



SAFETY DATA SHEET

Power seal lacquer spray - RED OXID



1. IDENTIFICATION

A. Product name

- Power seal lacquer spray - RED OXID

B. Recommended use and restriction on use

- General use : For coloring metal, cement, furniture etc.
- Restriction on use : Do not use it against a flame.

C. Distributor information

o Distributor Information

- Company name TOOLWAY INDUSTRIES LTD.
- Address 280 Hunter's Valley Road, Woodbridge, ON, Canada L4H 3V9.
www.toolway.com

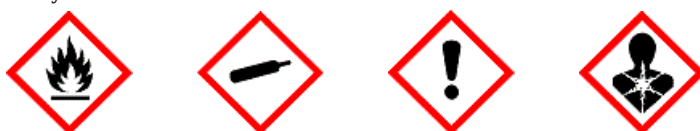
2. HAZARD IDENTIFICATION

A. GHS Classification

- Flammable gases : Category1
- Gases under pressure : Liquefied gas
- Flammable aerosol: Category 1
- Flammable liquids : Category1
- Acute toxicity (inhalation: vapor): Category 5
- Skin corrosion/irritation : Category2
- Serious eye damage/irritation : Category2
- Carcinogenicity : Category2
- Reproductive toxicity : Category2
- Specific target organ toxicity(Single exposure) : Category3(Narcotic effects)
- Specific target organ toxicity(Repeated exposure) : Category1
- Aspiration hazard : Category1

B. GHS label elements

o Hazard symbols



o Signal words

- Danger

o Hazard statements

- H220 extremely flammable gas
- H222 Extremely flammable aerosol
- H225 Highly flammable liquid and vapor
- H229 May explode when heated.
- H280 High-pressure gas: May explode when heated.
- H312 Harmful in contact with skin.
- H315 Causes skin irritation.
- H317 May cause an allergic skin reaction.
- H319 Causes serious eye irritation.
- H332 Harmful if inhaled.
- H350 May cause cancer.
- H361 Suspected of causing harm to the fetus or fertility.
- H373 May cause damage to organs through prolonged or repeated exposure (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.
- P210 Keep away from heat/sparks/open flames/hot surfaces. No smoking.
- P230 Keep wetted with designated appropriate material by Manufacturer / supplier
- P233 Keep container tightly closed.
- P234 Keep only in original container
- P240 Ground/bond container and receiving equipment.
- P241 Use explosion-proof electrical/ventilating/lighting/equipment.
- P242 Use only non-sparking tools. Flammable liquids (chapter 2.6) 1, 2, 3
- P243 Take precautionary measures against static discharge.
- P250 Do not subject to grinding/shock/friction.
- P260 Do not breathe gas/mist/vapours/spray.
- P261 Avoid breathing gas/mist/vapours/spray.
- P264 Wash hands thoroughly after handling.
- P271 Use only outdoors or in a well-ventilated area.
- P272 Contaminated work clothing should not be allowed out of the workplace.
- P280 Wear protective gloves/protective clothing/eye protection/face protection.

2) Response

- P302+P352 IF ON SKIN: Wash with plenty of soap and water.
- P303+P361+P353 IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower.
- 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.
- P312 Call a POISON CENTER or doctor/physician if you feel unwell.
- P321 Specific treatment
- P332+P313 If skin irritation occurs: Get medical advice/attention.
- P333+P313 If skin irritation or rash occurs: Get medical advice/attention.
- P337+P313 If eye irritation persists: Get medical advice/attention.
- P362 Take off contaminated clothing and wash before reuse.
- P370+P372+P380+P373 In case of fire: Risk of explosion. Evacuate immediate area. If flames reach explosive material, do not attempt to extinguish fire.
- P370+P378 In case of fire: Use Suitable extinguishing media for extinction(Refer Section MSDS 5).
- P377 Leaking gas fire: Do not extinguish, unless leak can be stopped safely.
- P381 Eliminate all ignition sources if safe to do so.

3) Storage

- P401 Store in accordance with applicable regulations.
- P403 Store in a well-ventilated place.
- P403+P233 Store in a well-ventilated place. Keep container tightly closed.
- P403+P235 Store in a well-ventilated place. Keep cool.
- P405 Store locked up.
- P410+P403 Protect from sunlight. Store in a well-ventilated place.

4) Disposal

- P501 Dispose of contents/container in accordance with local/regional/national/international regulation

3. COMPOSITION/INFORMATION ON INGREDIENTS

Chemical Name	Trade names and Synonyms	CAS No.	Content(%)
Ethanol	Alcohol anhydrous ; Alcohol dehydrated ; Ethyl alcohol ; Ethanol solution ; Alcohol ; Fermentation alcohol ; Algrain ; Ethyl hydrate ; Ethyl hydroxide	64-17-5	1 ~ 3
Propane	Dimethylmethane ; Propyl hydride ; n-Propane ; Propyldihydride ;	74-98-6	9 ~ 11

o-Xylene	o-Xylene ; 1,2-Dimethylbenzene ; o-Dimethyl benzene ; 1,2-Xylene ; Benzene, 1,2-dimethyl- ; XYLENE, ORTHO- ; ortho.- Xylene ; 1,2-Dimethylbenzene ; 1,2-Xylene ; 2-Methyltoluene ;	95-47-6	1 ~ 3
Ethylbenzene	Benzene, ethyl- ; Ethyl benzene ; Ethylbenzol ; Phenylethane ;	100-41-4	1 ~ 3
p-Xylene	p-Xylene ; 1,4-Dimethylbenzene ; p-Xylol ; Benzene, 1,4-dimethyl- ; XYLENE, PARA- ; 1,4- DIMETHYLBENZENE ; XYLENE, P- ; .para.-Xylene ; 1,4-Xylene ; 4-Methyltoluene ;	106-42-3	1 ~ 3
m-xylene	m-Xylene ; 1,3-Dimethylbenzene ; m-Xylol ; Benzene, 1,3- dimethyl- ; XYLENE, M- ; ; Meta-Xylene. ; 1,3- DIMETHYLBENZENE ; .meta.- Xylene ; 1,3-Xylene ; Benzene, 1,3-dimethyl ;	108-38-3	1 ~ 3
Methylcyclohexane	Cyclohexane, methyl- ; 1- Methylcyclohexane ; Hexahydrotoluene ; Toluene hexahydride ; Cyclohexylmethane	108-87-2	1 ~ 3
Toluene	Methylbenzene ; Methylbenzol ; Phenyl methane ; Methacide ; Toluol ; 1-Methylbenzene	108-88-3	1 ~ 3
Octane	Octane ; n-Octane ; Octane (all isomers)	111-65-9	1 ~ 3
Nonane	-	111-84-2	1 ~ 3
Oxybismethane	Methane, 1,1'-oxybis- ; Methane, oxybis- ; Methoxymethane ; Dimethyl oxide ; Methyl ether ; Oxybismethane ; Methyl oxide ;	115-10-6	25 ~ 28
n-Heptane	Dipropyl methane ; Heptyl hydride ;	142-82-5	1 ~ 3
3-Methylhexane	-	589-34-4	0.1 ~ 0.3
3-Methylheptane	-	589-81-1	1 ~ 3
1,1-Dimethylcyclohexane	-	590-66-9	1 ~ 3
2-Methylhexane	-	591-76-4	1 ~ 3
Diiron trioxide	Iron oxide (Fe ₂ O ₃) ; Anhydrous iron oxide ; Pigment red 101	1309-37-1	1 ~ 3
Limestone	Calcium carbonate ; Calcite ; Marble	1317-65-3	1 ~ 3
Xylene	Xylol ; Methyltoluene	1330-20-7	1 ~ 3
Ethylcyclopentane	-	1640-89-7	1 ~ 3
Ethyl cyclohexane	-	1678-91-7	0.1 ~ 0.3
Kerosine	Kerosine (petroleum) ;	8008-20-6	1 ~ 3
Talc	Talcum	14807-96-6	1 ~ 3
Naphtha (petroleum), light straight-run	-	64741-46-4	3 ~ 5
Naphtha (petroleum), hydrotreated heavy	Naphtha	64742-48-9	9 ~ 11
Rosin, maleated polymer with glycerol	-	68038-41-5	1 ~ 3
Fatty acids, soya polymers with glycerol, maleic anhydride, pentaerythritol and phthalic anhydride	-	68390-19-2	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.
- Go to the hospital immediately if symptoms(flare, irritate) occur.
- 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.
- Wash contaminated clothing thoroughly before re-using.
- Accidental contact with liquefied gas or refrigerated liquefied gas may cause burn, severe mayhem and perfrigeration, so please take emergency medical action.
- Get medical attention immediately.
- Go to the hospital immediately if symptoms(flare, irritate) occur.
- In case of accidental contact with liquefied gas or refrigerated liquefied gas, warm up the contact part with lukewarm water.
- 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

- high-pressure gas; May explode when heated.

C. Special protective actions for firefighters

- Withdraw immediately in case of rising sound from venting safety devices or discoloration of tank.
- Notify your local firestation and inform the location of the fire and characteristics hazard.
- 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.
- Vapor or gas is burned at distant ignition sources can be spread quickly.
- Due to the extremely low flash point, irrigating fire extinguishing may be less effective when put out a fire.
- Leaking gas fire: do not extinguish, unless leak can be stopped safely.
- Remove sources of ignition.

6. ACCIDENTAL RELEASE MEASURES

A. Personal precautions, protective equipment and emergency procedures

- Wear proper personal protective apparatus as indicated in Section 8 and avoid skin contact and inhalation.
- Must work against the wind, let the upwind people to evacuate.

- Move container to safe area from the leak area.
- Do not direct water at spill or source of leak.
- 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.
- Small leak: sand or other non-combustible material, please let use absorption.
- Wipe off the solvent.
- Dike for later disposal.
- Do not use plastic containers.
- Prevent the influx to waterways, sewers, basements or confined spaces.
- Spilled material should be treated as a potential risk of waste collected.

7. HANDLING AND STORAGE

A. Precautions for safe 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
- Get the manual before use.
- Do not inhale the steam prolonged or repeated.
- Avoid contact with heat, sparks, flame or other ignition sources.
- Contaminated work clothing should not be allowed out of the workplace.
- Handling only authorized person.

B. Conditions for safe storage, including any incompatibilities

- Do not use damaged containers.
- Do not apply direct heat.
- Store according to current laws and regulations
- Avoid direct sunlight.
- Keep sealed when not in use.
- By specifying a storage area for carcinogenic substances.
- Collected them in sealed containers.
- Store away from water and sewer.
- Store in well ventilated area.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

A. Exposure limits

- **ACGIH TLV**
 - [Ethanol] : STEL, 1000 ppm (1880 mg/m3)
 - [Propane] : asphyxiant
 - [o-Xylene] : TWA 100 ppm (434 mg/m3), STEL 150 ppm (651 mg/m3)
 - [Ethylbenzene] : TWA, 20 ppm (87 mg/m3)
 - [p-Xylene] : TWA 100 ppm (434 mg/m3), STEL, 150 ppm (651 mg/m3)
 - [m-xylene] : TWA 100 ppm (434 mg/m3), STEL, 150 ppm (651 mg/m3)
 - [Methylcyclohexane] : TWA, 400 ppm (1610 mg/m3)
 - [Toluene] : TWA 20 ppm (75 mg/m3)

- [Octane] : TWA, 300 ppm (1401 mg/m³)
- [Nonane] : TWA, 200 ppm (1048 mg/m³)
- [n-Heptane] : TWA, 400 ppm (1640 mg/m³) STEL, 500 ppm (2050 mg/m³)
- [3-Methylhexane] : TWA, 400 ppm (1640 mg/m³) STEL, 500 ppm (2050 mg/m³)
- [2-Methylhexane] : TWA, 400 ppm (1640 mg/m³) STEL, 500 ppm (2050 mg/m³)
- [Diiron trioxide] : TWA, 5 mg/m³, Repirable particulate mass
- [Xylene] : TWA 100 ppm (434 mg/m³), STEL, 150 ppm (651 mg/m³)
- [Kerosine] : TWA, 200 mg/m³, Total hydrocarbon vapor Skin
- [Talc] : TWA 2 mg/m³, Respirable particulate matter (containing no asbestos and <1% crystalline silica)

○ **OSHA PEL**

- [Ethanol]:1000ppm 1900mg/m³
- [Propane]:1000ppm 1800mg/m³
- [Ethylbenzene]:100ppm 435mg/m³
- [Methylcyclohexane]:500ppm 2000mg/m³
- [Toluene]: 200 ppm, C 300 ppm
- [Octane]:500ppm 2350mg/m³
- [n-Heptane]:500ppm 2000mg/m³
- [Diiron trioxide]: 10 mg/m³ (fume)
- [Diiron trioxide]: 15 mg/m³ (Total dust), 5 mg/m³ (Respirable fraction)
- [Limestone]: 15 mg/m³ (Total dust), 5 mg/m³ (Respirable fraction)
- [Xylene]:100ppm 435mg/m³
- [Talc]: 20 mppcf (containing no asbestos, respirable dust), 0.1 fiber/cm³ TWA, 1.0 fiber/cm³ Excursion Limit (30 minutes)(containing asbestos)

B. Engineering controls

- Business owner is recommended to maintain below recommended exposure limits for the working place with general exhaust of gas/vapour/mist/fume.

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.
- Any chemical cartridge respirator with organic vapor cartridge(s).
- Any chemical cartridge respirator with a full facepiece and organic vaporcartridge(s).
- Any air-purifying respirator with a full facepiece and an organic vapor canister.
- 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 chemical resistant glove.

○ **Skin protection**

- Wear appropriate chemical resistant protective clothing.

○ **Others**

- Not available

9. PHYSICAL AND CHEMICAL PROPERTIES

A. Appearance	
- Appearance	Liquid(Viscous liquid)
- Color	Red oxid
B. Odor	Organic solvent odor
C. Odor threshold	Not available
D. pH	Not available
E. Melting point/Freezing point	Not available

F. Initial Boiling Point/Boiling Ranges	Not available
G. Flash point	Not available
H. Evaporation rate	Not available
I. Flammability(solid, gas)	Not available
J. Upper/Lower Flammability or explosive limits	Not available
K. Vapour pressure	Not available
L. Solubility	Not available
M. Vapour density	Not available
N. Specific gravity(Relative density)	0.90±0.05
O. Partition coefficient of n-octanol/water	Not available
P. Autoignition temperature	Not available
Q. Decomposition temperature	Not available
R. Viscosity	Not available
S. Molecular weight	Not available

* Reference

Dimethyl ether

A. Appearance	
- Appearance	Gas
- Color	Transparency
B. Odor	Ether or odor
C. Odor threshold	Not available
D. pH	Not available
E. Melting point/Freezing point	-141.5 °C
F. Initial Boiling Point/Boiling Ranges	-23.6 °C
G. Flash point	- 80 °C
H. Evaporation rate	Not available
I. Flammability(solid, gas)	Not available
J. Upper/Lower Flammability or explosive limits	26.7 / 3.4%
K. Vapour pressure	5.12 hPa at 20 °C
L. Solubility	2.4 / 100ml
M. Vapour density	1.6
N. Specific gravity(Relative density)	0.61
O. Partition coefficient of n-octanol/water	0.1
P. Autoignition temperature	350 °C
Q. Decomposition temperature	Not available
R. Viscosity	Not available
S. Molecular weight	46.1

Propane

A. Appearance	
- Appearance	Gas , Liquefied gas
- Color	Odorless
B. Odor	unique odor
C. Odor threshold	Not available
D. pH	Not available
E. Melting point/Freezing point	-189.7 °C
F. Initial Boiling Point/Boiling Ranges	-42 °C
G. Flash point	-105 °C
H. Evaporation rate	Not available
I. Flammability(solid, gas)	Flammable gas
J. Upper/Lower Flammability or explosive limits	9.5 / 2.1 %
K. Vapour pressure	840kPa (at 25 °C)
L. Solubility	(Water solubility : 62.4mg/l at 25 °C Solvent availability : Availability : Pure alcohol, Ether, Chloroform, Benzene, turpentine)
M. Vapour density	1.55 ((Air=1))
N. Specific gravity(Relative density)	0.5853 (at -45 C (water=1))

	O. Partition coefficient of n-octanol/water	2.36
	P. Autoignition temperature	450 °C
	Q. Decomposition temperature	Not available
	R. Viscosity	Not available
	S. Molecular weight	44.11

10. STABILITY AND REACTIVITY

A. Chemical Stability

- high-pressure gas; May explode when heated.
- May form explosive mixture.

B. Possibility of hazardous reactions

- Contact with other combustible material may cause fire.
- Cylinders exposed to fire may vent and release flammable gas.

C. Conditions to avoid

- Avoid contact with incompatible materials and condition.
- Avoid : Accumulation of electrostatic charges, Heating, Flames and hot surfaces
- Avoid contact with heat, sparks, flame or other ignition sources.

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 irritation
 - 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
 - [Ethanol] : LD50 = 6200 mg/kg Rat (HSDB)
 - [o-Xylene] : rat LD50=3608 mg/kg
 - [Ethylbenzene] : LD50 = 3500 mg/kg Rat (NITE)
 - [p-Xylene] : LD50 3523 mg/kg rat (ECHA)
 - [m-xylene] : LD50 6602 mg/kg Rat (ECHA)
 - [Methylcyclohexane] : LD50 >3200 mg/kg Rat (RTECS), LD50 1200 mg/kg mouse (RTECS, NITE)
 - [Toluene] : LD50 5580 mg/kg Rat (EU Method B.1) (ECHA)
 - [Octane] : LD50 > 5000 mg/kg Rat (GLP, ECHA)
 - [n-Heptane] : LD50 >5000 mg/kg Rat (ECHA)
 - [Diiron trioxide] : LD50 > 10000 mg/kg Rat (IUCLID)
 - [Xylene] : LD50=3523 mg/kg rat (EU Method B1) (ECHA)
 - [Kerosine] : LD50 > 5000 mg/kg Rat (No deaths OECD Guideline 402, GLP)
 - [Talc] : LD50 >5,000 mg/kg rat (GLP, ECHA)
 - [Naphtha (petroleum), light straight-run] : LD50 > 5000 mg/kg Rat (GLP, ECHA)

- [Naphtha (petroleum), hydrotreated heavy] : LD50 > 15000 mg/kg Rat (IUCLID)

* Dermal

- Product (ATEmix) : 2000mg/kg < ATEmix <= 5000mg/kg

- [o-Xylene] : LD50 14100 mg/kg rabbit

- [Ethylbenzene] : LD50 = 15400 mg/kg Rabbit (NITE)

- [m-xylene] : 1000 mg/kg < LD50 <= 2000mg/kg

- [Methylcyclohexane] : LD50 > 86700 mg/kg Rabbit (NITE), LD50 >2000 mg/kg Guinea pig (OECD Guideline 402)(ECHA)

- [Toluene] : LD50 >5000 mg/kg Rabbit (ECHA)

- [Octane] : LD50 > 2000 mg/kg Rabbit (GLP, ECHA)

- [n-Heptane] : LD50 >2000 mg/kg Rabbit (ECHA)

- [Xylene] : LD50 >4350 mg/kg Rabbit (IUCLID) LD50 12126 mg/kg Rabbit (isomer: m-xylene)

- [Kerosine] : LD50 > 2000 mg/kg Rabbit (NLM: ChemIDPlus)

- [Talc] : LD50 >2,000 mg/kg rat (GLP, ECHA)

- [Naphtha (petroleum), light straight-run] : LD50 > 2000 mg/kg Rabbit (GLP, ECHA)

- [Naphtha (petroleum), hydrotreated heavy] : LD50 > 3160 mg/kg Rabbit (IUCLID)

* Inhalation

- Product (ATEmix) : 10.0mg/L < ATEmix <= 20.0mg/L

- [Ethanol] : LC50 = 59.59 mg/L/4hr Rat (HSDB)

- [Propane] : LC50 142500 ppm/4hr Rat (570000 ppm/15min)

- [o-Xylene] : LC50 27.4 mg/L/4 hr Rat

- [Ethylbenzene] : LC50 = 17.4 mg/L/4 hr Rat (4000 ppm/4hr)(EHC, ASTDR)

- [p-Xylene] : LC50 19.76 mg/L/4 hr Rat (4550 ppm) (HSDB)

- [m-xylene] : 10 mg/L < LC50 <= 20 mg/L

- [Methylcyclohexane] : LC50 26.1 mg/ℓ/4 hr (36.9 mg/L/2hr)(NITE), LC50 >26.3 mg/ℓ 1 hr Mouse(ECHA)

- [Toluene] : LC50 >20 mg/ℓ Rat (OECD TG 403) (ECHA)

- [Octane] : LC50 > 23.36 mg/ℓ 4 hr Rat (OSHIRI), LC50 >24.88 mg/L/4hr (ECHA)

- [Nonane] : LC50 16.8 mg/L/4 hr Rat

- [Oxybismethane] : gas LC50 163619 ppm/4 hr Rat (308.5 mg/L/4H)(IUCLID)

- [n-Heptane] : LC50 = 53 mg/ℓ 4 hr Rat (NITE(2006))

- [Diiron trioxide] : dust LC50 5.05 mg/ℓ 4 hr Rat (ECHA)

- [Xylene] : LC50 5922 ppm 4 hr Rat (25.713 mg/L EPA OPP 81-3, GLP)(ECHA)

- [Kerosine] : vapor LC50 >5.28 mg/ℓ 4 hr Rat (no death OECD Guideline 403, GLP)

- [Talc] : LC50 >2.1 mg/L/4hr Rat, Magnesium hydroxide (GLP, ECHA)

- [Naphtha (petroleum), light straight-run] : LC50 >5.61 mg/L/4hr (GLP, ECHA)

o Skin corrosion/irritation

- Causes skin irritation

o Serious eye damage/irritation

- Causes serious eye irritation

o Respiratory sensitization

- Not available

o Skin sensitization

- Not available

o Carcinogenicity

* IARC

- [Ethanol] : Group 1

- [Ethylbenzene] : Group 2B

- [Toluene] : Group 3

- [Diiron trioxide] : Group 3

- [Xylene] : Group 3

- [Talc] : Group 1 (Talc(containing asbestos fibers))

- [Talc] : Group 3 (Talc not containing asbestos or asbestiform fibres)

- [Talc] : Group 2B (Talc-based body powder (perineal use of))

* OSHA

- Not available

* ACGIH

- [Ethanol] : A3

- [o-Xylene] : A4
- [Ethylbenzene] : A3
- [p-Xylene] : A4
- [m-xylene] : A4
- [Toluene] : A4
- [Diiron trioxide] : A4
- [Xylene] : A4
- [Kerosine] : A3
- [Talc] : A1 (Talc(containing asbestos fibers))
- [Talc] : A4 (Talc(containing no asbestos fibers))
- * **NTP**
 - Not available
- * **EU CLP**
 - [Naphtha (petroleum), light straight-run] : Carc. 1B (Note P)
 - [Naphtha (petroleum), hydrotreated heavy] : Carc. 1B (Note P)
- **Germ cell mutagenicity**
 - May cause genetic defects
- **Reproductive toxicity**
 - Suspected of damaging fertility or the unborn child
- **STOT-single exposure**
 - May cause drowsiness and dizziness.
 - May cause respiratory irritation.
- **STOT-repeated exposure**
 - May cause damage to organs through prolonged or repeated exposure
- **Aspiration hazard**
 - May be fatal if swallowed and enters airways

12. ECOLOGICAL INFORMATION

A. Ecotoxicity

- **Fish**
 - [Ethanol] : LC50 = 42 mg/ℓ 96 hr Oncorhynchus mykiss (ECOTOX)
 - [Propane] : LC50 100 mg/ℓ 96 hr ((Species : Fish TLM)) (IUCLID)
 - [o-Xylene] : LC50 16.4 mg/ℓ 96 hr
 - [Ethylbenzene] : LC50 5.1 mg/ℓ 96 hr (ECHA)
 - [p-Xylene] : LC50 2.6 mg/ℓ 96 hr Other (ECHA)
 - [m-xylene] : LC50 8.4 mg/ℓ 96 hr Other (ECHA)
 - [Methylcyclohexane] : LC50 2.07 mg/ℓ 96 hr Oryzias latipes(ECHA)
 - [Toluene] : LC50 5.5 mg/ℓ 96 hr Oncorhynchus kistutch (ECHA)
 - [n-Heptane] : LC50 = 375 mg/ℓ 96 hr Oreochromis mossambicus (ECOTOX)
 - [3-Methylhexane] : LC50 2.416 mg/ℓ 96 hr (Estimate)
 - [1,1-Dimethylcyclohexane] : LC50 1.368 mg/ℓ 96 hr (Estimate)
 - [2-Methylhexane] : LC50 = 2.438 mg/ℓ 96 hr (Estimate)
 - [Diiron trioxide] : LC0 ≥50000 mg/ℓ 96 hr other(Danio rerio)(ECHA)
 - [Xylene] : LC50=3.3mg/L 96 hr (NITE)
 - [Ethylcyclopentane] : LC50 3.0 mg/ℓ 96 hr (Estimate)
 - [Ethyl cyclohexane] : LC50 0.922 mg/ℓ 96 hr (Estimate)
 - [Talc] : LC50 100000 mg/ℓ 24 hr Brachydanio rerio (IUCLID)
 - [Naphtha (petroleum), hydrotreated heavy] : LC50 = 2200 mg/ℓ 96 hr Pimephales promelas (IUCLID)
- **Crustaceans**
 - [Ethanol] : EC50 = 2 mg/ℓ 48 hr Daphnia magna (ECOTOX)
 - [Propane] : LC50 52.157 mg/ℓ 48 hr (Estimate)
 - [Ethylbenzene] : LC50 2.4 mg/ℓ ~ 1.8 mg/ℓ 48 hr Mysidopsis bahia(EC50 48hr >5.2mg/L, EPA 1985, GLP)
 - [p-Xylene] : LC50 3.6 mg/ℓ 24 hr Other (ECHA)
 - [m-xylene] : EC50 4.7 mg/ℓ 24 hr Other (ECHA)
 - [Methylcyclohexane] : EC50 0.326 mg/ℓ 48 hr Daphnia magna(ECHA), LC50 3.3 mg/ℓ 96 hr (NITE)

- [Toluene] : EC50 3.78mg/L 48hr (ECHA)
- [Octane] : EC50 0.18 mg/ℓ 48 hr (NITE)
- [n-Heptane] : EC50 0.64 mg/L 48hr (ECHA)
- [3-Methylhexane] : LC50 1.754 mg/ℓ 48 hr (Estimate)
- [1,1-Dimethylcyclohexane] : LC50 1.044 mg/ℓ 48 hr (Estimate)
- [2-Methylhexane] : LC50 = 1.769 mg/ℓ 48 hr (Estimate)
- [Diiron trioxide] : EC50 >100 mg/ℓ 48 hr(ECHA)
- [Xylene] : LC50 3.6 mg/ℓ 24 hr (OECD TG202) (ECHA)
- [Ethylcyclopentane] : LC50 2.141 mg/ℓ 48 hr (Estimate)
- [Ethyl cyclohexane] : LC50 1.141 mg/ℓ 48 hr (Estimate)
- [Talc] : LC50 = 94983.781 mg/ℓ 48 hr
- [Naphtha (petroleum), hydrotreated heavy] : LC50 = 2.6 mg/ℓ 96 hr (Species: Chaetogammarus marinus) (IUCLID)

○ **Algae**

- [Propane] : LC50 32.252 mg/ℓ 96 hr (Estimate)
- [o-Xylene] : ErC50 0.8 mg/ℓ 72 hr Selenastrum (NITE: MOE Eco-Toxicity Tests of Chemicals (1996) and others)
- [Ethylbenzene] : EC50 3.6 mg/ℓ 96 hr (EPA 1985, GLP)
- [p-Xylene] : EC50 4.06 mg/ℓ 72 hr Other (ECHA)
- [m-xylene] : EC50 4.9 mg/ℓ 72 hr Other (ECHA)
- [Methylcyclohexane] : ErC50 0.134 mg/ℓ 72 hr Pseudokirchneriella subcapitata (ECHA)
- [n-Heptane] : EL50 4.338 mg/ℓ 72 hr (ECHA)
- [3-Methylhexane] : EC50 1.750 mg/ℓ 96 hr (Estimate)
- [1,1-Dimethylcyclohexane] : EC50 1.205 mg/ℓ 96 hr (Estimate)
- [2-Methylhexane] : EC50 = 1.761 mg/ℓ 96 hr (Estimate)
- [Xylene] : ErC50 4.06 mg/ℓ 73 hr (OECD TG201, GLP) (ECHA)
- [Ethylcyclopentane] : EC50 2.030 mg/ℓ 96 hr (Estimate)
- [Ethyl cyclohexane] : EC50 0.804 mg/ℓ 96 hr (Estimate)
- [Talc] : LC50 = 48545.539 mg/ℓ
- [Naphtha (petroleum), light straight-run] : EC50 6.5 mg/ℓ 72 hr Selenastrum capricornutum (IUCLID)

B. Persistence and degradability

○ **Persistence**

- [Propane] : log Kow 2.36
- [o-Xylene] : log Kow 3.12 (NITE: PHYSPROP Database, 2005)
- [Ethylbenzene] : log Kow 3.6 (ECHA)
- [p-Xylene] : log Kow 3.15 (ECHA)
- [m-xylene] : log Kow 3.15 (ECHA)
- [Methylcyclohexane] : log Kow 3.88 (ECHA)
- [Toluene] : 2.73 log Kow (20 °C) (ECHA)
- [Octane] : log Kow 5.18 (NITE)
- [Oxybismethane] : log Kow 0.1 (ICSC)
- [n-Heptane] : log Kow 4.5 (ICSC)
- [3-Methylhexane] : log Kow 3.71 (NLM;ChemIDPlus)
- [3-Methylheptane] : log Kow 4.2 (NITE)
- [1,1-Dimethylcyclohexane] : log Kow 4.05 (NLM)
- [2-Methylhexane] : log Kow = 3.71 (Estimate)
- [Diiron trioxide] : log Kow = 0.97 (Estimate)
- [Xylene] : log Kow=3.16 (NITE)
- [Ethylcyclopentane] : log Kow 3.59 (NLM)
- [Ethyl cyclohexane] : log Kow 4.56
- [Talc] : log Kow -1.50 (Estimate)
- [Naphtha (petroleum), light straight-run] : log Kow 2.1 ~ 6 (Estimate)
- [Naphtha (petroleum), hydrotreated heavy] : log Kow = 2.1 ~ 6 (Estimate)

○ **Degradability**

- [Ethanol] : BOD5/COD = 0.57 (IUCLID)
- [o-Xylene] : BOD5/COD 0.56 (IUCLID)

C. Bioaccumulative potential

o Bioaccumulative potential

- [Propane] : BCF 13 (HSDB)
- [o-Xylene] : BCF 21.4 10 ((20 °C), Anguilla japonica) (IUCLID)
- [Ethylbenzene] : BCF 1
- [m-xylene] : BCF 14.8 (HSDB)
- [Methylcyclohexane] : BCF 321 (NITE)
- [3-Methylhexane] : BCF 130 (Estimate)
- [3-Methylheptane] : BCF 274.3 (Estimate)
- [1,1-Dimethylcyclohexane] : BCF 217.3 (Estimate)
- [2-Methylhexane] : BCF = 129.4 (Estimate)
- [Xylene] : BCF25.9 (ECHA)
- [Ethylcyclopentane] : BCF 109.1 (Estimate)
- [Ethyl cyclohexane] : BCF 647.4 (Estimate)

o Biodegradation

- [Ethanol] : Biodegradability = 75 (%) 20 day (Aerobic, Other, Easily decomposed) (IUCLID)
- [Propane] : 65.7 (%) 35 day
- [o-Xylene] : 100 (%) 12 day ((Aerobic, Other)) (IUCLID)
- [Ethylbenzene] : 70-80% 28 day (ISO 14593 CO2, GLP)
- [p-Xylene] : 90% 28 day (ECHA)
- [m-xylene] : 90 % 28 day (ECHA)
- [Methylcyclohexane] : 0 % 28 day (OECD Guideline 301 D, GLP)(ECHA), BOD: 0% (NITE)
- [Toluene] : 80 % 20 day (Readily biodegradable) (ECHA)
- [Oxybismethane] : 5 (%) 28 day (IUCLID)
- [n-Heptane] : 70 % 10 day (O2 Consumption)
- [3-Methylhexane] : Degradability - no potential for degradation and high potential for in vivo accumulation
- [3-Methylheptane] : Fast biodegradable (BIOWIN 6) (Estimate)
- [1,1-Dimethylcyclohexane] : Degradability (BIOWIN 2) (Estimate)
- [2-Methylhexane] : Fast biodegradable (BIOWIN 6)(Estimate)
- [Xylene] : 90 % 28 day (OECD TG301F, GLP)(ECHA)
- [Ethylcyclopentane] : BIOWIN 5 (Estimate)
- [Ethyl cyclohexane] : 0 (%) 28 day (NITE)
- [Kerosine] : 58.6 % 28 day (non-biodegradable, (OECD Guideline 301 FP)
- [Naphtha (petroleum), hydrotreated heavy] : Biodegradability = 10 (%) 28 day (Aerobic, Activated Sludge, Domestic wastewater, Does not decompose easily)

D. Mobility in soil

- [Ethanol] : Koc = 1
- [p-Xylene] : Koc 246~540 (HSDB)
- [m-xylene] : Koc 166 (HSDB)
- [Oxybismethane] : Koc 27
- [n-Heptane] : Koc 239.7 (calculated) (ECHA)
- [3-Methylhexane] : Koc 211 (Estimates)
- [3-Methylheptane] : Koc 4413 (Can be adsorbed in the soil)
- [1,1-Dimethylcyclohexane] : Koc 3270 (Can be adsorbed in the soil)
- [2-Methylhexane] : Koc = 1658 (Can be adsorbed in the soil)(Estimate)
- [Xylene] : log Kow = 3.12 (measured) (ortho), 3.2 (measured) (meta), 3.15 (measurements) (p) (5)
- [Ethylcyclopentane] : Koc 3.115
- [Kerosine] : Koc 50000 ~ 670

E. Other adverse effects

- Not available

13. DISPOSAL CONSIDERATIONS

A. Disposal methods

- Since more than two kinds of designated waste is mixed, it is difficult to treat separately, 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 dispose by oneself or entrust it to a waste disposer, a person who recycles other's waste or establishes and operates waste disposal facilities.
- Dispose of waste in accordance with all applicable laws and regulations.

14. TRANSPORT INFORMATION

A. UN No. (IMDG CODE/IATA DGR)

- 1950

B. Proper shipping name

- AEROSOLS, FLAMMABLE

C. Hazard Class

- 2.1

D. IMDG CODE/IATA DGR Packing group

- Not applicable

E. Marine pollutant

- 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 : F-D (Flammable gases)
- EmS SPILLAGE SCHEDULE : S-U (Gases (flammable, toxic or corrosive))

15. REGULATORY INFORMATION

A. National and/or international regulatory information

○ POPs Management Law

- Not applicable

○ Information of EU Classification

* Classification

- [Ethanol] : H225
- [Propane] : H220
- [o-Xylene] : H226, H332, H312, H315
- [Ethylbenzene] : H225, H332
- [p-Xylene] : H226, H332, H312, H315
- [m-xylene] : H226, H332, H312, H315
- [Methylcyclohexane] : H225, H304, H315, H336, H411
- [Toluene] : H225, H361d, H304, H373, H315, H336
- [Octane] : H225, H304, H315, H336, H410
- [Oxybismethane] : H220
- [n-Heptane] : H225, H304, H315, H336, H410
- [3-Methylhexane] : H225, H304, H315, H336, H410
- [3-Methylheptane] : H225, H304, H315, H336, H410
- [2-Methylhexane] : H225, H304, H315, H336, H410
- [Xylene] : H226, H332, H312, H315
- [Kerosine] : H304
- [Naphtha (petroleum), light straight-run] : H350, H340, H304
- [Naphtha (petroleum), hydrotreated heavy] : H350, H340, H304

- **U.S. Federal regulations**
 - * **OSHA PROCESS SAFETY (29CFR1910.119)**
 - Not applicable
 - * **CERCLA Section 103 (40CFR302.4)**
 - [o-Xylene] : 453.599 kg 1000 lb
 - [Ethylbenzene] : 453.599 kg 1000 lb
 - [p-Xylene] : 45.3599 kg 100 lb
 - [m-xylene] : 453.599 kg 1000 lb
 - [Toluene] : 453.599 kg 1000 lb
 - [Xylene] : 45.3599 kg 100 lb
 - * **EPCRA Section 302 (40CFR355.30)**
 - Not applicable
 - * **EPCRA Section 304 (40CFR355.40)**
 - Not applicable
 - * **EPCRA Section 313 (40CFR372.65)**
 - [o-Xylene] : Applicable
 - [Ethylbenzene] : Applicable
 - [p-Xylene] : Applicable
 - [m-xylene] : Applicable
 - [Toluene] : Applicable
 - [Xylene] : 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

- 2024-12-31

C. Revision number and Last date revised

D. Other

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