable
K. Vapour pressure	Not applicable
L. Solubility	Not applicable
M. Vapour density	Not applicable
N. Specific gravity(Relative density)	1.35-1.45
O. Partition coefficient of n-octanol/water	Not applicable
P. Autoignition temperature	Not applicable
Q. Decomposition temperature	Not applicable
R. Viscosity	Not applicable
S. Molecular weight	Not applicable

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

D. Incompatible materials

- Not available

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)**

- May be fatal if swallowed and enters airways
- May cause respiratory irritation.

○ **(Oral)**

- Not available

○ **(Eye·Skin)**

- Causes serious eye damage

- Causes skin irritation

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

○ **Acute toxicity**

*** Oral**

- Product (ATEmix) : >5000mg/kg
- [Calcium hydroxide] : LD50 = 7340 ㎎/㎏ Rat (ACGIH, HSDB)
- [Titanium dioxide] : LD50 > 10000 ㎎/㎏ Rat (HSDB)
- [Octadecanoic acid zinc salt] : LD50 > 5000 ㎎/㎏ Rat (EU RAR, NITE)
- [Cellulose] : LD50 > 5000 ㎎/㎏ Rat (NLM, RTECS)
- [Calcium formate] : LD50 2650 ㎎/㎏ Rat
- [Lithium carbonate] : LD50 525 ㎎/㎏ Rat (NITE)

*** Dermal**

- Product (ATEmix) : >5000mg/kg
- [Titanium dioxide] : LD50 > 10000 ㎎/㎏ Rabbit (IUCLID)
- [Octadecanoic acid zinc salt] : LD50 >2000 ㎎/㎏ Rabbit
- [Cellulose] : LD50 > 2000 ㎎/㎏ Rabbit (NLM, RTECS)

*** Inhalation**

- Product (ATEmix) : Not available
- [Titanium dioxide] : LC50 >3.43 ㎎/ℓ Rat (OECD TG 403)
- [Octadecanoic acid zinc salt] : LC50 > 50 ㎎/ℓ Rat (EU RAR, NITE)
- [Cellulose] : dust LC50 > 5.8 ㎎/L 4hr Rat (NLM, RTECS)
- [Lithium carbonate] : dust LC50 > 2.17 ㎎/ℓ 4 hr Rat (IUCLID, NITE)

○ **Skin corrosion/irritation**

- Causes skin irritation

○ **Serious eye damage/irritation**

- Causes serious eye damage

○ **Respiratory sensitization**

- Not available

○ **Skin sensitization**

- Not available

○ **Carcinogenicity**

*** IARC**

- [Quartz (SiO2)] : Group 1
- [Titanium dioxide] : Group 2B

*** OSHA**

- Not available

*** ACGIH**

- [Quartz (SiO2)] : A2
- [Portland cement, chemicals] : A4
- [Titanium dioxide] : A4
- [Octadecanoic acid zinc salt] : A4 (Stearates)

*** NTP**

- [Quartz (SiO2)] : K

*** EU CLP**

- Not available

○ **Germ cell mutagenicity**

- Not available

○ **Reproductive toxicity**

- Not available

○ **STOT-single exposure**

- May cause damage to organs
- May cause respiratory irritation.

○ **STOT-repeated exposure**

- Not available

○ **Aspiration hazard**

- May be fatal if swallowed and enters airways

12. ECOLOGICAL INFORMATION

A. Ecotoxicity

○ **Fish**
- [Calcium hydroxide] : LC50 = 33.884 ㎎/ℓ 96 hr Clarias gariepinus (ECOTOX)
- [Titanium dioxide] : LL50 >100 ㎎/ℓ 96 hr Oryzias latipes(OECD TG 203)
- [Octadecanoic acid zinc salt] : LC50 >1 ㎎/ℓ 96 hr (Danio rerio)(ECHA)
- [Cellulose] : LC50 100 ㎎/ℓ (Species, not specific information such as test) (IUCLID)
- [Calcium formate] : LC50 1540000 ㎎/ℓ 96 hr (Estimate)
- [Lithium carbonate] : LC50 8.1 ㎎/ℓ 96 hr (ECOTOX)

○ **Crustaceans**
- [Titanium dioxide] : EC50 >100 ㎎/ℓ 48 hr Daphnia magna(48h-EL50Daphnia magna>100 mg/L, 48h-EC50>100, 48h-EC10=91.2 mg/L, OECD TG 202)
- [Octadecanoic acid zinc salt] : LC50 1.2 ㎎/ℓ 48 hr Daphnia magna(OECD TG 202, Water solubility < 0.1 mg/L)(ECHA)
- [Cellulose] : EC50 100 ㎎/ℓ (IUCLID)
- [Calcium formate] : LC50 1210000 ㎎/ℓ 48 hr (Estimate)

○ **Algae**
- [Titanium dioxide] : ErL50 >100 ㎎/ℓ 72 hr (Pseudokirchneriella subcapitata, 72h-ErL50 Pseudokirchneriella subcapitata >100 mg/L growth rate, static, 72h-EyL50 >100 mg/L static, OECD TG 201)
- [Calcium formate] : EC50 584000 ㎎/ℓ 96 hr (Estimate)
- [Cellulose] : EC50 100 ㎎/ℓ (Species, No specific information such as test) (IUCLID)

B. Persistence and degradability

○ **Persistence**
- [Octadecanoic acid zinc salt] : log Kow = 1.2
- [Calcium formate] : log Kow -2.47 (NLM)
- [Lithium carbonate] : log Kow -6.19

○ **Degradability**
- [Octadecanoic acid zinc salt] : BOD5/COD = 0.138

C. Bioaccumulative potential

○ **Bioaccumulative potential**
- [Calcium formate] : BCF 3.162 (Estimate)
- [Lithium carbonate] : BCF 3.162 (Estimate)

○ **Biodegration**
- [Calcium formate] : > 75 (%) 20 day (IUCLID)

D. Mobility in soil

- Not available

E. Other adverse effects

- Not available

13. DISPOSAL CONSIDERATIONS

A. Disposal methods

- Since more than two kinds of designaed waste is mixed, it is difficult to treat seperatly, then can be reduction or stabilization by incineration or similar process.
- If water separation is possible, pre-process with Water separation process.
- Dispose by incineration.

B. Special precautions for disposal

- The user of this product must disposal by oneself or entrust to waste disposer or person who other's waste recycle and dispose, person who establish and operate waste disposal facilities.
- 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

- 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
- Air transport(IATA): Not subject to IATA regulations.

15. REGULATORY INFORMATION

A. National and/or international regulatory information

○ **POPs Management Law**

- Not applicable

○ **Information of EU Classification**

*** Classification**

- Not applicable

○ **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)**

- [Lithium carbonate] : 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

- 2018-07-11

C. Revision number and Last date revised

- 2 times, 2018-07-11

D. Other

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