MATERIAL SAFETY DATA SHEET

DEAHEUNG CHEMICAL CO., LTD. www.dhcbond.com

PGM

Product Name	D-5800

1. Product and Company Identification

A. Product Name: D-5800

B. Recommended use of the chemical

- Recommended use of the chemical: Bond the Metal, wood, rubber, HPM, plastics etc.
- Restrictions on use of the product: Do not use for purposes other than adhesive.

C. Manufacturer/Supplier/Distributor Information

- Name: DAEHEUNG CHEMICAL CO., LTD.
- Address: 68, Sandan-ro 64beon-gil, Pyeongtaek-si, Gyeonggi-do, Korea
- Emergency phone number: 82-31-668-1424

2. Hazards identification

A. Hazard·Risk Classification

Flammable Liquid : Category 2

Acute Toxicity (Inhalation:vapor) : Category 4

Skin Corrosion/Irritation : Category 2

Serous Eyes Damage/Eye Irritation : Category 2

Reproductive Toxicology : Category 2

Target Organ Toxicity (Single Exposure) : Category 3(Respiratory tract irritation)

Target Organ Toxicity (Single Exposure) : Category 1

Target Organ Toxicity (Single Exposure) : Category 3(Narcotic effects)

Target Organ Toxicity (Repeated Exposure) : Category 1

Aspiration Harzard : Category 1

Acute hazards to the aquatic environment : category 1

B. Label elements including precautionary statements

- Symbol

- Signal Word: Danger
- Hazard·Risk Statement

H225 Highly flammable liquid and vapour Causes severe skin burns and eye damage

H304 May be fatal if swallowed and enters airways Suspected of damaging fertility or the unborn child

H315 Causes skin irritation

H319 Causes serious eye irritation

H332 Harmful if inhaled

H335 May cause respiratory irritation

H336 May cause drowsiness or dizziness

H361 Suspected of damaging fertility or the unborn child

H370 Causes damage to organs

H372 Causes damage to organs through prolonged or repeated exposure

H400 Very toxic to aquatic life

- Precautionary Statement

Prevention: P201 Obtain special instructions before use

Prevention	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
	P233 Keep container tightly closed
	P240 Ground/bond container and receiving equipment
	P241 Use explosion-proof electrical/ventilating/light/equipment
	P242 Use only non-sparking tool
	P243 Take precautionary measures against static discharge
	P260 Do not breathe dust/fume/gas/mist/vapours/spray
	P261 Avoid breathing dust/fume/gas/mist/vapours/spray
	P264 Wash thoroughly after handling
	P270 Do not eat, drink or smoke when using this product
	P271 Use only outdoors or in a well-ventilated area
	P273 Avoid release to the environment
	P280 Wear protective gloves/protective clothing/eye protection/face protection
	P281 Use personal protective equipment as required
Response	P301+P310 IF SWALLOWED : Immediately call a POISON CENTER or doctor/physician
	P302+P352 IF ON SKIN : Wash with 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
	P307+P311 IF exposed : Call a POISON CENTER or doctor/physician
	P308+P313 IF exposed or concerned : 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
	P321 Specific treatment
	P331 Do NOT induce vomiting
	P332+P313 If skin irritation 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+378 In case of fire: Use dry chemical, CO2, sand, earth, water spray or regular foam for extinction
	P391 Collect spillage
Storage	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
Disposal	P501 Dispose of contents/container to in accordance with local/regional/national/international regulation.

C. Other Hazard·Risk which are not included in the classification criteria (e.g. dust explosion hazard)

	TOLUENE	CYCLO-HEXANE	PARA-3-BUTYLPHENOL-FORMALDEHYDE...	NEOPRENE
Health	2	1	2	1
Fire	3	3	1	1
Reactivity	0	0	0	0

3. Composition/Information on ingredients

Chemical Name	Other name	CAS number	Content(%)
TOLUENE	Methylbenzene Toluol	108-88-3	40~50
CYCLO-HEXANE	Hexahydrobenzene	110-82-7	15~20
PARA-TERTIARY-BUTYLPHENOL-FORMALDEHYDE ...	PHENOL, P-tert-BUTYL-,	25085-50-1	5~15
NEOPRENE	Synthetic rubber	9010-98-4	15~25

4. First aid measures

A. Eye contact	IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses if present and easy to do – continue rinsing.
	If eye irritation persists get medical advice/attention
B. Skin contact	IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower.
	If skin irritation occurs: Get medical advice/attention.
	Remove and isolate contaminated clothing and shoes.
	In case of burns, immediately cool affected skin for as long as possible with cold water. Do not remove clothing if adhering to skin.
	Wash with soap and water.
C. Inhalation	Do NOT induce vomiting.
	Remove victim to fresh air and keep at rest in a position comfortable for breathing.
	Call a POISON CENTER or doctor/physician if you feel unwell.
D. Ingestion	Immediately call a POISON CENTER or doctor/physician.
	Do NOT induce vomiting.
E. Indication of immediate medical attention and notes for physician	Call a POISON CENTER or doctor/physician.
	Ensure that medical personnel are aware of the material(s) involved and take precautions to protect themselves.

5. Fire-Fighting measures

A. Suitable (and unsuitable) extinguishing media	Dry chemical, CO_2, sand, earth, water spray or regular foam.
B. Specific hazards arising from the chemical (e.g. nature of any hazardous combustion products)	Extremely flammable liquid and vapour.
	Those substances designated with a (P) may polymerize explosively when heated or involved in a fire.
	Vapors may travel to source of ignition and flash back.
	Fire may produce irritating, corrosive and/or toxic gases.
	Substance may be transported in a molten form at a temperature that may be above its flash point.
	Containers may explode when heated.
	May be ignited by friction, heat, sparks or flames.
	LIMINATE all ignition sources (no smoking, flares, sparks or flames in immediate area).
	When heated, vapors may form explosive mixtures with air: indoors, outdoors and sewers explosion hazards.
C. Special protective equipment and precautions for fire-fighters	Wear chemical protective clothing that is specifically recommended by the manufacturer. It may provide little or no thermal protection.
	Fight fire with normal precautions from a reasonable distance
	ALWAYS stay away from tanks engulfed in fire.

C. Special protective equipment and precautions for fire-fighters	Withdraw immediately in case of rising sound from venting safety devices or discoloration of tank. Move containers from fire area if you can do it without risk. Fight fire from maximum distance or use unmanned hose holders or monitor nozzles.

6. Accidental release measures

A. Personal precautions, protective equipment and emergency procedures	Avoid breathing dust/fume/gas/mist/vapours/spray ELIMINATE all ignition sources (no smoking, flares, sparks or flames in immediate area). Cover with DRY earth, DRY sand or other non-combustible material followed with plastic sheet to minimize spreading or contact with rain. Isolate spill or leak area immediately for at least 500 meters (1/3 mile) in all directions. Fully encapsulating, vapor protective clothing should be worn for spills and leaks with no fire. All equipment used when handling the product must be grounded. Stop leak if you can do it without risk. Do not touch damaged containers or spilled material unless wearing appropriate protective clothing. Use clean non-sparking tools to collect material and place it into loosely covered plastic containers for later disposal.
B. Environmental precautions and protective procedures	Prevent entry into waterways, sewers, basements or confined areas.
C. Methods and materials for containment and cleaning up	Dike fire-control water for later disposal; do not scatter the material. Absorb or cover with dry earth, sand or other non-combustible material and transfer to containers. Use clean non-sparking tools to collect absorbed material. Dike far ahead of liquid spill for later disposal.

7. Handling and storage

A. Precautions for safe handling	Do not handle until all safety precautions have been read and understood. Use explosion-proof electrical/ventilating/light/equipment. Use only non-sparking tools. Avoid breathing dust/fume/gas/mist/vapours/spray. Wash thoroughly after handling. Do not eat, drink or smoke when using this product. Use only outdoors or in a well-ventilated area. Follow all MSDS/label precautions even after container is emptied because it may retain product residues. Keep cool. Protect from sunlight. All equipment used when handling the product must be grounded. Store in a well ventilated place. Keep container tightly closed Heating may cause a fire or explosion Keep out of low areas. Ventilate closed spaces before entering.
B. Conditions for safe storage (including any incompatibilities)	Keep away from heat/sparks/open flames/hot surfaces – No smoking Store in a well ventilated place. Keep container tightly closed Store in a well ventilated place. Keep cool Do not eat, drink or smoke when using this product

8. Exposure controls & personal protection

A. Control parameters (e.g. occupational exposure limit values, biological limit values)

- Occupational exposure limit values

TOLUENE	TWA - 50ppm 188mg/m^3 STEL - 150ppm 560mg/m^3
CYCLO-HEXANE	TWA - 200ppm 700mg/m^3
PARA-3-BUTHYPHENOL-FORALDEHYDE…	No data available
NEOPRENE	No data available

- ACGIH limit values

TOLUENE	TWA 20 ppm
CYCLO-HEXANE	TWA 100 ppm
PARA-3-BUTHYPHENOL-FORALDEHYDE…	No data available
NEOPRENE	No data available

- Biological limit values

TOLUENE	0.02mg/L(Blood) 0.03mg/L(Urine) 0.3mg/g(Creatine)
CYCLO-HEXANE	No data available
PARA-3-BUTHYPHENOL-FORALDEHYDE…	No data available
NEOPRENE	No data available

B. Appropriate engineering controls	Emergency eye wash fountains and safety showers should be available in the immediate vicinity of any potential exposure. Provide adequate ventilation.

C. Personal protective equipment

- Respiratory protection	The filter class must be suitable for the maximum contaminant concentration(gas/vapour/aerosol/particulates) that may arise when handling the product. If the concentration is exceeded, closed-circuit breathing apparatus must be used!. In case of fire: Wear self contained breathing apparatus.
- Eye protection	Wear eye protection/face protection.
- Hands protection	Wear proper chemical resistant gloves.
- Body protection	Wear proper Protective clothing.

9. Physical and chemical properties

A. Appearance	
Physical state	Viscous liquid
Color	Yellowish
B. Odour	Solvent
C. Odour threshold	No data available
D. pH	Not Applicable
E. Melting point/freezing point	No data available
F. Initial boiling point and boiling range	95.5 ℃ (81~111 ℃)
G. Flashing point	-18 ℃
H. Evaporation rate	No data available
I. Flammability(solid, gas)	No data available
J. Upper/lower flammability or explosive limits	7.71 % / 1.19 %
K. Vapor pressure	49.6
L. Solubility	Not soluble in water
M. Vapor density	Above 2
N. Relative density	0.91±0.05
O Partition coefficient:n-octanol/water	No data available

P. Auto-ignition temperature	369 ℃
Q. Decomposition temperature	No data available
R. Viscosity	6,900~7,100cps (20 ℃)
S. Formula mass	No data available

10. Stability and reactivity

A.Chemical stability and possibility of hazardous reactions	Stable under normal conditions Highly flammable liquid and vapor May be ignited by heat, sparks or flames. Containers may explode when heated. Vapor explosion and poison hazard indoors, outdoors or in sewers. Inhalation or contact with material may irritate or burn skin and eyes. Fire may produce irritating, corrosive and/or toxic gases. Vapors may cause dizziness or suffocation.
B. Conditions to avoid	Keep away from heat/sparks/open flames/hot surfaces - No smoking.
C. Incompatible materials	Irritant, toxic gas Flammable materials
D. Hazardous decomposition products	Fire may produce irritating, corrosive and/or toxic gases. Fire may produce CO, CO2, nitrogen compounds.

11. Toxicological information

A. Information on the likely routes of exposure	No data available
B. Health hazards information	
- Acute toxic	
Oral	
TOLUENE	LD50 2600 ㎎/㎏ Rat
CYCLO-HEXANE	LD50 12705 ㎎/㎏
PARA-3-BUTHYPHENOL-FORALDEHYDE…	No data available
NEOPRENE	LD50 40000 ㎎/㎏ Rat
Dermal	
TOLUENE	LD50 120000 ㎎/㎏ Rat
CYCLO-HEXANE	LD50 > 2000 ㎎/㎏ Rabbit
PARA-3-BUTHYPHENOL-FORALDEHYDE…	No data available
NEOPRENE	No data available
Inhalation	
TOLUENE	LC50 12.5 ㎎/ℓ 4 hr Rat
CYCLO-HEXANE	LC50 70 ㎎/ℓ
PARA-3-BUTHYPHENOL-FORALDEHYDE…	No data available
NEOPRENE	No data available
- Skin corrosive/irritant	
TOLUENE	Based on the evidence of moderate skin irritation caused by toluene in rabbit primary skin irritation test (4 hour exposure) (EU-RAR No. 30, 2003).
CYCLO-HEXANE	There are statements of skin irritation on rabbits and humans (DFGOT vol.13 (1999), EU-RAR (2004), ACGIH (2002), and ICSC (J) (1994)).
PARA-3-BUTHYPHENOL-FORALDEHYDE…	No data available
NEOPRENE	It causes skin irritation.

- Serious eye damage/eye irritation

TOLUENE	Based on the description that the subjects recovered from the damage within 7 days in rabbit eye irritation test conducted in accordance with the OECD test guideline (EU-RAR No. 30, 2003), which suggests that toluene causes mild eye irritation.
CYCLO-HEXANE	Since there was a statement that in rabbits corneal cloudings, iritis, conjunctival hyperemias, and chemosis each are seen reversible (EU-RAR (2004), as well as in animals and in humans irritation is in the eye (PATTY (5th, 2001), EU-RAR (2004), ICSC (J), (1994), HSDB (2005)).
PARA-3-BUTHYPHENOL-FORALDEHYDE…	No data available
NEOPRENE	It causes eye irritation.

- Respiratory sensitization

TOLUENE	No data available
CYCLO-HEXANE	No data available
PARA-3-BUTHYPHENOL-FORALDEHYDE…	No data available
NEOPRENE	No data available

- Skin sensitization

TOLUENE	Based on the results of guinea pig maximization tests (EU-RAR No. 30, 2003) suggesting that toluene causes no skin irritation.
CYCLO-HEXANE	No data available
PARA-3-BUTHYPHENOL-FORALDEHYDE…	No data available
NEOPRENE	No data available

- Carcinogenicity

IARC	
TOLUENE	3
CYCLOHEXANE	No data avaliable
PARA-3-BUTHYPHENOL-FORALDEHYDE…	No data avaliable
NEOPRENE	3
OSHA	
TOLUENE	No data avaliable
CYCLOHEXANE	No data avaliable
PARA-3-BUTHYPHENOL-FORALDEHYDE…	No data avaliable
NEOPRENE	No data avaliable
ACGIH	
TOLUENE	No data avaliable
CYCLOHEXANE	No data avaliable
PARA-3-BUTHYPHENOL-FORALDEHYDE…	No data avaliable
NEOPRENE	No data avaliable
NTP	
TOLUENE	No data avaliable
CYCLOHEXANE	No data avaliable
PARA-3-BUTHYPHENOL-FORALDEHYDE…	No data avaliable
NEOPRENE	No data avaliable
EU CLP	
TOLUENE	No data avaliable
CYCLOHEXANE	No data avaliable

PARA-3-BUTHYPHENOL-FORALDEHYDE…	No data avaliable
NEOPRENE	No data avaliable

- Germ Cell Mutagenicity

TOLUENE	Based on negative data on heritable mutagenicity tests (dominant lethal tests), the absence of data on germ cell mutagenicity and genotoxicity tests in vivo and the positive data on somatic cell mutagenicity tests in vivo (micronucleus tests, chromosome aberration tests), described in EHC 52 (1986), EU-RAR No. 30 (2003), IARC 71(1999)and ATSDR (2000).
CYCLOHEXANE	Based on the fact that there was no result of human over generation epidemiology, over generation mutagenicity test, and the productive cell in vivo mutagenicity test, and based on the negative result in the somatic cell in vivo mutagenicity test (chromosomal aberration test using rat myeloid cells) (DFGOT vol.13 (1999)).
PARA-3-BUTHYPHENOL-FORALDEHYDE…	No data avaliable
NEOPRENE	No data avaliable

- Reproductive toxicity

TOLUENE	Based on the results of human epidemiological studies suggesting increased incidence of natural abortion after toluene exposure, abnormal development and malformation of newborns caused by prenatal toluene abuse and decreased plasma concentrations of luteinizing hormone and testosterone after toluene exposure, described in IRIS Toxiological review (2005), EU-RAR No.30 (2003), IARC 71(1999), IARC 47 (1989), EHC 52 (1986) and ATSDR (2000), the following conclusion by Ng et al. (1992) in EU RAR30 (2003): "the study suggests an increased risk of late spontaneous abortions associated with exposure to toluene at levels around 88 ppm (range 50-150 ppm). The results of this study are used as a basis for the risk characterisation of developmental toxicity in humans,"and the evidence of increased incidences of foetal death and delayed ossification, a decrease and unossification of sternebrae, a shift in rib profile, excess ribs, retarded skeletal development, delayed reflex response, learning disability and early vaginal opening and testes descent at dosing levels not toxic to dams from rat and mouse teratogenicity tests. According to Da-Silva et al.(1991), toluene was accumulated in breast milk, although no developmental toxicity via lactation was observed.
CYCLOHEXANE	The statement that in the dosage with parents' weight decrease, or dosage without the statement about general toxicity of parents, the low weight value of the child at the lactation period and an decrease fetal weight are observed, and the influence to the male genitals (atrophia of testis, the spermatic toxicity) was observed (ACGIH (2002), EU-RAR (2004), DFGOT vol.13 (1999)).
PARA-3-BUTHYPHENOL-FORALDEHYDE…	No data avaliable
NEOPRENE	No data avaliable

- Specific target organ toxicity (single exposure):

TOLUENE	Based on the human evidence including "toluene is rapidly absorbed mainly through inhalation and acts on the central nervous system. Toluene causes fatigue, sleepiness, dizziness and mild respiratory irritation at 50-100 ppm, excitement associated with paresthesia and nausea at 200-400 ppm and central nervous system suppression leading to drunkenness, delirium and abnormal gait at 500-800 ppm" (CERI Hazard Data 96-4, 1997) and "irritation to the eyes, nose and pharynx" (EU-RAR No. 30, 2003) and the evidence from animal studies including "anesthesia" (EU-RAR No. 30, 2003).
CYCLOHEXANE	Although there are many statements that central nerve inhibition is reported in many animals tests, and there is many reports about an anesthetic actions, there is no data of the amount of exposure. In oral administration to rabbits.
PARA-3-BUTHYPHENOL-FORALDEHYDE…	No data avaliable

NEOPRENE	Respiratory tract irritation, if severe, can progress to pulmonary edema which may be delayed in onset up to 24 to 72 hours after exposure in some cases.

- Specific target organ toxicity (repeated exposure)

TOLUENE	Based on the human evidence including "Toluene induces drug dependency, and inhalant abuse of toluene causes chronic central nervous system damage including restricted vision, headache associated with nystagmus and hearing loss, tremor, ataxia and amnesia. Cerebral atrophy was found in CT tests, and renal dysfunction manifested as proteinuria and hematuria was also observed (CERI Hazard Data 96-4, 1997), "hearing loss, changes in brain-stem auditory evoked potential" (ATSDR, 2000) and "hepatic toxicity associated with an increase in SGOT, fatty degeneration of hepatic cells and lymphocytic infiltration (EU-RAR No. 30, 2003).
CYCLOHEXANE	In humans, there is no statement of apparent toxicity development by this substance (ACGIH and (2002),EU-RAR (2004)) and in animal, development of toxicity is not observed with a given dose higher
PARA-3-BUTHYPHENOL-FORALDEHYDE…	No data avaliable
NEOPRENE	No data avaliable

- Aspiration hazard

TOLUENE	Based on the fact that toluene is a hydrocarbon and has a dynamic viscosity of 0.65 mm2/s (25degC) (calculated value).
CYCLOHEXANE	possible to cause chemical pneumonia by misswallowing of the liquid.(ICSC(J), 1999)
PARA-3-BUTHYPHENOL-FORALDEHYDE…	No data avaliable
NEOPRENE	No data avaliable

12. Ecological information

A. Aquatic and terrestrial ecotoxicity

- Fish

TOLUENE	LC50 24 ㎎/ℓ 96 hr Oncorhynchus mykiss
CYCLOHEXANE	No data avaliable
PARA-3-BUTHYPHENOL-FORALDEHYDE…	No data avaliable
NEOPRENE	No data avaliable

- Shellfish

TOLUENE	EC50 11.5 ㎎/ℓ 48 hr Daphnia magna
CYCLOHEXANE	EC50 0.9 ㎎/ℓ 48 hr
PARA-3-BUTHYPHENOL-FORALDEHYDE…	No data avaliable
NEOPRENE	No data avaliable

- Birds

TOLUENE	No data avaliable
CYCLOHEXANE	No data avaliable
PARA-3-BUTHYPHENOL-FORALDEHYDE…	No data avaliable
NEOPRENE	No data avaliable

B. Persistence and degradability

- Persistence

TOLUENE	log Kow 2.73
CYCLOHEXANE	log Kow 3.4
PARA-3-BUTHYPHENOL-FORALDEHYDE…	Not Applicable

NEOPRENE	No data avaliable
- Resolvability	
TOLUENE	No data avaliable
CYCLOHEXANE	No data avaliable
PARA-3-BUTHYPHENOL-FORALDEHYDE…	No data avaliable
NEOPRENE	No data avaliable
C. Bioaccumulative potential	
- Concentration	
TOLUENE	No data avaliable
CYCLOHEXANE	BCF 129
PARA-3-BUTHYPHENOL-FORALDEHYDE…	No data avaliable
NEOPRENE	No data avaliable
- Bio resolvability	
TOLUENE	86 (%) 20 day
CYCLOHEXANE	77 (%) 28 day
PARA-3-BUTHYPHENOL-FORALDEHYDE…	No data avaliable
NEOPRENE	No data avaliable
D. Mobility in soil	
TOLUENE	No data avaliable
CYCLOHEXANE	No data avaliable
PARA-3-BUTHYPHENOL-FORALDEHYDE…	No data avaliable
NEOPRENE	No data avaliable
E. Other adverse effects	
TOLUENE	No data avaliable
CYCLOHEXANE	No data avaliable
PARA-3-BUTHYPHENOL-FORALDEHYDE…	No data avaliable
NEOPRENE	No data avaliable

13. Disposal considerations

A. Disposal method	Dispose according to the related regulations.
B. Disposal precaution	Follow details of related waste managament act.

14. Transport information

A. UN number	1133
B. UN proper shipping name	ADHESIVES containing flammable liquid
C. Transport hazard class:	3
D. Packing group (if applicable)	II
E. Marin pollution (yes/no)	Yes

F. Special precaution which a user to be aware of or needs to comply with in connection with transport or conveyance either within or outside their premises:

F-E, S-D

15. Regulatory information

A. Industrial Safety and Health Act

Management harmful agents	TOLUENE, CYCLOHEXANE
Working environment measurement target material (measurement period: 6 months)	TOLUENE, CYCLOHEXANE

Special medical examination the substance (diagnostic period: 12 months)	TOLUENE, CYCLOHEXANE
Exposure limits set material	TOLUENE, CYCLOHEXANE
PARA-3-BUTYLPHENOL-FORMALDEHYDE …	No data avaliable
NEOPRENE	No data avaliable

B. Toxic Chemical Control Act

TOLUENE	Toxicant
CYCLOHEXANE	No data avaliable
PARA-3-BUTHYPHENOL-FORALDEHYDE…	No data avaliable
NEOPRENE	No data avaliable

C. Dangerous Material Safety Control Act

The 4th type, the 1st petroleum type 200ℓ

D. Wastes Management Act Designated Wastes

E. Other requirements in domestic and other countries

- Domestic regulation

TOLUENE	Not Applicable.
CYCLOHEXANE	Not Applicable.
PARA-3-BUTHYPHENOL-FORALDEHYDE…	Not Applicable.
NEOPRENE	Not Applicable.

- Other countries

USA(OSHA)

TOLUENE	Not Applicable.
CYCLOHEXANE	Not Applicable.
PARA-3-BUTHYPHENOL-FORALDEHYDE…	Not Applicable.
NEOPRENE	Not Applicable.

USA(CERCLA)

TOLUENE	453.599 kg 1000 lb
CYCLO-HEXANE	453.599 kg 1000 lb
PARA-3-BUTHYPHENOL-FORALDEHYDE…	Not Applicable.
NEOPRENE	Not Applicable.

USA(EPCRA 302)

TOLUENE	Not Applicable.
CYCLO-HEXANE	Not Applicable.
PARA-3-BUTHYPHENOL-FORALDEHYDE…	Not Applicable.
NEOPRENE	Not Applicable.

USA(EPCRA 304)

TOLUENE	Not Applicable.
CYCLO-HEXANE	Not Applicable.
PARA-3-BUTHYPHENOL-FORALDEHYDE…	Not Applicable.
NEOPRENE	Not Applicable.

USA(EPCRA 313)

TOLUENE	Applicable.
CYCLO-HEXANE	Applicable.
PARA-3-BUTHYPHENOL-FORALDEHYDE…	Not Applicable.
NEOPRENE	Not Applicable.

USA (Rotterdam Convention material)

TOLUENE	Not Applicable.
CYCLO-HEXANE	Not Applicable.
PARA-3-BUTHYPHENOL-FORALDEHYDE…	Not Applicable.
NEOPRENE	Not Applicable.

USA (Stockholm Convention material)

TOLUENE	Not Applicable.
CYCLO-HEXANE	Not Applicable.
PARA-3-BUTHYPHENOL-FORALDEHYDE…	Not Applicable.
NEOPRENE	Not Applicable.

USA (Substance Montreal Protocol)

TOLUENE	Not Applicable.
CYCLO-HEXANE	Not Applicable.
PARA-3-BUTHYPHENOL-FORALDEHYDE…	Not Applicable.
NEOPRENE	Not Applicable.

EU (Classification)

TOLUENE	F; R11Repr.Cat.3; R63Xn; R48/20-65Xi; R38R67
CYCLO-HEXANE	F; R11Xn; R65Xi; R38R67N; R50-53
PARA-3-BUTHYPHENOL-FORALDEHYDE…	Not Applicable.
NEOPRENE	Not Applicable.

EU (Risk Phrases)

TOLUENE	R11, R38, R48/20, R63, R65, R67
CYCLO-HEXANE	R11, R38, R65, R67, R50/53
PARA-3-BUTHYPHENOL-FORALDEHYDE…	Not Applicable.
NEOPRENE	Not Applicable.

EU (Safety Phrases)

TOLUENE	S2, S36/37, S46, S62
CYCLO-HEXANE	S2, S9, S16, S25, S33, S51, S60, S61, S62
PARA-3-BUTHYPHENOL-FORALDEHYDE…	Not Applicable.
NEOPRENE	Not Applicable.

16. Other information

A. Information source and references

TOLUENE

EU-RAR No.30 (2003)(Oral)

ACGIH (7th; 2001)(Dermal)

EU-RAR No.30 (2003)(Inhalation)

HSDB (2005)(Persistence)

CYCLO-HEXANE

NLM(Oral)

EU-RAR (2004)(Dermal)

EU-RAR (2004)(Shellfish)

ICSC(Persistence)

EU-RAR (2004)(Potential)

PARA-TERTIARY-BUTYLPHENOL-FORMALDEHYDE …

NEOPRENE

Corporate Solution From Thomson Micromedex(http://csi.micromedex.com)(Oral)

Source of data : Korea Occupational Safety and Health Agency (KOSHA)>

B. Issuing date	June 29, 2012
C. Revision number and date	5 / April 25, 2022
D. Others	