1. Identification

A. Product name : CLEANPOXY DNY-200(E) (AUS) (HARDENER)
○ Usage category : Oil paint

B. Recommended Use and Restriction on Use
○ General use : for concrete
○ 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 (oral) Category 4
Acute toxicity (inhalation: vapor) Category 4
Acute Toxicity (Inhalation: dust / mist) Category 4
Reproductive toxicity Category 1B
Germ cell mutagenicity Category 2
Serious eye damage/irritation Category 1
Acute aquatic toxicity Category 1
Chronic aquatic toxicity Category 1
Serious eye damage/irritation Category 2A
Skin sensitization Category 1
Skin corrosion/irritation Category 1
Skin corrosion/irritation Category 2
Flammable liquids Category 4
Acute toxicity (dermal) Category 5

B. GHS label elements
○ Hazard symbols

○ Signal words : DANGER
○ Hazard statements :
H302 Harmful if swallowed
H332 Harmful if inhaled
H360 May damage fertility or the unborn child
H341 Suspected of causing genetic defects
H318 Causes serious eye damage
H400 Very toxic to aquatic life
H410 Very toxic to aquatic life with long lasting effects
H319 Causes serious eye irritation
H317 May cause an allergic skin reaction
H314 Causes severe skin burns and eye damage
H315 Causes skin irritation
H227 Flammable liquid
H313 May be harmful in contact with skin.
○ Precautionary statements

- Prevention
  P264 Wash hands and contact areas thoroughly after handling.
  P270 Do not eat, drink or smoke when using this product.
  P261 Avoid breathing dust/fume/gas/mist/vapours/spray.
  P271 Use only outdoors or in a well-ventilated area.
  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.
  P273 Avoid release to the environment.
  P272 Contaminated work clothing should not be allowed out of the workplace.
  P260 Do not breathe dust/fume/gas/mist/vapours/spray.
  P210 Keep away from heat, hot surfaces, sparks, open flames and other sources of ignition. no smoking
- Response
  P301+P312 If swallowed: If you feel unwell, get medical help.
  P330 Rinse mouth.
  P304+P340 IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing.
  P312 Call a POISON CENTER or doctor/physician if you feel unwell.
  P308+P313 If exposed or concerned: Get medical advice / attention.
  P305+P351+P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
  P310 Immediately call a POISON CENTER or doctor/physician.
  P391 Collect spillage.
  P337+P313 If eye irritation persists, get medical attention / attention.
  P302+P352 IF ON SKIN: Wash with plenty of soap and water.
  P333+P313 If skin irritation or rash occurs: Get medical advice/attention.
  P321 Specific treatment
  P362+P364 Take off contaminated clothing and wash before reuse.
  P301+P330+P331 Rinse mouth if swallowed. Do not induce vomiting.
  P303+P361+P353 IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower.
  P363 Wash contaminated clothing before reuse.
  P332+P313 If skin irritation occurs: Get medical advice/attention.
  P370+P378 In case of fire: Use Suitable extinguishing media for extinction(Refer Section MSDS 5).
- Storage
  P405 Save by locking.
  P403 Store in a well-ventilated place.
- Disposal
  P501 Dispose of the contents and containers in accordance with waste-related laws.

C. Other hazards which do not result in classification : (NFPA Classification)

NFPA grade Chemical Name	Health	Flammability	Reactivity	GHS Classification
α-(2-Aminomethylethyl)-ω-(2-aminomethylethoxy)poly[oxy(methyl-1,2-ethanediyl)]	3	1	0	H302, H313, H318, H410
Trade secret	NO DATA	NO DATA	NO DATA	NO DATA
Benzyl alcohol	2	1	0	H302, H313, H317, H332
Formaldehyde polymer with 1,3-benzenedimethanamine and phenol	NO DATA	NO DATA	NO DATA	H400, H410

Dodecylphenol, mixed isomers	NO DATA	NO DATA	NO DATA	H302, H313, H318, H360, H400, H410
2,4,6-Tris[(dimethylamino)methyl]phenol	3	1	0	H302, H313, H319
1,2-Ethanediamine, N,N'-bis(2-aminoethyl)-	3	1	0	H302, H313, H314, H317, H318, H319
1,3-Bis (Aminomethyl) benzene	4	1	0	H302, H313, H314, H317, H318, H319, H332, H410
Phenol	3	2	0	H302, H313, H314, H318, H319, H332, H341, H410

3. Composition/information on ingredients

Chemical Name	Trade names and Synonyms	CAS-NO	Content(%)
α-(2-Aminomethylethyl)-ω-(2-aminomethylethoxy)poly[oxy(methyl-1,2-ethanediyl)]	α-(2-Aminomethylethyl)-ω-(2-aminomethylethoxy)poly[oxy(methyl-1,2-ethanediyl)]	9046-10-0	41～51
Trade secret	-	-	8～18
Benzyl alcohol	Benzyl alcohol	100-51-6	6～16
Formaldehyde polymer with 1,3-benzenedimethanamine and phenol	Formaldehyde polymer with 1,3-benzenedimethanamine and phenol	57214-10-5	7～17
Dodecylphenol, mixed isomers	Dodecylphenol, mixed isomers	27193-86-8	3～13
2,4,6-Tris[(dimethylamino)methyl]phenol	2,4,6-Tris[(dimethylamino)methyl]phenol	90-72-2	4～14
1,2-Ethanediamine, N,N'-bis(2-aminoethyl)-	1,2-Ethanediamine, N,N'-bis(2-aminoethyl)-	112-24-3	5～15
1,3-Bis (Aminomethyl) benzene	1,3-Bis (Aminomethyl) benzene	1477-55-0	2～12
Phenol	Phenol	108-95-2	1～10

4. First-aid measures

A. Eye Contact : Flush exposed eyes with plenty of water for more than 15minutes.
If irritation, pain, swelling, tears or glaring happens, take medical assistant immediately
Do not rub your eyes.
If you wear a contact lenses, remove them first.

B. Skin Contact : Remove exposed clothing, and wash off exposed area with soap and water.
If symptoms like irritation or pain occurs, take medical assistant immediately.
Wash off with soap and water for more than 15 minutes. And take medical assistant immediately.
If symptoms like redness or irritation occurs, take medical assistant immediately.
Wash carefully after handling.
Wear gloves while washing the patient and avoid contact with exposed clothes.

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

Remove contaminated clothing and shoes, and isolate it.
Take a medical assistant immediately.

D. Ingestion Contact : Please be advised by doctor whether induction of vomit is demanded or not.
vomiting occurs, keep head below hips to prevent aspiration into lungs.
If ingested large quantity, take medical assistant.
Take proper medical assistant by symtoms.
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
Flush mouth with water immediately.

E. Notes to Physician : Notify medical personnel of contaminated situations and have them take appropriate protective measures.

5. Fire-fighting measures

A. Suitable (Unsuitable) extinguishing media
○ Suitable extinguishing media : Powder extinguishing agent, gaseous Extinguishing Agent, and regular foam.
○ (Unsuitable) extinguishing media : Avoid digestion using direct water.
Avoid use waterjet as fire extinguishing agent.
Avoid extinguishing fire with halogenting agent.
○ Case of big fire : Spread large amount of the extinguishing agent as a mist form with staying against wind.
Stay away more than 800m to avoid tank explosion.
Use appropriate protective device depend on the situation.

B. Specific hazards arising from the chemical
○ Pyrolysate : Carbon dioxide, toxic carbon compounds/Nitrogen compounds/sulfur compounds
Irritating and highly toxic gases may produced during the combustion by pyrolysis or combustion itself.
○ Fire and Explosion danger : Risk of medium-sized fire.
Aqueous (Exclude water-soluble one) products does not have risk of fire or explosion hazard by itself.
Vapor may be released to the ignition source and ignited.
May form explosive mixture at or above ignition point
Container may explode when heating
Leakages may fire / explosion hazard and could be easily ignited by heat, sparks or flames.
Vapors may explode indoors, outdoors, and in drains

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 : Use appropriate extinguishing agents to catch fire.
If there is no risk, moving containers away from fire.
Cooling containers with water long time after extinguish fire.
Block the area except for the fire-suppression personnel.
Protect others from access and prohibit access to dangerous areas.
Tell the fire department, location of the fire and the hazardous features.
Use an unmanned fire extinguishing device, in case of large-sized fire. If not, leave it to burn.
Avoid inhalation of the substance or combustion products.
Do not approach if the tank is on fire.

6. Accidental release measures

A. Personal Precautions, protective equipment and emergency procedures

○ Personal Precautions, protective equipment : Appropriate protective equipment / protection / protective gloves
○ Emergency procedures : Take an action to block the leakage if there is no risk.
Spray water to reduce amount of steam.
The operator should wear appropriate protective equipment (see section "8. Exposure Protection and Personal Protection") to avoid contact with the eyes and skin and inhalation.

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

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

7. Handling and storage

A. Precautions for safe handling : Keep or handle followed by Dangerous goods Safety Management Act
Ground for preventing the static discharge
Seal the container for minimizing the petroleum steam
Use local ventilations and a full ventilation system when handling
Wash carefully after handling.
Avoid contact with prohibited materials in mixture.
Do not handle until read and understood all safety precautions.
Do not inhale vapor for long-term or repeatedly.
Avoid contact with heat, sparks, flames or other sources of ignition.
Do not take contaminated clothings away from the work area.
Storing with combustible substances such as stained clothes or paper may cause fire by spontaneous ignition. Thus do not stack it, and keep it in a non-flammable container with cap filled with water and dispose it.

B. Conditions for safe storage, including any incompatibilities : Because of evaporation and contamination concerns, airtight the container and store in a well-ventilated building.
Avoid direct sunlight while storing outdoor.
Storage temperature: 5 ~ 35 ℃
Avoid strong oxidizing agents, acid.
Store at appropriate temperature according to the isolation location, freezing caution, high temperature body caution.
No open fire.
Store in a cool, dry, well-ventilated area.
Check periodically for leaks
Store in accordance with all current law and regulations.
Store in original container only.
Prevent static electricity and do not store near heat sources.
Collect in an airtight container to dispose.
Store away from waterworks and sewers.

8. Exposure controls/personal protection

A. Exposure Limits

○ α-(2-Aminomethylethyl)-ω-(2-aminomethylethoxy)poly[oxy(methyl-1,2-ethanediyl)]
- ACGIH : NO DATA
- Biological exposure indices : NO DATA

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

○ Benzyl alcohol
- ACGIH : NO DATA
- Biological exposure indices : NO DATA

○ Formaldehyde polymer with 1,3-benzenedimethanamine and phenol
- ACGIH : NO DATA
- Biological exposure indices : NO DATA

○ Dodecylphenol, mixed isomers
- ACGIH : NO DATA
- Biological exposure indices : NO DATA

○ 2,4,6-Tris[(dimethylamino)methyl]phenol
- ACGIH : NO DATA
- Biological exposure indices : NO DATA

○ 1,2-Ethanediamine, N,N'-bis(2-aminoethyl)-
- ACGIH : NO DATA
- Biological exposure indices : NO DATA

○ 1,3-Bis (Aminomethyl) benzene
- ACGIH : NO DATA
- Biological exposure indices : NO DATA

○ Phenol
- ACGIH : NO DATA
- Biological exposure indices : While urinating Phenol(with hydrolysis) : 250 mg/g creatinine(After work)

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
Unknown concentration or other life threating danger is imminent: Supplied air respirator(Hybrid airline respirator), and Self contained breathing apparatus(full face)
Consider warning properties before use.
Respiratory protection may be needed, while frequent use or heavy exposure.
Respiratory protection is ranked in order from minimum to maximum
If there is possibility of direct contact or exposure to these substances should wear a authorized dust-proof mask or respirator for organic compounds
○ Eye protection : Install washing facilities and an emergency washing facilities close to workplace.
Let workers do wear the safety glasses in case hazard caused by mist may be expected.
If there is possibility of direct contact or exposure to these substances should wear authorized safty glasses or mask.
○ Hand protection : If there is possibility of direct contact or exposure to these substances should wear authorized safety gloves for chemicals.
○ Skin protection : If there is a possibility of direct contact or exposure to the substance Wear protective clothing for chemical substances

9. Physical and chemical properties

A. Appearance : Liquid

B. Odor : Specific 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(℃) : 74

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 : (Water) Insoluble

M. Vapour density : NO DATA

N. Specific gravity : 1.0 ±0.3

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

P. Autoignition temperature(℃) : NO DATA

Q. Decomposition temperature(℃) : NO DATA

R. Viscosity : NO DATA

S. Molecular weight : NO DATA

10. Stability and reactivity

A. Chemical stability : NO DATA

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

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
- ○ α-(2-Aminomethylethyl)-ω-(2-aminomethylethoxy)poly[oxy(methyl-1,2-ethanediyl)]
  - Acute toxicity
    Oral : LD50 = 242 mg/kg Rat
    Dermal : LD50 = 360 mg/kg rabbit

Inhalation : LD50 = 360 mg/kg rabbit
- Skin corrosion/irritation : In case of contact with skin may cause burns
- Serious eye damage/irritation : Medium using rabbit eye irritation or irritation test results
- 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 : Inhalation airway irritation
- 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

○ Benzyl alcohol
- Acute toxicity
Oral : LD50 = 1230 mg/kg Rat
Dermal : LD50 = 2000 mg/kg Rabbit
Inhalation : LD50 = 2000 mg/kg Rabbit
- Skin corrosion/irritation : usuallystimulus(100mg, 24H, rabbit)
- Serious eye damage/irritation : Non-irritating(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

○ Formaldehyde polymer with 1,3-benzenedimethanamine and phenol
- 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

○ Dodecylphenol, mixed isomers
- 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

○ 2,4,6-Tris[(dimethylamino)methyl]phenol
- Acute toxicity
  Oral : LD50 = 1200 mg/kg Rat
  Dermal : LD50 = 1280 mg/kg Rat
  Inhalation : LD50 = 1280 mg/kg Rat
- Skin corrosion/irritation : severe stimulus
- Serious eye damage/irritation : Severe irritation
- 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

○ 1,2-Ethanediamine, N,N'-bis(2-aminoethyl)-
- Acute toxicity
  Oral : LD50 = 2500 mg/kg Rat
  Dermal : LD50 = 805 mg/kg Rabbit
  Inhalation : LD50 = 805 mg/kg Rabbit
- Skin corrosion/irritation : severestimulus(490mg, rabbit), severestimulus(5mg, 24H, rabbit)
- Serious eye damage/irritation : Stimulation of normal(20mg, 24 시간, rabbit), Severe stimulation(49mg, 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

○ 1,3-Bis (Aminomethyl) benzene
- Acute toxicity
  Oral : LD50 = 980 mg/kg Rat
  Dermal : LD50 = 2000 mg/kg Rabbit
  Inhalation : LD50 = 2000 mg/kg Rabbit
- Skin corrosion/irritation : On the skin of guinea pigs causticity, rat subcutaneous bleeding skin necrosis
- Serious eye damage/irritation : in corrosion test in rats using
- Respiratory sensitization : NO DATA
- Skin sensitization : Sensitization in guinea pigs test positive rate of 70%
- Carcinogenicity
  IARC : NO DATA
  OSHA : NO DATA
  ACGIH : NO DATA
  NTP : NO DATA
  EU CLP : NO DATA
- Germ cell mutagenicity : Micronucleus test result Negative
- Reproductive toxicity : Micronucleus test : negative
- STOT-single exposure : NO DATA
- STOT-repeated exposure : Test results using rats oral administration in Category 2 of the reference range of serious toxic effect is no longer
- Aspiration hazard : NO DATA

○ Phenol
- Acute toxicity
  Oral : LD50 317 mg/kg Rat
  Dermal : LD50 670 mg/kg Rat
  Inhalation : LD50 670 mg/kg Rat
- Skin corrosion/irritation : Rabbit Skin corrosion, and as reported in humans.
- Serious eye damage/irritation : Rabbits eyes appear in the full opacity of the cornea irritation test results.
- Respiratory sensitization : NO DATA

- Skin sensitization : Test using guinea pig negative result, the test results using a mouse negative
- Carcinogenicity
  IARC : Group 3
  OSHA : NO DATA
  ACGIH : A4
  NTP : NO DATA
  EU CLP : NO DATA
- Germ cell mutagenicity : Chromosome aberration test positive
- Reproductive toxicity : Chromosome aberration test positive
- STOT-single exposure : NO DATA
- STOT-repeated exposure : Increased mortality resulting from cardiovascular disease in humans, vomiting, diarrhea, abdominal pain, hemolytic anemia, methemoglobin hyperlipidemia, renal degeneration, tubular necrosis, nipple cells appear bleeding. Reduced number of red blood cells in laborat
- Aspiration hazard : NO DATA

12. Ecological information

A. Ecotoxicity

○ α-(2-Aminomethylethyl)-ω-(2-aminomethylethoxy)poly[oxy(methyl-1,2-ethanediyl)]
- Fish : NO DATA
- Crustaceans : NO DATA
- Algae : NO DATA

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

○ Benzyl alcohol
- Fish : LC50 = 10 ㎎/ℓ 96 hr
- Crustaceans : NO DATA
- Algae : NO DATA

○ Formaldehyde polymer with 1,3-benzenedimethanamine and phenol
- Fish : NO DATA
- Crustaceans : NO DATA
- Algae : NO DATA

○ Dodecylphenol, mixed isomers
- Fish : NO DATA
- Crustaceans : NO DATA
- Algae : NO DATA

○ 2,4,6-Tris[(dimethylamino)methyl]phenol
- Fish : LC50 = 447.821 ㎎/ℓ 96 hr
- Crustaceans : LC50 = 28.198 ㎎/ℓ 48 hr
- Algae : EC50 = 34.812 ㎎/ℓ 96 hr

○ 1,2-Ethanediamine, N,N'-bis(2-aminoethyl)-
- Fish : NO DATA
- Crustaceans : NO DATA
- Algae : NO DATA

○ 1,3-Bis (Aminomethyl) benzene
- Fish : NO DATA
- Crustaceans : NO DATA
- Algae : EC50 = 14 ㎎/ℓ 72 hr

○ Phenol
- Fish : LC50 10.9 ㎎/ℓ 96 hr
- Crustaceans : LC50 3.1 ㎎/ℓ 48 hr
- Algae : EC50 370 ㎎/ℓ 96 hr

B. Persistence and degradability

○ α-(2-Aminomethylethyl)-ω-(2-aminomethylethoxy)poly[oxy(methyl-1,2-ethanediyl)]
- Persistence : NO DATA
- Degradability : NO DATA

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

○ Benzyl alcohol
- Persistence : log Kow = 1.1
- Degradability : NO DATA

○ Formaldehyde polymer with 1,3-benzenedimethanamine and phenol
- Persistence : NO DATA
- Degradability : NO DATA

○ Dodecylphenol, mixed isomers
- Persistence : NO DATA
- Degradability : NO DATA

○ 2,4,6-Tris[(dimethylamino)methyl]phenol
- Persistence : log Kow = 0.77
- Degradability : NO DATA

○ 1,2-Ethanediamine, N,N'-bis(2-aminoethyl)-
- Persistence : NO DATA
- Degradability : NO DATA

○ 1,3-Bis (Aminomethyl) benzene
- Persistence : NO DATA
- Degradability : NO DATA

○ Phenol
- Persistence : log Kow 1.46
- Degradability : NO DATA

C. Bioaccumulative potential

○ α-(2-Aminomethylethyl)-ω-(2-aminomethylethoxy)poly[oxy(methyl-1,2-ethanediyl)]
- Bioaccumulative potential : NO DATA
- Biodegration : NO DATA

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

○ Benzyl alcohol
- Bioaccumulative potential : NO DATA
- Biodegration : Biodegradability = 94 (%) 28 day (Aerobic, Activated Sludge)

○ Formaldehyde polymer with 1,3-benzenedimethanamine and phenol
- Bioaccumulative potential : NO DATA
- Biodegration : NO DATA

○ Dodecylphenol, mixed isomers
- Bioaccumulative potential : NO DATA
- Biodegration : NO DATA

○ 2,4,6-Tris[(dimethylamino)methyl]phenol
- Bioaccumulative potential : BCF = 3.162
- Biodegration : NO DATA

○ 1,2-Ethanediamine, N,N'-bis(2-aminoethyl)-
- Bioaccumulative potential : NO DATA
- Biodegration : NO DATA

○ 1,3-Bis (Aminomethyl) benzene
- Bioaccumulative potential : NO DATA
- Biodegration : Biodegradability = 22 (%)

○ Phenol
- Bioaccumulative potential : NO DATA
- Biodegration : 85 (%)

D. Mobility in soil
○ α-(2-Aminomethylethyl)-ω-(2-aminomethylethoxy)poly[oxy(methyl-1,2-ethanediyl)]
▷ NO DATA
○ Trade secret
▷ NO DATA
○ Benzyl alcohol
▷ NO DATA
○ Formaldehyde polymer with 1,3-benzenedimethanamine and phenol
▷ NO DATA
○ Dodecylphenol, mixed isomers
▷ NO DATA
○ 2,4,6-Tris[(dimethylamino)methyl]phenol
▷ NO DATA
○ 1,2-Ethanediamine, N,N'-bis(2-aminoethyl)-
▷ NO DATA
○ 1,3-Bis (Aminomethyl) benzene
▷ NO DATA
○ Phenol
▷ NO DATA

E. Other adverse effects
○ α-(2-Aminomethylethyl)-ω-(2-aminomethylethoxy)poly[oxy(methyl-1,2-ethanediyl)]
▷ NO DATA
○ Trade secret
▷ NO DATA
○ Benzyl alcohol
▷ NO DATA
○ Formaldehyde polymer with 1,3-benzenedimethanamine and phenol
▷ NO DATA
○ Dodecylphenol, mixed isomers
▷ NO DATA
○ 2,4,6-Tris[(dimethylamino)methyl]phenol
▷ NO DATA
○ 1,2-Ethanediamine, N,N'-bis(2-aminoethyl)-
▷ NO DATA
○ 1,3-Bis (Aminomethyl) benzene
▷ NO DATA
○ Phenol
▷ NO DATA

13. Disposal considerations

A. Disposal methods : Disposal material should keep in the airtighted container, and consign according to Waste Mateial Management Act
Pre-treat with oil-water separation method when it is available.
Recycle the recycleable materials, such as organic solvents, and then incinerate the residue at high temperature.
To prevent environmental pollution, dispose it to a licensed waste disposal company.

B. Special precautions for disposal : Bussiness that discharge business waste shall process them selves, or delegate to waste treatment processor, recycler, or waste treatment operator.
Dispose of waste in accordance with all applicable laws and regulations.

14. Transport information

A. UN number(IMDG CODE/IATA DGR) : 2735

B. Proper shipping name : AMINES, LIQUID, CORROSIVE, N.O.S. or POLYAMINES, LIQUID, CORROSIVE, N.O.S.
(α-(2-Aminomethylethyl)-ω-(2-aminomethylethoxy)poly[oxy(methyl-1,2-ethanediyl)])

C. Hazard class : 8

D. Packing group(IMDG CODE/IATA DGR) : III

E. Marine pollutant : be applicable

F. Special precautions for user related to transport or transportation measures
Local transport follows in accordance with Dangerous goods Safety Management
Package and transport follow in accordance with Department of Transportation
○ EmS FIRE SCHEDULE : F-A
○ EmS SPILLAGE SCHEDULE : S-B

15. Regulatory information

○ α-(2-Aminomethylethyl)-ω-(2-aminomethylethoxy)poly[oxy(methyl-1,2-ethanediyl)]
- 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

○ 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

○ Benzyl alcohol
- 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

○ Formaldehyde polymer with 1,3-benzenedimethanamine and phenol
- 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

○ Dodecylphenol, mixed isomers
- 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

○ 2,4,6-Tris[(dimethylamino)methyl]phenol
- 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

○ 1,2-Ethanediamine, N,N'-bis(2-aminoethyl)-
- 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

○ 1,3-Bis (Aminomethyl) benzene
- 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

○ Phenol
- 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) : 453.599 kg 1000 lb
  ▷ EPCRA Section 302 (40CFR355.30) : pertinent
  ▷ EPCRA Section 304 (40CFR355.40) : pertinent
  ▷ EPCRA Section 313 (40CFR372.65) : pertinent
- Rotterdam Convention listed ingredients : NO DATA
- Stockholm Convention listed ingredients : NO DATA
- Montreal Protocol listed ingredients : NO DATA

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 : 2020-01-13

C. Revision number and Last date revised : 4.(2023-11-27)

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