1. PRODUCT AND COMPANY IDENTIFICATION.

A) Product Name : 850FR

B) Recommended use and restriction

- Recommended use : Adhesive
- Restriction : N/A

C) Manufacturer/Supplier/Distributor

- Manufacturer : CHEMTROS CO.,Ltd
- Address : #28 Byeolmang-ro,270beon-gil, Danwon-gu, Ansan-si, Gyeonggi-do, KOREA
- Emergency Information : Telephone: +82-31-491-7905
  Fax: 82-31-494-9568

2. HAZARD IDENTIFICATION.

【GHS Classification】

Flammable liquids : Category 2

Skin corrosion / Irritation : Category 2

Serious eye damage / Eye irritation : Category 2

Skin sensitization : Category 1

Carcinogenicity : Category 2

Reproductive toxicity : Category 2

Specific target organ toxicity single exposure : Category 3(Anesthesia, respiratory system stimulation)

Specific target organ toxicity repeat exposure : Category 2

Aspiration hazard : Category 1

【GHS label elements】

【Signal word】 Danger

○ Hazard information

H225 Highly flammable liquid and vapor

H304 Be fatal if swallowed and enters airways that

H315 Causes skin irritation

H319 Causes serious eye irritation

H336 May cause drowsiness or dizziness

H351 Suspected of causing cancer

H361 Suspected of damaging fertility or the unborn child

H373 May cause damage to organs through prolonged or repeated exposure

○ Prevention precautionary statements

-. 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.

P233 Keep container tightly closed.

P240 Ground/bond container and receiving equipment.

P241 Use explosion-proof electrical/ventilating/lighting/equipment.

P242 Use only non-sparking tools.

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.

P271 Use only outdoors or in a well-ventilated area.

P272 Do not take contaminated clothing out of work area.

P273 Do not release to the environment.

P280 Wear protective gloves/protective clothing/eye protection/face protection.

-. Response

P301+P310 IF SWALLOWED: Immediately call a POISON CENTER or doctor/physician.

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 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.

P333+P313 If skin irritation or redness occurs, seek medical advice/attention.

P337+P313 If eye irritation persists: Get medical advice/attention.

P362+P364 Take off contaminated clothing and wash before reuse.

P370+P378 In case of fire: Use fire extinguisher 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 (According to related regulations set forth in)

3. COMPOSITION/INFORMATION ON INGREDIENTS.

Component	Other name	Weight(%)	CAS No.	Remark
Synthetic Rubber	2-Chloro-1,3-butadiene homopolymer	10~20	9010-98-4	
Phenol resin	Phenol polymer with formaldehyde	5~10	9003-35-4	
Chlorinated paraffin	-	3~7	63449-39-8	
Toluene	MethylBenzene	45~55	108-88-3	
Acetone	2-Propanone	3~7	67-64-1	
Cyclo-hexane	Hexahydrobenzene	15~25	110-82-7	
Additive	Silica	1~5	7631-86-9	

4. FIRST AID MEASURES.

A) Inhalation : Remove from exposure immediately. Use a bag valve mask or similar device to perform artificial respiration (rescue breathing) if needed. Get medical attention

B) Skin contact : Remove contaminated clothing, jewelry, and shoes immediately. Wash with soap or mild detergent and large amounts of water until no evidence of chemical remains (at least 15-20 minutes).

Get medical attention, if needed.

C) Eye contact : Wash eyes immediately with large amounts of water or normal saline, occasionally lifting upper and lower lids, until no evidence of chemical remains. Get medical attention immediately

D) Ingestion : Contact local poison control center or physician immediately.
Never make an unconscious person vomit or drink fluids.
When vomiting occurs, keep head lower than hips to help prevent aspiration.
If person is unconscious, turn head to side. Get medical attention immediately.

5. FIRE-FIGHTING MEASURES.

A) Extinguishing media

Suitable extinguishing media

- Dry chemical, carbon dioxide, regular foam extinguishing agent, spray

Unsuitable extinguishing media

- Avoid use of water jet for extinguishing

B) Special hazards arising from the substance or mixture

Hazardous combustion products

- Not available

C) Advice for firefighters

- Keep unauthorized personnel out.
- Notify your local fire station and inform the location of the fire and characteristics hazard.
- Using a unattended and water devices in case of large fire and leave alone to burn if you do not imperative.
- Avoid inhalation of materials or combustion by-products.
- Do not access if the tank on fire.
- Keep containers cool with water spray.
- Use fire fighting procedures suitable for surrounding area.
- Vapor or gas is burned at distant ignition sources can be spread quickly
- The extremely low flash point made by fire-fighters may be less effective at digesting weeks

6. ACCIDENTAL RELEASE MEASURES.

A) Measures and protective equipment necessary for personal protection.

Avoid breathing dust/fume/gas/mist/vapours/spray).

Eliminate all ignition sources as very fine particles may cause fire or explosion.

Wipe up spills immediately and follow precautions in protective equipment section.

Eliminate all ignition sources.

Be sure to ground all equipment when handling material. Stop leak if not hazardous.

Do not touch damaged containers or spills without wearing appropriate protective clothing.

Vapor suppressing foam may be used to reduce vapor generation.

Cover with plastic sheeting to prevent spread.

Avoid dust formation.

Be aware of substances and conditions to avoid.

B) Measures necessary to protect the environment.

Do not release to the environment.

Prevent entry into waterways, sewers, basements and confined spaces.

C) Methods for purification or removal.

Build dikes for fire extinguishing and collect water.

Absorb spills with an inert material (eg dry sand or earth) and place in a chemical waste container.

Absorb liquid and wash contaminated area with detergent and water.

For large spills, ditches away from liquid spills.

Collect absorbed material using clean explosion-proof tools.

With a clean shovel, place spillage in a clean, dry container with a loosely closed seal and remove container from spill area.

In case of powder leakage, cover with plastic sheet to prevent diffusion and keep dry.

For small spills, absorb with sand, non-combustible material and place in a container.

Collect spillage.

7. HANDING AND STORAGE.

A) Precautions for safe handling

Do not handle until all safety precautions have been read and understood.

Use explosion-proof electricity/ventilation/lighting/equipment.

Use only non-sparking tools.

Take anti-static measures.

Avoid breathing (dust/fume/gas/mist/vapours/spray).

Wash the handling area thoroughly after handling.

Handle only outdoors or in a well-ventilated area.

Do not take contaminated clothing out of work area.

Do not apply pressure, cut, weld, solder, bond, puncture, abrade, or expose to heat, flame, sparks, static electricity, or other sources of ignition.

Follow all MSDS/label precautions as product residue may remain after container is emptied.

Use with caution in handling/storage.

Carefully open the cap before opening.

Avoid prolonged or prolonged skin contact.

Be sure to ground all equipment when handling material.

Be aware of substances and conditions to avoid.

Beware of high temperature.

Pay attention to the heat.

When working in a confined space in a low area, there is a risk of oxygen deficiency, so measure and ventilate the oxygen concentration in the air while working.

B) Safe storage method.

Keep away from heat/sparks/open flames/high heat - No smoking

Store container tightly closed in a well-ventilated place.

Store in a well-ventilated place and keep at low temperature.

Empty drums should be drained completely and properly closed, immediately returned to drum control or properly placed.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION.

A) Exposure standards of chemical substances, biological exposure standards, etc.

- Domestic regulations

NEOPRENE : No Data

Cyclo-hexane : TWA 200ppm

Acetone : TWA 500ppm STEL 750ppm

Chlorinated paraffin : No Data

Toluene : TWA 50ppm STEL 150ppm

Phenol resin : No Data

- ACGHI

NEOPRENE : No Data

Cyclo-hexane : TWA 100ppm

Acetone : TWA 250ppm STEL 500ppm

Chlorinated paraffin : No Data

Toluene : TWA 20ppm

Phenol resin : No Data

- Biological exposure standard

NEOPRENE : No Data
Cyclo-hexane : No Data
Acetone : No Data
Chlorinated paraffin : No Data
Toluene : 0.02 mg/L Medium: blood Time: prior to last shift of workweek Parameter: Toluene; 0.03 mg/L Medium: urine Time: end of shift Parameter: Toluene; 0.3 mg/g creatinine Medium: urine Time: end of shift Parameter: oCresol with hydrolysis (background)
Phenol resin : No Data

B) Proper engineering control

Use process isolation, local exhaust, or other engineering controls to control air levels below exposure limits. Equipment storing or using this material should be equipped with eye washing facilities and safety showers.

C) Personal protective equipment:

Ventilation :

- Wear breathing protective equipment that has been certified by the Occupational Safety and Health Agency for the physicochemical properties of the exposed gas/liquid.
- Directly connected small gas mask (organic gas purification container and front type)
- Air filtration respirator (organic purifier and front type)
- In case of unknown concentration or other imminent danger to life or health: air-blowing mask (combined air line mask), air respirator (front type)

Eye protection :

- If there is a possibility of direct contact/exposure,Use safety glasses
- Install eyewashing equipment and emergency washing equipment (shower type) near the workplace.

Gloves

- If there is a possibility of direct contact/exposure,Use chemical safety gloves.

Clothing

- If there is a possibility of direct contact/exposure,

Use chemical protective clothing

9. PHISICAL AND CHEMICAL PROPERTIES.

A) Appearance : Brown
B) Odour : No data
C) Odour threshold : No data
D) pH : No data

E) Melting point/freezing point : No data

F) Initial boiling point and boiling range : 56℃ ~ 110℃

G) Flash point : -20℃

H) Evaporation rate : No data

I) Flammability(solid,gas) : No data

J) Upper/lower flammability or explosive limits :: No data

K) Vapor rate : No data

L) Solubility : Non soluble

M) Vapor density : No data

N) Relative density : 0.87 ~ 0.91

O) n-octanol/water partition coefficient : No data

P) Auto-ignition temperature : No data

Q) Decomposition temperature : No data

R) Viscosity : 6,000 ~ 8,000cP (25℃)

10.**STABILITY AND REACTIVITY.**

Reactivity : Stable under normal temperatures and pressures

Avoid contact with air, light or storage and use above room temperature.

Conditions to avoid :

Avoid heat, flames, sparks and other sources of ignition. Containers may rupture or explode if exposed to heat.

Incompatibilities :

Acids, bases, peroxides, metals, oxidizing materials, combustible materials

Hazardous decomposition :

Thermal decomposition products: oxides of carbon.

Polymerization :

May polymerize. Avoid contact with heat, air, light, initiators or curing agents. Closed containers may rupture violently.

11**. TOXICOLOGICAL INFORMATION.**

A) Information on the likely routes of exposure

- Inhalation through respiratory tract : No data

- Ingestion by mouth: No data

- Skin contact : No data

- Eye contact : No data

B) Delay by short term and long term exposures, acute and chronic effect :

• Acute toxicity :

Oral :

NEOPRENE : LD50 40000mg/kg Test species: Rat

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

Cyclo-hexane : LD50 5000 mg/kg Test species: Rat (OECD TG 401, male and female, no deaths)

※Source: ECHA

Acetone : LD50 5800 mg/kg Test species: Rat

※Source: ECHA

Chlorinated paraffin : LD50 11,700 mg/kg Test species: Rat

※Source: International Uniform ChemicaL Information Database (IUCLID) (http://ecb.jrc.it/esis)

Toluene : LD50 5580 mg/kg Test species: Rat (EU Method B.1)

※Source: ECHA

Phenol resin : LD50 5000 mg/kg Test species: Rat

※Source: (TOMES;RTECS)

Skin

NEOPRENE : No data

Cyclo-hexane : LD50 2000 mg/kg Test species: Rabbit (OECD TG 402, male and female, no deaths)

※Source: ECHA

Acetone : LD50 7400 mg/kg Test species: Rabbit

※Source: ECHA

Chlorinated paraffin : LD50 10,000 mg/kg Test species: Rabbit

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

Toluene : LD50 5000 mg/kg Test species: Rabbit

※Source: ECHA

Phenol resin : LD50 2000 mg/kg

※Source: (TOMES;RTECS)

Inhalation :

NEOPRENE : No data

Cyclo-hexane : Vapor LC50 5540 ppm 4hr Test species: Rat (OECD TG 403, GLP, male and female, no deaths) ※Source: ECHA

Acetone : Vapor LC50 76 mg/L 4hr Test species: Rat

※Source: ECHA

Chlorinated paraffin : No data

Toluene : Vapor LC50 20 mg/L Test species: Rat (OECD TG 403)

※Source: ECHA

Phenol resin : No data

• Skin corrosion / irritation : Slight pungent

NEOPRENE : Causes skin irritation

Cyclo-hexane : Skin corrosion/irritation test results in rabbits, non-irritation, erythema index = 1.93 , EU Method B.4

※Source: ECHA

Acetone : Skin corrosion/irritation test results using guinea pigs, no irritation Erythema index = 0, Edema index = 0

※Source: ECHA

Chlorinated paraffin : No data

Toluene : As a result of skin irritation test using rabbits, erythema and edema irritation were observed in all 7 animals, and moderate irritation was observed EU Method B4.

※Source: ECHA

Phenol resin : No data

• Serious eye damage / eye irritation : no data

NEOPRENE : Causes skin irritation

Cyclo-hexane : As a result of severe eye damage/irritation test using rabbits, there is irritation that fully recovers within 24 hours. Slightly irritating. Overall stimulus index = 1.3, OECD TG 405

※Source: ECHA

Acetone : As a result of severe eye damage/irritation test using rabbits, there is mild irritation. Effects based on Draize scores fully recovered within 7 days Maximum mean total score MMTS=19.1, corneal index=25, iris index=3.8, conjunctival index=9.2 OECD TG 405

※Source: ECHA

Chlorinated paraffin : Slightly irritating in the rabbit dread test

※Source: International Uniform ChemicaL Information Database (IUCLID) (http://ecb.jrc.it/esis)

Toluene : As a result of eye irritation test using rabbits, mild irritation was observed and no other effects were observed.

※Source: ECHA

Phenol resin : As a result of experiments with albino rabbits, Draize et, al. As a result of the test according to the method, the score was 10.6 out of 110, indicating that there is slight irritation to the eyes. (Source: ECHA)

• Respiratory and skin sensitization

NEOPRENE : No data

Cyclo-hexane : Skin sensitization test results using male and female guinea pigs, non-sensitivity, EU Method B.6, GLP

※Source: ECHA

Acetone : As a result of skin sensitization test on guinea pigs, no skin sensitization was observed.

※Source: ECHA

Chlorinated paraffin : Hypersensitivity in Guinea pig maximization test

※Source: International Uniform ChemicaL Information Database (IUCLID) (http://ecb.jrc.it/esis)

Toluene : As a result of maximization test using guinea pigs, no skin hypersensitivity reaction was observed EU Method B.6, GLP

※Source: ECHA

Phenol resin : No data

• Germ Cell Mutagenicity

NEOPRENE : No data

Cyclo-hexane : In vitro mammalian cell gene mutation test, reverse mutation using microorganism OECD TG 471, gene mutation test result using mammalian cultured cells OECD TG 476, negative regardless of metabolic activation system, chromosomal abnormality test result using mammalian bone marrow cells in vivo OECD TG 475, GLP, negative

※Source: ECHA

Acetone : Micronucleus test negative SIDS 1999, EHC 207 1998 Results of in vitro reversion mutation test using microorganisms, negative regardless of whether or not metabolic activation system was applied. OECD TG 471, chromosomal abnormality test results using in vitro mammalian cultured cells, whether or not metabolic activation system was applied. Negative without OECD TG 473, gene mutation test result using in vitro cultured cells, negative in the presence of metabolic activation system. Micronucleus test result using in vivo hamster cancer/male and mouse cancer/male cancer. Negative regression mutation test result, China. The result of chromosomal modification analysis using hamster ovary cells was negative, and the in vivo Chinese hamster micronucleus test was negative. Negative reversion mutation test result using in vitro microorganisms OECD TG 471, negative in vivo micronucleus test using mammalian red blood cells OECD TG 474

※Source: NITE, ECHA, HSDB, OECD SIDS

Chlorinated paraffin : In vitro Ames test (Negative for Salmonella typhimurium) Negative for in vivo cytogenetic assay

※Source: International Uniform ChemicaL Information Database (IUCLID) (http://ecb.jrc.it/esis)

Toluene : Gene mutation test result using mammalian cultured cells in vitro, OECD TG 476, reversion mutation test result using microorganism EU Method B.13/14, negative regardless of metabolic activation system, negative in vivo chromosomal abnormality test result

※Source: ECHA

Phenol resin : No data

- Reproductive Toxicity

NEOPRENE : No data

Cyclo-hexane Rat (male/female) 2nd generation reproductive toxicity test result (OECD TG 476, GLP), no effect on reproductive toxicity (NOAEC(P)=500-2,000ppm(=1,720~24,080mg/m3), NOAEC(F1)= 7,000ppm (=24,080 mg/m3), NOAEC(F2)=7,000ppm (=24,080 mg/m3)), fetal developmental toxicity test results using rats (OECD TG 414, GLP), no effect other than weight loss NOAEC(maternal toxicity)=500-2,000ppm, NOAEC(developmental toxicity)=7,000ppm, NOAEC(teratogenicity)=7,000ppm) (Systemic toxicity) = 500 ppm, NOEL (reproductive toxicity) = 2,000 ppm), as a result of a developmental toxicity test using rats and rabbits, maternal toxicity was observed only in rats, reducing overall maternal weight and reduced food consumption. Temporary auditory stimulus weakness or disappearance at 2,000ppm. No effect on rabbits (NOEL(rat)=500ppm, NOEL(rabbit)=7,000ppm) - Results of a 2-year-old test using rats (OECD TG 416), no effect, Results of a developmental effect test on rats and rabbits (OECD TG) 414), maternal toxicity, anesthetic effects, no developmental effects

※Source: OECD SIDS

Acetone : Reproductive toxicity test results in rats (male/female) showed decreased sperm vigor, increased abnormal sperm production, decreased tail epididymis and weight of epididymis (NOAEL=900 mg/kg bw/day , LOAEL=1,700 mg/kg) bw/day), as a result of a developmental toxicity test on mice, a decrease in fetal weight and an increase in the rate of late resorption (NOAEC=2,200 ppm, LOAEC=6,600 ppm) (OECD Guideline 414) effect was observed.

※Source: ECHA

Chlorinated paraffin : No incidence of fetal malformations in cesarean section when exposed to rats for 6-19 days after conception.

※Source: International Uniform ChemicaL Information Database (IUCLID) (http://ecb.jrc.it/esis)

Toluene : As a result of a reproductive toxicity test using rats, NOAEC(P) 600ppm (2261mg/m3) at 2000ppm (7537 mg/m3) due to a decrease in sperm count and epididymis.

※Source: ECHA

Phenol resin : No data

• Specific target organ toxicity (single exposure)

NEOPRENE : Irritating airways when inhaled

Cyclo-hexane : Result of acute inhalation test using rats/male rats OECD TG 403, tremor, hyperactivity, rapid breathing, inability to control body Immunohistological study decreased immune reactivity, high concentration induces convulsions in rabbits, severe diarrhea, circulatory collapse and death Target organ: central nervous system

※Source: ECHA, HSDB

Acetone : In humans, irritation of the nose, airways and bronchial tubes, and exposure to high concentrations may cause headache, dizziness, exhaustion of the legs and fainting ACGIH 2001, ECH 207 1998 Target Organs: Eyes, Skin, Respiratory System, Central Nervous System NIOSH Odor Threshold = 10, 20 minutes of exposure reduces the odor index w-28%, c-46%, irritation index: c-30% reduction, Irritation to the respiratory tract, nasal passages, headache, drowsiness Nasal irritation threshold 10000ppm25000mg/m3; NOAEC 5000ppm24000mg/m3

※Source: NITE, NIOSH, ECHA

Chlorinated paraffin : No data

Toluene : In humans, it acts on the central nervous system, causing fatigue, drowsiness, dizziness, respiratory irritation, excitement, vomiting, central nervous system depression, delirium, and gait abnormalities. Irritating to eyes, nose and throat. Causes anesthesia in laboratory animals. Target organ: central nervous system

※Source: HSDB

Phenol resin : Irritating airways when inhaled

• Specific target organ toxicity (repeat exposure)

NEOPRENE : No data

Cyclo-hexane : Results of a 90-day repeated inhalation toxicity test in rats and males EPA OPPTS 870.3465, GLP, body weight, hematology, clinical chemistry and histopathology of tissues adversely affected. The increase in liver weight and the discovery of hepatocyte hypertrophy in Kim lobules. Acute transient central nervous system effects NOAEC acute, transient effects = 500 ppm, NOAEC subchronic toxicity = 7,000 ppm, 90-day inhalation repeated toxicity test using mouse cancer/male EPA OPPTS 870.3465, red blood cell mass circulation, slight increase in plasma protein concentration. Acute transient central nervous system effect NOAEC acute, transient

effect = 500 ppm, NOAEC subchronic toxicity = 2,000 ppm Target organ: central nervous system - percutaneous repeated test result, irritant lesion caused by degreasing effect, 90-day inhalation test result OECD TG 413, Temporary sedative effect was seen, but this was considered an acute effect NOAEL=500 ppm Slight hepatotoxicity at high concentrations NOAEL=2,000 ppm

※Source: ECHA, OECD SIDS

Acetone A significant increase in leukocyte eosinophils and a significant decrease in neutrophil phagocytosis were observed in the 500ppm 6 hours/day, 6-day exposure group. Results of a 90-day subchronic oral toxicity test in rats, testes, kidney and hematopoietic system in male rats NOAEL=10,000 ppm900 mg/kg bw/d, LOAEL=20,000ppm1,700 mg/kg bw/d 90-day subchronic toxicity test results in OECD TG 408 rats, various hematological indicators, serum activity Increased, relative liver and kidney weights observed. NOEL=1% 900 mg/kg/day As a result of repeated inhalation toxicity test using rats for 13 weeks, no effects on nervous system function, work cognition, etc. were observed up to the highest concentration of 4000ppm9500mg/m3. NOAEL=9500mg/m3=1000mg/kg bw/day Not classified because effects from repeated toxicity were observed only at high doses above the classification criteria.

※Source: ACGIH, NITE, ECHA, OECD SIDS,

Chlorinated paraffin : Exposure to rat oral 100,900,3750 mg/kg bw for 13 weeks resulted in irritating changes and necrosis in the liver of females under any exposure conditions.

※Source: International Uniform ChemicaL Information Database (IUCLID) (http://ecb.jrc.it/esis)

Toluene : 90-day repeated oral toxicity test using rats EU method B.26 result of absolute or relative liver weight increase NOAEL 625 mg/kg bw/day 103 weeks inhalation carcinogenicity test using rats OECD TG453, GLP result NOAEC with local toxicity of nasal epithelium 600 ppm2250mg/m3 90-day repeated inhalation toxicity test using rat EU method B.29, GLP result Clinical symptoms, body weight change, organ weight brain, heart, lung, male relative testis weight and hematologic change Leukocyte reduction, plasma chollinesterase acitivity decrease As NOAEC 625 ppm2355 mg/m3

※Source: ECHA

Phenol resin : No data

- Aspiration Hazard

NEOPRENE : No data

Cyclo-hexane : Risk of chemical pneumonia by aspiration if swallowed. Dynamic Viscosity 0.894 mPa sat 25℃

Acetone : Kinematic viscosity rate 0.426 ㎟/s calculated value Ketones, kinematic viscosity rate 0.426 ㎟/s calculated value

※Source: Calculated value of kinematic viscosity of 0.426 ㎟/s Ketones, calculated value of kinematic viscosity of 0.426 ㎟/s

Chlorinated paraffin : No data

Toluene : Aspiration hazard: Hydrocarbon, kinematic viscosity at 40 ℃ 20.5 mm2 / s or less

Phenol resin : No data

- Other adverse effects : No data

12. ECOLOGICAL INFORMATION.

A) Ecotoxicity :

- Fish

NEOPRENE : No data

Cyclo-hexane : LC50 4.53 mg/ℓ 96 hr Pimephales promelas (OECD Guideline 203)

※Source: ECHA

Acetone : LC50 6210 ~ 8120 ㎎/ℓ 96 hr Pimephales promelas (OECD Guideline 203)

※Source: ECHA

Chlorinated paraffin : LC50 0.06 mg/ℓ 96 hr Oncorhynchus mykiss

※Source: The ECOTOXicology database (ECOTOX)

(http://cfpub.epa.gov/ECOTOX/quick_query.htm)

Toluene : LC50 5.5 mg/L 96 hr Oncorhynchus kistutch

※Source: ECHA

Phenol resin : No data

- Shellfish

NEOPRENE : No data

Cyclo-hexane : EC50 0.9 mg/ℓ 48 hr Daphnia magna (OECD TG 202)

Acetone : LC50 8800 mg/ℓ 48 hr Daphnia pulex

※Source: ECHA

Chlorinated paraffin : EC50 102 mg/ℓ 24 hr Daphnia magna ((IUCLID))

Toluene : No data

Phenol resin : No data

- Algae

NEOPRENE : No data

Cyclo-hexane : ErC50 9.317 mg/ℓ 72 hr Selenastrum capricornutum (OECD TG 201, GLP)

※Source: ECHA

Acetone : No data

Chlorinated paraffin : No data

Toluene : No data

Phenol resin : No data

B) Persistence and degradability

- Persistence

NEOPRENE : No data

Cyclo-hexane : log Kow 3.44 (25 ℃, pH 7)

Acetone : log Kow -0.24

※Source: ECHA

Chlorinated paraffin : log Kow

Toluene : log Kow 2.73 (20 ℃)

※Source: ECHA

Phenol resin : log Kow

- degradability

NEOPRENE : No data

Cyclo-hexane : No data

Acetone : BOD5/COD (BOD 5: 1.85 g O2/g test mat, COD: 1.92 g O2/g test mat, BOD5*100/COD: 96%, APHA Standard methods No.219 1971)

※Source: ECHA

Chlorinated paraffin : No data

Toluene : No data

Phenol resin : No data

C) Bioaccumulation

- Thickening

NEOPRENE : No data

Cyclo-hexane : 77 % 28 days (O2 consumption, OECD TG 301F, GLP)

Acetone : 62% 5 days (OECD TG 301B)

※Source: ECHA

Chlorinated paraffin : No data

Toluene : 80% 20 day (biodegradability)

※Source: ECHA

Phenol resin : No data

- Biodegradable

NEOPRENE : No data

Cyclo-hexane : No data

Acetone : No data

Chlorinated paraffin : No data

Toluene : BCF 90

※Source: ECHA

Phenol resin : No data

D) Mobility in soil

NEOPRENE : No data

Cyclo-hexane : 01 770 Koc

※Source: ECHA

Acetone : No data

Chlorinated paraffin : No data

Toluene : No data

Phenol resin : No data

E) Other adverse effects

NEOPRENE : No data

Cyclo-hexane : Alga Selenastrum capricornutum: NOEC72hr=0.94 mg/L growth rate OECD TG 201, GLP

※Source: ECHA

Acetone : Crustacean: 28d NOECDaphnia magna= 1,106 - 2,212 mg/L, Algae: 8 d TTNOECMicrocystis aeruginosa= 530 mg/L nominal ECHA Crustacean: NOECDaphnia magna=1660 mg/L, Algae: NOECEntosiphon sulcatum=28 mg/L in water, OECD SIDS Solubility of insolubles=1.00*106mg/LPHYSPROP Database, 2005, low acute toxicity NITE

※Source: ECHA, HSDB, OECD SIDS, NITE

Chlorinated paraffin : No data

Toluene : Fish Oncorhynchus kisutch : NOEC40 d=1.39 mg/L Crustacean Ceriodaphnia dubia : NOEC7 d=0.74 mg/L

※Source: ECHA

Phenol resin : No data

13. DISPOSAL CONSIDERATION.

A) Disposal method

Consider disposal via licensed waste disposal company. Scrap may be Incinerated under properly controlled conditions.

Please, follow all regulation in your country

14. TRANSFORTATION INFORMATION.

A) UN number : 1133

B) UN proper shipping name : Adhesive

C) Transport hazard class : Classs 3

D) Packing group : Ⅱ

E) Marine pollutant : N/A

15. REGULATORY INFORMATION.

A) Industrial Safety and Health Act

- Toluene

  Work environment Measured material (measurement cycle: 6 months)

  Hazardous chemicals to be managed

  Special medical examination subject substance (diagnosis period: 12 months)

  Process Safety Management (PSM) Substances Subject to Submission

  Exposure standard setting substance

  Substances for setting acceptance criteria

- Acetone, Cyclohexane

  Work environment Measured material (measurement cycle: 6 months)

  Hazardous chemicals to be managed

  Special medical examination subject substance (diagnosis period: 12 months)

  Process Safety Management (PSM) Substances Subject to Submission

  Exposure standard setting substance

- Silica

  Exposure standard setting substance

B) Chemical Control Act

- Toluene

  toxic substances

  Accident preparation material

C) Hazardous Material Act

- Toluene: Category4 1st petroleum (non-water soluble) (200L)
- Acetone: Category4 1st petroleum (water soluble) (400L)
- Cyclohexane: Categoty4 1st petroleum (non-water soluble) (200L)

D) Wastes Management Act

Designated waste

E) Other requirements in domestic and other countries : No data

16. OTHER INFORMATION.

A) Information source and references

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

European Chemical Substances Information System (ECB-ESIS)
(http://ecb.jrc.it/esis)

The ECOTOX Database, EPA (http://cfpub.epa.gov/ecotox)

IUCLID Chemical Data Sheet, EC-ECB

International Chemical Safety Cards (ICSC) (http://www.nihs.go.jp/ICSC)

TOXNET, U.S. National Library of Medicine (http://toxnet.nlm.nih.gov)

The Chemical Database, The Department of Chemistry at the University of Akron
(http://ull.chemistry.uakron.edu/erd)

Industrial poisoning handbook, Shin Kwang Publishing Co.

Dangerous Goods Information Management System, National Emergency Management Agency (http://hazmat.nema.go.kr)

Chemical Information System, Safety and Health Corporation
(http://msds.kosha.or.kr/)

Chemical Information System, National Institute of Environmental Research
(http://ncis.nier.go.kr)

Kosha Chemical information Center (http://www.kosha.net)

B) First issuing data : 06.01.2021

C) Revision number and latest revision data : Rev.1, 01.03. 2022

D) Other : This information is prepared by Industrial Safety and Health Act. This MSDS is prepared by the information of Korea Occupational Safety and Health Agency. The information herein is given in good faith, but no warranty, express or implied, is made. The data on this sheet relates only to the specific material designated herein. Chemtros Corporation assumes no legal responsibility for use or reliance upon these data.