NOROO

GHS-MSDS

Hazardous Substance, Non- Dangerous Goods

1. Identification

A. Product name : CLEANPOXY(W) TOPCOAT (HARDENER) (WHITE)

B. Recommended Use and Restriction on Use
- ○ General use : For concrete floor
- ○ Restriction on use : Restricted to use other than recommended use

C. Manufacturer / Supplier / distributor information
- ○ Company name : NOROO Paint & Coatings Co., Ltd.
- ○ Address : 351, Bakdal-ro, Manan-gu, Anyang-si, Gyeonggi-do, Korea
- ○ Emergency telephone number : +82-31-467-6114

D. AU Importer
- ○ Company name : Synergy Building Supplies
- ○ Address : 236 PLANET ST WELSHPOOL WA 6106
- ○ Emergency telephone number : 1300 655 853

2. Hazard identification

A. GHS Classification
Acute toxicity (dermal) Category 4

This material is hazardous according to health criteria of Safe Work Australia

B. GHS label elements
- ○ Hazard symbols



- ○ Signal words : WARNING
- ○ Hazard statements :
  H312 Harmful in contact with skin
- ○ Precautionary statements
  - Prevention
    P280 Wear protective gloves/protective clothing/eye protection/face protection.
  - Response
    P302+P352 IF ON SKIN: Wash with plenty of soap and water.
    P312 Call a POISON CENTER or doctor/physician if you feel unwell.
    P322 Specific measures
    P363 Wash contaminated clothing before reuse.
  - Storage
    NO DATA
  - 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 / Chemical Name	Health	Flammability	Reactivity
Water	0	0	0
Rutile(TiO2)	1	0	0
Barium sulfate, natural	1	0	0
4,4'-(1-Methylethylidene)bisphenol polymer with 2,2'-[(1-methylethylidene)bis(4,1-phenyleneoxymethylene)]bis[oxirane]	2	1	0
S1(Trade secrets)	3	1	0
Trade secret	NO DATA	NO DATA	NO DATA

3. Composition/information on ingredients

Chemical Name	Trade names and Synonyms	CAS-NO	Content(%)
Water	Water	7732-18-5	33~43
Rutile(TiO2)	Rutile(TiO2)	1317-80-2	24~34
Barium sulfate, natural	Barium sulfate, natural	7727-43-7	16~26
4,4'-(1-Methylethylidene)bisphenol polymer with 2,2'-[(1-methylethylidene)bis(4,1-phenyleneoxymethylene)]bis[oxirane]	4,4'-(1-Methylethylidene)bisphenol polymer with 2,2'-[(1-methylethylidene)bis(4,1-phenyleneoxymethylene)]bis[oxirane]	25036-25-3	8~18
S1(Trade secrets)	-	-	2~12
Trade secret	-	-	1~10

4. First-aid measures

A. Eye Contact : If irritation, pain, swelling, tears or glaring happens, take medical assistant immediately Flush exposed eyes with plenty of water for more than 15minutes.

B. Skin Contact : Wash off with soap and water for more than 15 minutes. And take medical assistant immediately. If symptoms like irritation or pain occurs, take medical assistant immediately. Remove exposed clothing, and wash off exposed area with soap and water.

C. Inhalation : Take a medical assistant immediately. Remove contaminated clothing and shoes, and isolate it. If hard

to breathe, administering oxygen Perform the artificial respiration, using the pocket mask with one way valves or other respiratory medical devices. If inhalated or swallowed, do not perform the inhalation phase of breathing If not breathing, perform the artificial respiration. Avoid from exposure, and move into an area with fresh air.

D. Ingestion Contact : It is need to be considered that early removal of some ingested material by gastric lavage must be weighed against potential complications of bleeding or perforation Take proper medical assistant by symtoms. If ingested large quantity, take medical assistant. Do not try to induce vomiting, if occurs, keep head below hips to prevent swallow into lungs. Inducing vomit.

E. Notes to Physician : There is no specific antidote and take an appropriate medical treatment.

5. Fire-fighting measures

A. Suitable (Unsuitable) extinguishing media
○ Suitable extinguishing media : Powder extinguishing agent, gaseous Extinguishing Agent, and regular foam.
○ (Unsuitable) extinguishing media : Water is not appropriate extinguishing agent
○ Case of big fire : Use appropriate protective device depend on the situation. Stay away more than 800m to avoid tank explosion. Spread large amount of the extinguishing agent as a mist form with staying against wind.

B. Specific hazards arising from the chemical
○ Pyrolysate : Carbon dioxide, toxic carbon compounds/Nitrogen compounds/sulfur compounds
○ Fire and Explosion danger : Aqueous (Exclude water-soluble one) products does not have risk of fire or explosion hazard by itself.

C. Special protective actions for fire-fighters
○ Personal Precautions, protective equipment : Gas mask or air respirator, heat resistant clothing, heat resistant helmet, heat resistant gloves, heat resistant boots
○ Emergency procedures : Block the area except for the fire-suppression personnel. Cooling containers with water long time after extinguish fire. If there is no risk, moving containers away from fire. Use appropriate extinguishing agents to catch fire.

6. Accidental release measures

A. Personal Precautions, protective equipment and emergency procedures
○ Personal Precautions, protective equipment : Gas mask for organic gases, other appropriate protective device / clothing / gloves.
○ Emergency procedures : Do not contact on the bare skin Do work with the personal protected devices such as gas mask for organic gases other appropriate protective devices / clothing / gloves. Spray water to reduce amount of steam. Take an action to block the leakage if there is no risk.

B. Environmental precautions
○ Atmosphere : Using local ventilation to Minimize the exposure to worker. Do install the local ventilations and full ventilation system
○ Soil : Use absorbent to collect the appropriate container. Trap spilled material at bottom in deep water pockets, excavated holding areas or within sand bag barriers.
○ Under water : Collect spilled material with mechanic devices Use absorbent to collect the appropriate container.

C. Methods and materials for containment and cleaning up
○ Small spill : Move to appropriate container for disposal of spilled material collected. Absorb for use sand or other non-combustible material.
○ Large spill : Notify to central and local government, when emissions are above regulation. Prohibit access of unnecessary people, isolate hazard area to secure.

7. Handling and storage

A. Precautions for safe handling : Use local ventilations and a full ventilation system when handling Seal the container for minimizing the petroleum steam Ground for preventing the static discharge Keep or handle followed by Dangerous goods Safety Management Act

B. Conditions for safe storage, including any incompatibilities : Stored in an isolated place, freezing caution, high temperature body caution. Avoid strong oxidizing agents, acid. Storage temperature: 5 ~ 35 ℃ Avoid direct sunlight while storing outdoor. Because of evaporation and contamination concerns, airtight the container and store in a well-ventilated building.

8. Exposure controls/personal protection

A. Exposure Limits
○ Water
- ACGIH : NO DATA
- Biological exposure indices : NO DATA

○ Rutile(TiO2)
- ACGIH : NO DATA
- Biological exposure indices : NO DATA

○ Barium sulfate, natural
- ACGIH : NO DATA
- Biological exposure indices : NO DATA

○ 4,4'-(1-Methylethylidene)bisphenol polymer with 2,2'-[(1-methylethylidene)bis(4,1-phenyleneoxymethylene)]bis[oxirane]
- ACGIH : NO DATA
- Biological exposure indices : NO DATA

○ S1 (Trade secrets)
- ACGIH : NO DATA
- Biological exposure indices : NO DATA

○ Trade secret
- ACGIH : NO DATA
- Biological exposure indices : NO DATA

B. Engineering Controls :
▷ Do install the local ventilations and full ventilation system
▷ Using local ventilation to Minimize the exposure to worker.
▷ NO DATA
▷ NO DATA

C. Personal Protective Equipment
○ Respiratory protection : Respirators should be authorized by Korea Occupational Safety and Health Agency
○ Eye protection : If there is possibility of direct contact or exposure to these substances should wear authorized safty glasses or mask. Install washing facilities and an emergency washing facilities close to workplace.
○ Hand protection : Wear appropriate protective gloves
○ Skin protection : Wear cleanroom garment or appropriate protective clothing to prevent contamination

9. Physical and chemical properties

A. Appearance : liquid

B. Odor : solvent odor

C. Odor threshold : NO DATA

D. PH : NO DATA

E. Melting point/Freezing point(℃) : NO DATA

F. Initial Boiling Point/Boiling Ranges(℃) : NO DATA

G. Flash point(℃) : NON Flammable

H. Evaporating Rate : NO DATA

I. Flammability(solid, gas)(℃) : NON Flammable

J. Upper/Lower Flammability or explosive limits : NO DATA

K. Vapour pressure : NO DATA

L. Solubility : soluble

M. Vapour density : NO DATA

N. Specific gravity : 1.2±0.1

O. Partition coefficient of n-octanol/water : NO DATA

P. Autoignition temperature(℃) : 470

Q. Decomposition temperature(℃) : NO DATA

R. Viscosity : 75~90KU

S. Molecular weight : NO DATA

10. Stability and reactivity

A. Chemical stability : NO DATA

B. Possibility of hazardous reactions : Avoid contaminants and friction Do not contact with heat, spark, flame or other flammable sources

C. Conditions to avoid : Oxidation agent, metal and combustable materials

D. Hazardous decomposition products : Thermal decomposition products (carbon etc.,)

11.Toxicological information

A. Information on the likely routes of exposure
○ Respiratory tracts : Adverse lung effects, Dyspnoea, Hypothermia, Vomitting
○ Oral : Vomitting, Diarrhea, Stomach pain, Irregular heartbeat
○ Skin : Irritation, Burn, Adverse nerve effects
○ Eye : Irritation, eye damage

B. Delayed and immediate effects and also chronic effects from short and long term exposure
○ Water
- Acute toxicity
  Oral : LD50 = 90000 ㎎/㎏ Rat
  Dermal : NO DATA
  Inhalation : NO DATA
- Skin corrosion/irritation : notapplicable
- Serious eye damage/irritation : NO DATA
- Respiratory sensitization : NO DATA
- Skin sensitization : NO DATA
- Carcinogenicity
  IARC : NO DATA
  OSHA : NO DATA
  ACGIH : NO DATA
  NTP : NO DATA

EU CLP : NO DATA
- Germ cell mutagenicity : NO DATA
- Reproductive toxicity : NO DATA
- STOT-single exposure : NO DATA
- STOT-repeated exposure : NO DATA
- Aspiration hazard : NO DATA

○ Rutile(TiO2)
- Acute toxicity
Oral : LD50 > 24000 mg/kg Rat
Dermal : NO DATA
Inhalation : NO DATA
- Skin corrosion/irritation : NO DATA
- Serious eye damage/irritation : NO DATA
- Respiratory sensitization : NO DATA
- Skin sensitization : NO DATA
- Carcinogenicity
IARC : NO DATA
OSHA : NO DATA
ACGIH : NO DATA
NTP : NO DATA
EU CLP : NO DATA
- Germ cell mutagenicity : NO DATA
- Reproductive toxicity : NO DATA
- STOT-single exposure : NO DATA
- STOT-repeated exposure : This risk may be increased by exposure to a case : Respiratory disorders
- Aspiration hazard : NO DATA

○ Barium sulfate, natural
- Acute toxicity
Oral : LD50 > 3000 mg/kg Rat
Dermal : NO DATA
Inhalation : NO DATA
- Skin corrosion/irritation : Non-irritating to human
- Serious eye damage/irritation : e irritation have been reported in humans.
- Respiratory sensitization : NO DATA
- Skin sensitization : NO DATA
- Carcinogenicity
IARC : NO DATA
OSHA : NO DATA
ACGIH : NO DATA
NTP : NO DATA
EU CLP : NO DATA
- Germ cell mutagenicity : NO DATA
- Reproductive toxicity : NO DATA
- STOT-single exposure : NO DATA
- STOT-repeated exposure : NO DATA
- Aspiration hazard : NO DATA

○ 4,4'-(1-Methylethylidene)bisphenol polymer with 2,2'-[(1-methylethylidene)bis(4,1-phenyleneoxymethylene)]bis[oxirane]
- Acute toxicity
Oral : LD50 > 2000 mg/kg Rat
Dermal : LD50 > 2000 mg/kg Rabbit
Inhalation : LD50 > 2000 mg/kg Rabbit
- Skin corrosion/irritation : NO DATA
- Serious eye damage/irritation : NO DATA
- Respiratory sensitization : NO DATA
- Skin sensitization : NO DATA
- Carcinogenicity
IARC : NO DATA
OSHA : NO DATA
ACGIH : NO DATA
NTP : NO DATA
EU CLP : NO DATA
- Germ cell mutagenicity : NO DATA
- Reproductive toxicity : NO DATA
- STOT-single exposure : NO DATA
- STOT-repeated exposure : NO DATA
- Aspiration hazard : NO DATA

○ S1 (Trade secrets)
- Acute toxicity
Oral : LD50 = 3990 mg/kg Rat
Dermal : LD50 = 660 mg/kg Rabbit
Inhalation : LD50 = 660 mg/kg Rabbit
- Skin corrosion/irritation : severestimulus(495mg, rabbit), severestimulus(5mg, 24H, rabbit)
- Serious eye damage/irritation : Stimulation of normal(100mg, 24시간, rabbit), Stimulation of normal(5mg, rabbit)
- Respiratory sensitization : NO DATA
- Skin sensitization : NO DATA
- Carcinogenicity
IARC : NO DATA
OSHA : NO DATA
ACGIH : NO DATA

NTP : NO DATA
EU CLP : NO DATA
- Germ cell mutagenicity : NO DATA
- Reproductive toxicity : NO DATA
- STOT-single exposure : NO DATA
- STOT-repeated exposure : NO DATA
- Aspiration hazard : NO DATA

○ Trade secret
- Acute toxicity
Oral : NO DATA
Dermal : NO DATA
Inhalation : NO DATA
- Skin corrosion/irritation : NO DATA
- Serious eye damage/irritation : NO DATA
- Respiratory sensitization : NO DATA
- Skin sensitization : NO DATA
- Carcinogenicity
IARC : NO DATA
OSHA : NO DATA
ACGIH : NO DATA
NTP : NO DATA
EU CLP : NO DATA
- Germ cell mutagenicity : NO DATA
- Reproductive toxicity : NO DATA
- STOT-single exposure : NO DATA
- STOT-repeated exposure : NO DATA
- Aspiration hazard : NO DATA

12. Ecological information

A. Ecotoxicity

○ Water
- Fish : NO DATA
- Crustaceans : NO DATA
- Algae : NO DATA

○ Rutile(TiO2)
- Fish : LC50 = 35.988 ㎎/ℓ 96 hr
- Crustaceans : LC50 = 39.180 ㎎/ℓ 48 hr
- Algae : EC50 = 24.821 ㎎/ℓ 96 hr

○ Barium sulfate, natural
- Fish : NO DATA
- Crustaceans : EC50 = 32 ㎎/ℓ 48 hr Daphnia magna
- Algae : EC50 = 1890.263 ㎎/ℓ 96 hr

○ 4,4'-(1-Methylethylidene)bisphenol polymer with 2,2'-[(1-methylethylidene)bis(4,1-phenyleneoxymethylene)]bis[oxirane]
- Fish : NO DATA
- Crustaceans : NO DATA
- Algae : NO DATA

○ S1 (Trade secrets)
- Fish : NO DATA
- Crustaceans : NO DATA
- Algae : NO DATA

○ Trade secret
- Fish : NO DATA
- Crustaceans : NO DATA
- Algae : NO DATA

B. Persistence and degradability

○ Water
- Persistence : log Kow = -1.38
- Degradability : NO DATA

○ Rutile(TiO2)
- Persistence : NO DATA
- Degradability : NO DATA

○ Barium sulfate, natural
- Persistence : log Kow = 0.63
- Degradability : NO DATA

○ 4,4'-(1-Methylethylidene)bisphenol polymer with 2,2'-[(1-methylethylidene)bis(4,1-phenyleneoxymethylene)]bis[oxirane]
- Persistence : NO DATA
- Degradability : NO DATA

○ S1 (Trade secrets)
- Persistence : NO DATA
- Degradability : NO DATA

○ Trade secret
- Persistence : NO DATA
- Degradability : NO DATA

C. Bioaccumulative potential

○ Water
- Bioaccumulative potential : NO DATA
- Biodegration : NO DATA

○ Rutile(TiO2)
- Bioaccumulative potential : BCF = 10.38
- Biodegration : NO DATA

○ Barium sulfate, natural
- Bioaccumulative potential : BCF = 3.162
- Biodegration : NO DATA

○ 4,4'-(1-Methylethylidene)bisphenol polymer with 2,2'-[(1-methylethylidene)bis(4,1-phenyleneoxymethylene)]bis[oxirane]
- Bioaccumulative potential : NO DATA
- Biodegration : NO DATA

○ S1 (Trade secrets)
- Bioaccumulative potential : NO DATA
- Biodegration : NO DATA

○ Trade secret
- Bioaccumulative potential : NO DATA
- Biodegration : NO DATA

D. Mobility in soil

○ Water
▷ NO DATA

○ Rutile(TiO2)
▷ NO DATA

○ Barium sulfate, natural
▷ NO DATA

○ 4,4'-(1-Methylethylidene)bisphenol polymer with 2,2'-[(1-methylethylidene)bis(4,1-phenyleneoxymethylene)]bis[oxirane]
▷ NO DATA

○ S1 (Trade secrets)
▷ NO DATA

○ Trade secret
▷ NO DATA

E. Other adverse effects

○ Water
▷ NO DATA

○ Rutile(TiO2)
▷ NO DATA

○ Barium sulfate, natural
▷ NO DATA

○ 4,4'-(1-Methylethylidene)bisphenol polymer with 2,2'-[(1-methylethylidene)bis(4,1-phenyleneoxymethylene)]bis[oxirane]
▷ NO DATA

○ S1 (Trade secrets)
▷ NO DATA

○ Trade secret
▷ NO DATA

13. Disposal considerations

A. Disposal methods : Disposal material should keep in the airtighted container, and consign according to Waste Mateial Management Act

B. Special precautions for disposal : Discard it followed by appropriate regulations Prohibit the unauthorized disposal and incineration due to adversely affect natural ecosystems

14. Transport information

Not classified as Dangerous Goods by the criteria of the "Australian Code for the Transport of Dangerous Goods by Road & Rail" and the "New Zealand NZS5433: Transport of Dangerous Goods on Land".

A. UN number : Non regulated

B. Proper shipping name : N/A

C. Hazard class : Non dangerous goods

D. Packing group : N/A

E. Marine pollutant : N/A

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

○ EmS FIRE SCHEDULE : N/A

○ EmS SPILLAGE SCHEDULE : N/A

15. Regulatory information

○ Water
- Information of EU Classification
▷ Classification : NO DATA
▷ Risk Phrases : NO DATA
▷ Safety Phrase : NO DATA
- U.S. Federal regulations
▷ OSHA PROCESS SAFETY (29CFR1910.119) : notapplicable
▷ CERCLA Section 103 (40CFR302.4) : notapplicable
▷ EPCRA Section 302 (40CFR355.30) : notapplicable
▷ EPCRA Section 304 (40CFR355.40) : notapplicable
▷ EPCRA Section 313 (40CFR372.65) : notapplicable
- Rotterdam Convention listed ingredients : NO DATA

- Stockholm Convention listed ingredients : NO DATA
- Montreal Protocol listed ingredients : NO DATA

○ Rutile(TiO2)
- Information of EU Classification
  ▷ Classification : NO DATA
  ▷ Risk Phrases : NO DATA
  ▷ Safety Phrase : NO DATA
- U.S. Federal regulations
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- Rotterdam Convention listed ingredients : NO DATA
- Stockholm Convention listed ingredients : NO DATA
- Montreal Protocol listed ingredients : NO DATA

○ Barium sulfate, natural
- Information of EU Classification
  ▷ Classification : NO DATA
  ▷ Risk Phrases : NO DATA
  ▷ Safety Phrase : NO DATA
- U.S. Federal regulations
  ▷ OSHA PROCESS SAFETY (29CFR1910.119) : notapplicable
  ▷ CERCLA Section 103 (40CFR302.4) : notapplicable
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- Stockholm Convention listed ingredients : NO DATA
- Montreal Protocol listed ingredients : NO DATA

○ 4,4'-(1-Methylethylidene)bisphenol polymer with 2,2'-[(1-methylethylidene)bis(4,1-phenyleneoxymethylene)]bis[oxirane]
- Information of EU Classification
  ▷ Classification : NO DATA
  ▷ Risk Phrases : NO DATA
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○ S1 (Trade secrets)
- Information of EU Classification
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- Rotterdam Convention listed ingredients : NO DATA
- Stockholm Convention listed ingredients : NO DATA
- Montreal Protocol listed ingredients : NO DATA

○ Trade secret
- Information of EU Classification
  ▷ Classification : NO DATA
  ▷ Risk Phrases : NO DATA
  ▷ Safety Phrase : NO DATA
- U.S. Federal regulations
  ▷ OSHA PROCESS SAFETY (29CFR1910.119) : NO DATA
  ▷ CERCLA Section 103 (40CFR302.4) : NO DATA
  ▷ EPCRA Section 302 (40CFR355.30) : NO DATA
  ▷ EPCRA Section 304 (40CFR355.40) : NO DATA
  ▷ EPCRA Section 313 (40CFR372.65) : NO DATA
- Rotterdam Convention listed ingredients : NO DATA
- Stockholm Convention listed ingredients : NO DATA
- Montreal Protocol listed ingredients : NO DATA

16. Other information

A. Reference
This MSDS is based on 'Industrial safety and health' Act paragraph 41 and Proclamation of Ministry of Labor and Employment 2016-19, and considered domestic regulations.
This MSDS is based on KOSHA, NITE, ESIS, NLM, SIDS, IPCS, NCIS.

B. Issue date : 2019-10-02 오전 8:55:19

C. Revision number and Last date revised : 2.(15/7/2024 오전 9:01:19)

D. Other : " WWW.NOROO.CO.KR"