

1. Identification

- A. Product name : WDT-1005 THINNER (Hydro Purge)
- B. Recommended Use and Restriction on Use
- ☐ General use : Paint Thinner
 - ☐ Restriction on use : Restricted to use other than recommended use
- C. Manufacturer / Supplier / distributor information
- ☐ Company name : NOROO BEE Chemical Co., Ltd.
 - ☐ Address : 111 ,Baekseokgongdan 1-ro Seobuk-gu, Cheonan-si Chungcheongnam-do, Republic of Korea (331-979)
 - ☐ Emergency telephone number : +82-41-620-6200

2. Hazard identification

- A. GHS Classification
- Flammable liquids Category 3
 - Acute toxicity (oral) Category 4
 - Acute toxicity (dermal) Category 3
 - Acute toxicity (inhalation: gas) Category 3
 - Serious eye damage/irritation Category 2A
 - Specific target organ toxicity(Single exposure) Category 3
 - Specific target organ toxicity(Repeated exposure) Category 2
 - Skin corrosion/irritation Category 2
- B. GHS label elements
- ☐ Hazard symbols



- ☐ Signal words : DANGER
- ☐ Hazard statements :
 - H226 Flammable liquid and vapour
 - H302 Harmful if swallowed
 - H311 Toxic in contact with skin
 - H331 Toxic if inhaled
 - H319 Causes serious eye irritation
 - H335+H336 May cause respiratory irritation, May cause drowsiness and dizziness.
 - H373 Prolonged or repeated exposure may cause damage to the liver, testes, skin, respiratory system, blood and central nervous system of the body (Refer Section SDS 11)
 - H315 Causes skin irritation
- ☐ Precautionary statements
 - Prevention
 - P210 Keep away from heat/sparks/open flames/hot surfaces. ? No smoking.
 - P242 Use only non-sparking tools. Flammable liquids (chapter 2.6) 1, 2, 3
 - P264 Wash hands thoroughly after handling.
 - P270 Do not eat, drink or smoke when using this product.
 - P280 Wear protective gloves/protective clothing/eye protection/face protection.
 - P261 Do not breathe dust/fume/gas/mist/vapours/spray.

P271 Use only outdoors or in a well-ventilated area.
P233 Keep container tightly closed.
P240 Ground/bond container and receiving equipment.
P241 Use explosion-proof electrical/ventilating/lighting/equipment.
P243 Take precautionary measures against static discharge.
P261 Avoid breathing dust/fume/gas/mist/vapours/spray.
P260 Do not breathe dust/fume/gas/mist/vapours/spray.

- Response

P303+P361+P353 IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower.
P301+P312 IF SWALLOWED: Call a POISON CENTER or doctor/physician if you feel unwell.
P330 Rinse mouth.
P302+P350 IF ON SKIN: Gently wash with plenty of soap and water.
P310 Immediately call a POISON CENTER or doctor/physician.
P322 Specific measures
P361 Remove/Take off immediately all contaminated clothing.
P363 Wash contaminated clothing before reuse.
P304+P340 IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing.
P311 Call a POISON CENTER or doctor/physician.
P321 Specific treatment
P370+P378 In case of fire: Use Suitable extinguishing media for extinction(Refer Section MSDS 5).
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.
P312 Call a POISON CENTER or doctor/physician if you feel unwell.
P314 Get medical advice/attention if you feel unwell.
P302+P352 IF ON SKIN: Wash with plenty of soap and water.
P332+P313 If skin irritation occurs: Get medical advice/attention.
P362 Take off contaminated clothing and wash before reuse.

- Storage

P403+P235 Store in a well-ventilated place. Keep cool.
P405 Store locked up.
P403+P233 Store in a well-ventilated place. Keep container tightly closed.

- 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)

Chemical Name	NFPA grade	Health	Flammability	Reactivity
2-Butoxyethanol		3	2	0
Diethylene glycol monobutyl ether		2	2	0
2-Ethylhexanol		2	2	0

3. Composition/information on ingredients

Chemical Name	Trade names and Synonyms	CAS-NO	Content(%)
2-Butoxyethanol	2-Butoxyethanol	111-76-2	82~92
Diethylene glycol monobutyl ether	Diethylene glycol monobutyl ether	112-34-5	10~20

2-Ethylhexanol	2-Ethylhexanol	104-76-7	1 ~ 10
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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 inhaled 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 symptoms. 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 : Risk of medium-sized fire.
- 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 °C 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

- 2-Butoxyethanol
 - ACGIH : NO DATA
 - Biological exposure indices : NO DATA
- Diethylene glycol monobutyl ether
 - ACGIH : NO DATA
 - Biological exposure indices : NO DATA
- 2-Ethylhexanol
 - 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 : Use the personal protect respirator for organic solvent or higher level of capacity when workers are supposed to be exposed under unsuitable respiratory working condition, or longer period exposure than standard level. Respirators should be authorized by Korea Occupational Safety and Health Agency
- Eye protection : Let workers do wear the safety glasses in case hazard caused by mist may be expected. Install washing facilities and an emergency washing facilities close to workplace. Use the respirator for organic solvent or higher level.
- Hand protection : Wear the chemical protective gloves Do the workers wear the impermeable protective gloves made from rubber/PVC due to skin irritation may be supposed by chronicle and long period exposure.

○ Skin protection : Wear appropriate chemical protective clothing. Work after wearing the impermeable protective apron made by rubber/PVC in case hazard caused by exposure or spill, wear the impermeable whole body protective clothing if needed.

9. Physical and chemical properties

- A. Appearance : Clear 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(℃) : 24
- 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 : NO DATA
- M. Vapour density : NO DATA
- N. Specific gravity : 0.8~1.2
- O. Partition coefficient of n-octanol/water : NO DATA
- P. Autoignition temperature(℃) : NO DATA
- Q. Decomposition temperature(℃) : NO DATA
- R. Viscosity : 9~12sec
- 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 combustible 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
 - 2-Butoxyethanol
 - Acute toxicity

- Oral : LD50 = 1746 mg/kg Rat
- Dermal : LD50 = 99 mg/kg Rabbit
- Inhalation : LD50 = 99 mg/kg Rabbit
- Skin corrosion/irritation : skin Irritation test result Irritation
- Serious eye damage/irritation : Using the rabbit eye irritation test results - Severe irritation
- Respiratory sensitization : NO DATA
- Skin sensitization : Guinea pig test results negative, human patch test results in negative
- Carcinogenicity
 - IARC : Group 3
 - OSHA : NO DATA
 - ACGIH : A3
 - NTP : NO DATA
 - EU CLP : NO DATA
- Germ cell mutagenicity : (Using mouse and rat bone marrow cells) Micronucleustest Negative,
- Reproductive toxicity : (Using mouse and rat bone marrow cells) Micronucleustest Negative,
- STOT-single exposure : Throat irritation in humans are being observed. Appears neurotoxicity tests decreased activity decreased in rats and jerk reaction. Appears inhalation exposure test results suppress the central nervous system in rats and rabbits.
- STOT-repeated exposure : The toxic effects appear in the blood (red blood cells) by inhalation exposure in animals.
- Aspiration hazard : NO DATA
- Diethylene glycol monobutyl ether
 - Acute toxicity
 - Oral : LD50 = 5660 mg/kg Rat
 - Dermal : LD50 = 2700 mg/kg Rabbit
 - Inhalation : LD50 = 2700 mg/kg Rabbit
 - Skin corrosion/irritation : non-irritating(rabbit)
 - Serious eye damage/irritation : Stimulation of normal(20mg, 24 시간, rabbit), Severe stimulation(20mg, 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
- 2-Ethylhexanol
 - Acute toxicity
 - Oral : LD50 = 1516 mg/kg Rat
 - Dermal : LD50 = 1970 mg/kg Rabbit
 - Inhalation : LD50 = 1970 mg/kg Rabbit
 - Skin corrosion/irritation : rabbit / high stimulus
 - Serious eye damage/irritation : Rabbit / stimulus

- Respiratory sensitization : NO DATA
- Skin sensitization : Non-sensitize (human)
- Carcinogenicity
 - IARC : NO DATA
 - OSHA : NO DATA
 - ACGIH : NO DATA
 - NTP : NO DATA
 - EU CLP : NO DATA
- Germ cell mutagenicity : in vitro/Negative
- Reproductive toxicity : in vitro/Negative
- STOT-single exposure : Does not seem to have a severe impact on a person's career exposure, headache, dizziness, fatigue, epic year, is reported to cause mild blood pressure and (PATTY (5th, 2001)), animal studies in the mouse, rat, a guinea pig 1 not once inhaled dose tested (1.8 mg / L
- STOT-repeated exposure : Rat / toxic effects observed
- Aspiration hazard : NO DATA

12. Ecological information

A. Ecotoxicity

- ☐ 2-Butoxyethanol
 - Fish : LC50 = 1250 mg/ℓ 96 hr
 - Crustaceans : LC50 = 5.4 mg/ℓ 96 hr
 - Algae : NO DATA
- ☐ Diethylene glycol monobutyl ether
 - Fish : LC50 = 1300 mg/ℓ 96 hr
 - Crustaceans : NO DATA
 - Algae : NO DATA
- ☐ 2-Ethylhexanol
 - Fish : LC50 = 17.1 mg/ℓ 96 hr *Leuciscus idus*
 - Crustaceans : EC50 = 39 mg/ℓ 48 hr *Daphnia magna*
 - Algae : EC50 = 11.5 mg/ℓ 72 hr *Scenedesmus subspicatus*

B. Persistence and degradability

- ☐ 2-Butoxyethanol
 - Persistence : log Kow = 0.83
 - Degradability : NO DATA
- ☐ Diethylene glycol monobutyl ether
 - Persistence : NO DATA
 - Degradability : BOD5/COD = 0.12
- ☐ 2-Ethylhexanol
 - Persistence : log Kow = 2.73 (Estimates)
 - Degradability : NO DATA

C. Bioaccumulative potential

- ☐ 2-Butoxyethanol
 - Bioaccumulative potential : NO DATA
 - Biodegradation : Biodegradability = 96 (%)
- ☐ Diethylene glycol monobutyl ether
 - Bioaccumulative potential : NO DATA
 - Biodegradation : Biodegradability = 58 (%) 28 day (Aerobic, Activated Sludge, Easily decomposed)
- ☐ 2-Ethylhexanol
 - Bioaccumulative potential : BCF = 13
 - Biodegradation : Biodegradability = 55 (%) 17 day

- D. Mobility in soil
 - ☐ 2-Butoxyethanol
 - ▷ NO DATA
 - ☐ Diethylene glycol monobutyl ether
 - ▷ NO DATA
 - ☐ 2-Ethylhexanol
 - ▷ NO DATA
- E. Other adverse effects
 - ☐ 2-Butoxyethanol
 - ▷ NO DATA
 - ☐ Diethylene glycol monobutyl ether
 - ▷ NO DATA
 - ☐ 2-Ethylhexanol
 - ▷ NO DATA

13. Disposal considerations

- A. Disposal methods : Disposal material should keep in the airtight container, and consign according to Waste Material 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

- A. UN number : 1263
- B. Proper shipping name : Paint (including paint, lacquer, enamel, colorants, shellac solutions, varnish, polish, liquid filler and liquid lacquer sealer) or related materials (including paint diluent and reductant).
- C. Hazard class : 3
- D. Packing group : III
- E. Marine pollutant : be applicable
- F. Special precautions for user related to transport or transportation measures
 - ☐ EmS FIRE SCHEDULE : F-E
 - ☐ EmS SPILLAGE SCHEDULE : S-E

15. Regulatory information

- ☐ 2-Butoxyethanol
 - 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

- Diethylene glycol monobutyl ether
 - 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
- 2-Ethylhexanol
 - 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

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 : 2018-08-21

C. Revision number and Last date revised : -

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