



시험성적서 CERTIFICATE

Test Report No. 2019-03-003528

■original

□reissued

#12, Iwon-ro, Idong-eup, Cheoin-gu, Yongin-city, Gyeonggi-do, Rep. of Korea / +82-31-337-3701 / www.msdskorea.com

1. Client : TLC Company
2. Product name : GUARDIAN 200
3. Request date and number : February 14, 2019, No. 2019-03-003528
4. Test results



Items	Results	Test Methods
State	Solid at 20 °C	With reference to * KHMSCA
Flash Point (Closed Cup)	No flash occurred under 93 °C	KS M ISO 3679 : 2013 Rapid equilibrium method
Autoignition Temperature	No spontaneous combustion under 200 °C	ASTM E 659 : 15
pH	8.8 ~ 9.8 * Sample : H ₂ O = 1 : 5 (V/V)	With reference to KS I ISO 10390 : 2015
Relative Density	0.4 ~ 0.6 at 20 °C	KS M 0602 : 2015
Water Solubility	Soluble at 20 °C	With reference to KHMSCA
Burning Time / Rate Test	Burning rate : < 0.7 mm/s at 20 °C * Hazard Criteria : > 2.2 mm/s	** UN TDG Test N.1
Spontaneous Combustion Test	No spontaneous combustion at 20 °C	UN TDG Test N.2
Water Contact Test	No water reaction hazard at 20 °C - Rate of flammable gas emission : < 1.0 L/kg·h	UN TDG Test N.5
Oxidizing Test	Burning time : > 300 s at 20 °C * Hazard Criteria : ≤ 135 s	UN TDG Test O.1

* KHMSCA : Korea Hazardous Materials Safety Control Act.

** UN TDG : UN Recommendations on the Transport of Dangerous Goods - Tests and Criteria.

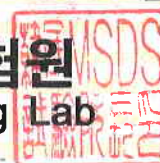
- Note : 1. These are the results tested with the sample provided by the above mentioned client.
2. This certificate is not valid and can not be used for advertisement, administrative litigation, or lawsuit.

February 22, 2019

Technical Manager : Vincent Park.



한국 MSDS 시험원
Korea MSDS Testing Lab



Safety Data Sheet

1. PRODUCT AND COMPANY INFORMATION

Product name : GUARDIAN 200
Company : TLC Company
Address : #199, Gojan-ro, Songak-eup, Dangjin-si, Chungcheongnam-do, 31725,
Republic of Korea
Telephone : + 82 41 354 7890
Fax : + 82 41 354 7891
Website : www.iglookorea.com

Recommended use of the chemical and restrictions on use

Recommended use : For Insulation(<180°C), Prevention of Condensation, and Sound
Absorption

Restrictions on use : It is inedible.

2. HAZARDS IDENTIFICATION

Globally Harmonized System of Classification and Labelling of Chemicals (GHS)

Physical hazard : Not applicable

Health hazards : Skin / Eye Irritation - Category 2

Environment hazard : Not applicable

Label elements including precautionary statements

Symbol



Signal word : Warning

Hazard statements H315 Causes skin irritation
H319 Causes serious eye irritation

Precautionary statements

Prevention P280 Wear protective gloves/protective clothing/eye protection/face protection.
P264 Wash thoroughly after handling.

Responses P302+P352 If on skin: wash with plenty of water.
P332+P313 If skin irritation occurs: get medical advice/attention.
P362+P364 Take off contaminated clothing and wash before reuse.
P305+P351+P338 If in eyes : Rinse cautiously with water for several minutes.

Remove contact lenses, if present and easy to do. Continue rinsing.
P337+P313 If eye irritation persists : Get medical advice/attention.

Storage / Disposal Not applicable

NFPA Rating

Health : 2

Flammability : 0

Reactivity : 0

Water reactivity : 0

3. COMPOSITION/INFORMATION ON INGREDIENTS

Ingredients	CAS No.	EINECS No.	Conc. %
Water	7732-18-5	231-791-2	30 % ~ 45 %
Acrylic acid styrene polymer	25085-34-1	607-532-8	35 % ~ 40 %
Fiberglass	65997-17-3	266-046-0	5 % ~ 15 %
Titanium oxide	51745-87-0	257-372-4	2 % ~ 5 %
Etc.	-	-	< 0.1 %

4. FIRST AID MEASURES

In case of eye contact

Rinse thoroughly with plenty of water for at least 15 minutes and consult a physician.

In case of skin contact

Wash off with soap and plenty of water.

If inhaled

If breathed in, move person into fresh air.

If not breathing, give artificial respiration.

Consult a physician.

If swallowed

Never give anything by mouth to an unconscious person.

Rinse mouth with water.

Consult a physician.

Other medical attention.

Medical personnel should be aware of the protective measures of the substance.

Potential health effect

May be harmful if swallowed.

5. FIRE-FIGHTING MEASURES

Flammable properties

Flash point : No flash occurred under 93 °C (Rapid equilibrium method)

Burning rate : < 0.7 mm/s at 20 °C (UN TDG test & criteria - Test N1)

Suitable extinguishing media

Water spray, alcohol-resistant foam, dry chemical, carbon dioxide

Specific hazards arising from the chemical

No data available

Special protective equipment for fire-fighters

Wear self-contained breathing apparatus for fire fighting if necessary.

6. ACCIDENTAL RELEASE MEASURES

Personal precautions

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

Avoid contact with skin and eyes.

Avoid inhalation of vapor, mist or dust.

Environmental precautions

Don't dispose the product into drainages.

Methods and materials for containment and cleaning up

Collect with non-combustible absorbent materials.(sand and soil)

7. HANDLING AND STORAGE

Precautions for safe handling

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

Provide forced air ventilation in tanks and confined spaces.

Avoid contact with skin and eyes.

Avoid inhalation of vapor, mist or dust.

Do not eat, drink or smoke when using this product.

Wash hands thoroughly after handling.

Conditions for safe storage

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

Store locked up.

8. EXPOSURE CONTROL/PERSONAL PROTECTION

Components with workplace control parameter

KOSHA :	Chemical Name	TWA	STEL
	Fiberglass	5 mg/m ³	-
ACGIH :	Chemical Name	TLV	STEL
	Fiberglass	1 mg/m ³ , respirable fraction	-

Appropriate engineering controls : Ventilation, Emergency shower

Personal protective equipment

Respiratory protection : Approved respirator equipped with cartridge for dust

Hand protection : Chemical resistant gloves

Eye protection : Protective goggles

Skin and body protection : Working clothes

9. PHYSICAL AND CHEMICAL PROPERTIES

State : Solid (Paste) at 20 °C

pH : 8.8 ~ 9.8 at 20 °C ※ Sample : H₂O = 1 : 5 (V/V)

Flash point : No flash occurred under 93 °C (Rapid equilibrium method)

Autoignition temperature : No spontaneous combustion under 200 °C

Water solubility : Soluble at 20 °C

Relative density : 0.4 ~ 0.6 at 20 °C

Flammability :

Burning rate : < 0.7 mm/s at 20 °C ※ UN TDG test & criteria - Test N1

Oxidizing properties : No oxidizing hazard ※ UN TDG test & criteria - Test O1

Explosive properties : No data available

Melting Range : No data available

Boiling Point : > 97 °C

Vapour Pressure : No data available

Decomposition temperature : No data available

Partition coefficient (n-octanol/water) : No data available

Viscosity : No data available

Evaporation rate : No data available

Lower explosion limit / Upper explosion limit : No data available

10. STABILITY AND REACTIVITY

Chemical stability

Stable under recommended storage conditions.

Conditions to avoid

Avoid inhalation of vapor, mist or dust.

Materials to avoid

Substances which, in contact with water, emit flammable gases

Hazardous decomposition products

Carbon oxides

11. TOXICOLOGICAL INFORMATION

Acute toxicity

Oral	rat	LD50 : > 2,000 mg/kg	※ from US NLM / ECHA
Skin	rabbit	LD50 : No data available	
Inhalation	rat	LC50 : No data available	

Skin irritation

Irritating (Glass fiber) ※ from US NLM / ECHA

Eye irritation

Irritating (Glass fiber) ※ from US NLM / ECHA

Respiratory sensitization : No data available

Skin sensitization : No data available

Germ cell mutagenicity : No data available

Carcinogenicity : Not classifiable ※ from ECHA

Reproductive toxicity : No data available

Specific target organ toxicity – single exposure (GHS) : No data available

Specific target organ toxicity – repeated exposure (GHS) : No data available

Aspiration hazard : No data available

12. ECOLOGICAL INFORMATION

Toxicity

Fish	LC50 : No data available	※ from US NLM / ECHA
Crustacean	EC50 : No data available	
Algae	EC50 : No data available	

Persistence and degradability : No data available

Bioaccumulative potential : No data available

Mobility in soil : No data available

Other adverse effects : No data available

13. DISPOSAL CONSIDERATIONS

Disposal consideration

Observe all environmental regulations.

Disposal precaution

Avoid disposing to the environment.

14. TRANSPORT INFORMATION

UN TDG : Not dangerous goods

IATA : Not dangerous goods

IMDG : Not dangerous goods

Marine pollution : Not applicable

Special precaution

Fire EmS Guide : F-A (Recommendation)

Spillage EmS Guide : Not dangerous goods

15. REGULATORY INFORMATION

Korea Industrial Safety and Health Act :

GHS : Skin / Eye Irritation - Category 2

Material(s) applied by workplace exposure limits : Fiberglass

Korea Chemicals Control Act : Not toxic chemical

Korea Hazardous Materials Safety Control Act : Not hazardous material

Korea Persistent Organic Pollutants Control Act : Not applicable

US OSHA Hazards (GHS) : Skin / Eye Irritation

16. OTHER INFORMATION

Issued Date : 2019. 02. 22.

Revision No. : 0

Revision Date : -

References

- GHS Classification :

Korea MSDS Testing Lab Certificate (Report No. 2019-03-003528), US NLM

- Physical and chemical properties : Korea MSDS Testing Lab Certificate

- Transport information : Korea MSDS Testing Lab Certificate

- Toxic & ecological information : OECD SIDS, ECHA, US NLM, HSDB, IARC, CCRIS, JP NITE

Acronyms and Websites

- ECHA : European chemical agency, <http://echa.europa.eu/>
- US NLM : U.S. National Library of Medicine, <http://chem.sis.nlm.nih.gov/chemidplus/>
- HSDB : US Hazardous Substances Data Bank, <http://toxnet.nlm.nih.gov/>
- CCRIS : US Chemical Carcinogenesis Research Information System, <http://toxnet.nlm.nih.gov/>
- IARC : International Agency for Research on Cancer, <http://monographs.iarc.fr/>
- JP NITE : Japan National Institute of Technology and Evaluation, <http://www.safe.nite.go.jp/>

※ Hazards Testing and Classification

Korea MSDS Testing Laboratory

Website : www.msdkorea.com

Telephone : +82 31 337 3701 / 3702

Address : #12, Iwon-ro, Idong-eup, Cheoin-gu, Yongin-city, Gyeonggi-do, 17128, Rep. of Korea



This SDS' composition/information on ingredient(s) and recommended use are provided by the mentioned company in this SDS' section 1.

This SDS is composed in line with Korea Occupational Safety and Health Act (KOSHA) Article 41, to protect the health of the employees, and for documentation.

This SDS is composed with reference to criteria provided by KOSHA.

- End -