Safety Data Sheet(SDS)

Last revised date : 02-05-2024

1. Identification

1) Product identifier : STARON ADHESIVE (COMPONENT A)

2) Recommended use of the chemical and restrictions on use

○ Recommended use of the chemical

Seam adhesive for staron solid surface

○ Restrictions on use

Use for recommended use only
Do not use it for weapons manufacturing and related purposes.

3) Details of the supplier of the safety data sheet

○ Seller

Company name : Lotte Chemical Corporation
Address : 56, Gosan-ro, Uiwang-si, Gyeonggi-do, Republic of Korea
Telephone number :

Advanced Materials	+82-31-596-3114	Basic Chemicals	+82-2-829-4114

Emergency phone number

Technology Team	+82-31-596-3861	Yeosu Plant(Advanced	+82-61-689-1100
Yeosu Plant	+82-61-688-2100	Ulsan Plant	+82-52-278-3500

Fax number : +82-31-596-3882

2. Hazards identification

1) Hazard classification

- Flammable liquids Category 2
- Skin corrosion/irritation Category 2
- Skin sensitization Category 1
- Specific target organ toxicity single exposure Category 3(Respiratory tract irritation)

2) Allocation label elements

Hazard pictograms

Signal word

- DANGER

Hazard statements

H225 Highly flammable liquid and vapour
H315 Causes skin irritation
H317 May cause an allergic skin reaction
H335 May cause respiratory irritation

Precautionary statements

- Prevention

  P210 Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.
  P233 Keep container tightly closed.
  P240 Ground and bond container and receiving equipment.
  P241 Use only explosion-proof electrical, ventilating, lighting and equipment.
  P242 Use nonsparking tools.
  P243 Take action to prevent static discharges.
  P261 Avoid breathing dust/fume/gas/mist/vapours/spray.
  P264 Avoid contact during pregnancy/ while nursing.
  P271 Use only outdoors or in a wellventilated area.
  P272 Contaminated work clothing should not be allowed out of the workplace.
  P280 Wear protective gloves/ protective clothing/ eye protection/ face protection.

- Response

  P302+P352 IF ON SKIN: Wash with plenty of soap and water.
  P303+P361+P353 IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water [or shower].
  P304+P340 IF INHALED: Remove person to fresh air and keep comfortable for breathing.
  P312 Discomfort call a POISON CENTER / toxins center / physician if you feel unwell.
  P320 Specific treatment is urgent (see supplemental instructions on the administration of antidotes on this label).
  P332+P313 If skin irritation occurs: Get medical advice/attention.
  P333+P313 If skin irritation or a rash occurs: Get medical advice/attention.
  P362+P364 Take off contaminated clothing and wash it before reuse.
  P363 Wash contaminated clothing before reuse.
  P370+P378 In case of fire: Use foam to extinguish.

- Storage

P403+P233 Store in a wellventilated place. Keep container tightly closed.

P403+P235 Store in a wellventilated place. Keep cool.

P405 Store locked up.

- Disposal

P501 Discard the contents/containers in accordance with the laws and laws related to waste.

3) Other hazards:

According to experience and information provided, this product does not affect harmful effects when using and handling it as a regulation.

3. Composition/Information on ingredients

Chemical name	Common name	CAS No.	Content(wt%)
Methyl methacrylate	methyl methacrylate	80-62-6	>=45 ~ <=55
2-Methyl-2-propenoic acid methyl ester homopolymer	Polymethyl methacrylate	9011-14-7	>=25 ~ <=35
Aluminium hydroxide	aluminium hydroxide	21645-51-2	>=15 ~ <=25

4. First-aid measures

1) Following eye contact

- In case of contact with substance, immediately flush skin or eyes with running water for at least
- Seek immediate medical assistance.

2) Following skin contact

- For hot product, immediately immerse in or flush the affected area with large amounts of cold water to dissipate heat.
- For minor skin contact, avoid spreading material on unaffected skin.
- In case of burns, immediately cool affected skin for as long as possible with cold water. Do not remove clothing if adhering to skin.
- In case of contact with substance, immediately flush skin or eyes with running water for at least
- Remove and isolate contaminated clothing and shoes.
- Seek immediate medical assistance.
- Wash skin with soap and water.

3) Following inhalation

- Administer oxygen if breathing is difficult.
- Give artificial respiration if victim is not breathing.
- If exposed to excessive levels of dusts or fumes, remove to fresh air and get medical attention if cough or other symptoms develop.
- Keep victim warm and quiet.
- Move to fresh air.

4) Following ingestion

- Seek immediate medical assistance.

5) Delayed and immediate effects and also chronic effects from short and long term exposure

- Causes skin irritation
- May cause an allergic skin reaction
- May cause respiratory irritation

6) Advice to physician

- Ensure that medical personnel are aware of the material(s) involved and take precautions to protect themselves.

5. Fire-Fighting measures

1) Suitable (and unsuitable) extinguishing media

○ Suitable extinguishing media

- Dry chemical.
- Regular foam.
- For mixtures containing alcohol or polar solvent: Alcohol-resistant foam.
- CO2.
- Use dry sand or earth to smother fire.
- Use alcohol foam, carbon dioxide, or water spray when fighting fires involving this material.
- Water spray.

○ Unsuitable extinguishing media

- Direct water.

2) Special hazards arising from the substance or mixture

○ Pyrolytic product

- During a fire, irritating and highly toxic gases may be generated by thermal decomposition or

○ Risk of fire and explosion

- When heated, vapors may form explosive mixtures with air: indoors, outdoors and sewers
- HIGHLY FLAMMABLE: Will be easily ignited by heat, sparks or flames.
- Can form explosive mixtures at temperatures at or above the flashpoint.
- May violently polymerize and result in fire and explosion.
- Containers may explode when heated.
- Vapor explosion hazard indoors, outdoors or in sewers.
- Runoff may create fire or explosion hazard.
- Vapors may form explosive mixtures with air.
- Some may burn but none ignite readily.
- Vapors may travel to source of ignition and flash back.

○ Other

- May cause toxic effects if inhaled.

3) Special protective equipment for firefighters

- Move containers from fire area if you can do it without risk.

- Rescuers should put on appropriate protective gear.
- Substance may be transported hot.
- Substance may be transported in a molten form.
- Cautions ; Most of liquids are lighter than water.
- Dike fire-control water for later disposal; do not scatter the material.
- Evacuate area and fight fire from a safe distance.
- Fire involving Tanks: ALWAYS stay away from tanks engulfed in fire.
- Fire involving Tanks: Cool containers with flooding quantities of water until well after fire is out.
- Fire involving Tanks: Fight fire from maximum distance or use unmanned hose holders or monitor
- Fire involving Tanks: For massive fire, use unmanned hose holders or monitor nozzles; if this is impossible, withdraw from area and let fire burn.
- Fire involving Tanks: Withdraw immediately in case of rising sound from venting safety devices or discoloration of tank.
- Most vapors are heavier than air. They will spread along ground and collect in low or confined areas (sewers, basements, tanks).

6. Accident release measures

1) Personal precautions, protective equipment and emergency procedures
- The very fine particles can cause a fire or explosion, eliminate all ignition sources.
- A vapor suppressing foam may be used to reduce vapors.
- All equipment used when handling the product must be grounded.
- Clean up spills immediately, observing precautions in Protective Equipment section.
- Cover with plastic sheet to prevent spreading.
- Do not touch damaged containers or spilled material unless wearing appropriate protective
- Do not touch or walk through spilled material.
- ELIMINATE all ignition sources (no smoking, flares, sparks or flames in immediate area).
- Please note that materials and conditions to be avoided.
- Stop leak if you can do it without risk.

2) Environmental precautions
- Prevent entry into waterways, sewers, basements or confined areas.

3) Methods and materials for containment and cleaning up
- Absorb or cover with dry earth, sand or other non-combustible material and transfer to
- Absorb spill with inert material (e.g., dry sand or earth), then place in a chemical waste container.
- Absorb the liquid and scrub the area with detergent and water.
- Dike and collect water used to fight fire.
- Large Spill: Dike far ahead of liquid spill for later disposal.
- Use clean non-sparking tools to collect absorbed material.

7. Handling and storage

1) Precautions for safe handling
- Measure atmospheric oxygen concentration and ventilate the area during the operation since low-closed area can cause oxygen deficiency.

- Please note that materials and conditions to be avoided.
- Use care in handling/storage.
- Use only in a well-ventilated area.
- All equipment used when handling the product must be grounded.
- Avoid breathing vapors from heated material.
- Avoid prolonged or repeated contact with skin.
- Caution: Heat.
- Do not enter storage area unless adequately ventilated.
- DO NOT PRESSURIZE, CUT, WELD, BRAZE, SOLDER, DRILL, GRIND, OR EXPOSE SUCH CONTAINERS TO HEAT, FLAME, SPARKS, STATIC ELECTRICITY, OR OTHER SOURCES OF IGNITION.
- Follow all MSDS/label precautions even after container is emptied because they may retain
- Handling refer to engineering control/personal protection section.
- Loosen closure cautiously before opening.

2) Conditions for safe storage (including any incompatibilities)

- Empty drums should be completely drained, properly bunged, and promptly returned to a drum reconditioner, or properly disposed of.

8. Exposure controls & personal protection

1) Chemical exposure limits, Biological exposure standard

Components	ACGIH regulations	Biological limit values
Methyl methacrylate	50 ppm TWA 100 ppm STEL	No data available

2) Appropriate engineering controls

- Facilities storing or utilizing this material should be equipped with an eyewash facility and a safety
- If user operations generate dust, fume, or mist, use ventilation to keep exposure to airborne contaminants below the exposure limit.

3) Personal protective equipment

○ Respiratory protection

- If you have a direct contact or exposed to the material, wear the appropriate form of respiratory protection certified.

○ Eye protection

- If the work environment or activity involves dusty conditions, mists or aerosols, wear the

○ Hand protection

- Wear chemical safety gloves.

○ Skin protection

- Wear protective gloves/ protective clothing/ eye protection/ face protection/ hearing protection.

9. Physical and chemical information

Property name	Values	Source

Appearance		
Physical state	liquid	
Color	Various	
Odor	characteristic	
Odor threshold	0.05 ~ 0.34	
pH	No data available	
Melting point/freezing point	No data available	
Initial boiling point and boiling range(℃)	101℃	
Flash point(℃)	10℃	
Evaporation rate	3.1 (Ethyl acetate=1)	
Flammability(solid, gas)	No data available	
Upper/lower flammability or explosive limits	12.5/ 1.7	
Vapour pressure	29 mmHg at 20℃	
Solubility(ies)	No data available	
Vapour density	3.5	
Relative density	1.10 ~ 1.15 at 25℃	
n-octanol/water partition coefficient	1.38	
Auto ignition temperature	421℃	
Decomposition temperature	No data available	
Viscosity(㎟/s, 40℃)	15000 ~ 20000 cps at 25℃	
Molecular weight(mass)	No data available	
Specific gravity	No data available	

10. Stability and reactivity

1) Chemical stability and Possibility of hazardous reactions

- Vapors may form explosive mixtures with air.
- When heated, vapors may form explosive mixtures with air: indoors, outdoors and sewers
- Can form explosive mixtures at temperatures at or above the flashpoint.
- Containers may explode when heated.
- Fire may produce irritating, corrosive and/or toxic gases.
- HIGHLY FLAMMABLE: Will be easily ignited by heat, sparks or flames.
- May violently polymerize and result in fire and explosion.
- Runoff may create fire or explosion hazard.
- Some may burn but none ignite readily.

- Vapor explosion hazard indoors, outdoors or in sewers.

2) Conditions to avoid

- Heat, contamination.
- Ignition source(heat, spark, flame, etc.).

3) Incompatible materials

- Combustibles, reducing material.

4) Hazardous decomposition products

- Corrosive/toxic fume.
- During a fire, irritating and highly toxic gases may be generated by thermal decomposition or
- Irritating, corrosive and/or toxic gas.

11. Toxicological information

1) Information on the likely routes of exposure

- No data available

2) Health hazard information

○ Acute toxicity

● Acute toxicity(Oral) PRODUCT : Not classified

- Aluminium hydroxide
  : LD50 >2000 mg/kg Species: Rat, (Route of administration: gavage, female, OECD TG 423, GLP)

- Methyl methacrylate
  : LD50 7900 mg/kg Experimental species: Rat (mouse LD50=5300 mg/kg bw, dog LD50=4725mg/kg)

● Acute toxicity(Dermal) PRODUCT : Not classified

- Methyl methacrylate
  : LD50 >5000 mg/kg Experimental species: Guinea pig

● Acute toxicity(Inhalation:Gases) PRODUCT : Not classified

- No data available

● Acute toxicity(Inhalation:Vapours) PRODUCT : Not classified

- Methyl methacrylate
  : LC50 7093 ppm 4 hr Experimental species: Rat (rat, LC50, 3750ppm, 8H, HSDB rat, LC50, 78000mg/m3, 4H, ChemIDplus)

● Acute toxicity(Inhalation:Dust/mist) PRODUCT : Not classified

- Aluminium hydroxide
  : LC50 7.6 ㎎/ℓ 1 hr Species : Rat, (male, OECD TG 403)

○ Skin corrosion/irritation PRODUCT : Category 2

- Aluminium hydroxide
  : Edema score: 0/4, no irritation, Rabbit, OECD TG 404

- 2-Methyl-2-propenoic acid methyl ester homopolymer
  : Causes skin irritation

- Methyl methacrylate
  : As a result of skin corrosion/irritation test using rabbits, severe erythema and swelling were observed.

○ Serious eye damage/eye irritation　PRODUCT : Not classified

- Aluminium hydroxide
  : No irritation, Rabbit, corneal opacity (0), iris (0), conjunctival hyperemia (0.2), conjunctival edema (0), completely reversible within 48 hours, OECD TG 405, no hypersensitivity, Mouse, in vivo, male

- 2-Methyl-2-propenoic acid methyl ester homopolymer
  : Causes eye irritation

- Methyl methacrylate
  : As a result of severe eye damage/irritation test using rabbits, mild irritation was observed. There is only a little redness.

○ Respiratory sensitization　PRODUCT : Not classified

- No data available

○ Skin sensitization　PRODUCT : Category 1

- Aluminium hydroxide
  : No sensitization, Guinea pig, GLP, male, Guinea pig maximization test (GMPT): Dose level: 50 and 75%, Response: 0/10, OECD TG 406

- Methyl methacrylate
  : Skin sensitization confirmed. Contact may cause allergic dermatitis.

○ Carcinogenicity　PRODUCT : Not classified

- 2-Methyl-2-propenoic acid methyl ester homopolymer
  : 3 (IARC)

- Methyl methacrylate
  : 3 (IARC)
A4 (ACGHI)

○ Germ cell mutagenicity　PRODUCT : Not classified

- Aluminium hydroxide
  : in vitro - chromosomal aberration test using mammalian cells: positive (lymphocytes:, no metabolic activation system), OECD TG 473

- Methyl methacrylate
  : Sister chromosome exchange (SCE) test using mammalian spermatogonial cells was negative. (Cannot confirm whether it is in vitro or in vivo) The result of mammalian chromosomal abnormality test is negative regardless of the presence or absence of metabolic activation system.

○ Reproductive toxicity PRODUCT : Not classified

- Aluminium hydroxide
  : Useful information on the prenatal, developmental, and neurotoxic effects of chronic postpartum exposure in rats to high doses of aluminum (30 mg Al/kg bw/day, 100 mg Al/kg bw/day, 300 mg Al/kg bw/day) It is difficult to distinguish between developmental toxicity and direct toxicity after weaning because the F1 generation was administered for the entire period after weaning. , effects of Na-citrate observed in female pups, urinary tract lesions observed at higher doses, more frequently in males Results No evidence of effects on memory, learning, critical effect, consistent results for forelimb and hindlimb grip strength was observed, supported by less consistent observations on defecation, voiding, and necropsy urinary tract lesions, body weight, and albumin/globulin ratio observed in the 100 mg Al/kg bw/day group. Administration of FOB characteristics in neonates and adolescent offspring No relevant difference was observed, repeated dose toxicity of aluminum LOAEL = 1000 mg Al/kg bw/day, because effects were observed in both the Al-citrate high-dose group and the NA-citrate group, based on the results of sexual maturation in this study Therefore, an Al-based LOAEL/NOAEL cannot be proposed. The weight difference in weaning horses compared to the control group occurred in the high-dose Al-citrate group and the sodium citrate group, and is considered to be dosing-related, but the role of Al is unclear; Relative differences between Al-citrate and Na-citrate groups may be related to differences in liquid consumption, rat, equivalent or similar to Guideline: OECD TG 426 and OECD TG 452, GLP

- Methyl methacrylate
  : As a result of a developmental toxicity test using rats (OECD TG414, GLP), no developmental toxic effects related to the test substance were observed. NOAEC >= 8.3 mg/L, as a result of a developmental toxicity test using rabbits (OECD TG 414, GLP), feed consumption and body weight Maternal toxicity NOAEL = 50 mg/kg bw/day due to reduction, etc., developmental toxicity-related effects were not observed at all concentrations NOAEL (developmental toxicity) = 450 mg/kg bw/day

○ Specific target organ toxicity single exposure PRODUCT : Category 3(Respiratory tract irritation)

- Aluminium hydroxide
  : Oral: There were no clinical signs of related poisoning after treatment or during the 14-day observation period. Soft stools were present in all subjects only on the day of administration. No similar clinical signs after the first day of observation period / No effect of pathological treatment (rat / female / OECD TG 423 / GLP) Inhalation: Observed clinical symptoms were consistent with dyspnea. Surviving animals were described as exhibiting "slight" toxic effects and good recovery by the end of the 14-day observation period. More discoloration was observed on the lung surface of treated animals compared to control animals. A "slight" increase in the number of lung lesions in test animals was also reported but no individual data or additional details were provided. The dead animals were found to have white gels in their organs and stomach. Their latitudes are filled with gas and enlarged. Liver and kidney did not differ between treated and control animals on visual examination (rat/male/equivalent or similar to Guideline: OECD TG 403).

- 2-Methyl-2-propenoic acid methyl ester homopolymer
  : Irritating airways when inhaled

- Methyl methacrylate
  : Drowsiness, ataxia, changes in gastrointestinal structure and salivary gland function, respiratory depression, coma, and muscle weakness were observed. human respiratory irritation

○ Specific target organ toxicity repeated exposure PRODUCT : Not classified

- Aluminium hydroxide
  : Oral (Chronic): As a result of oral exposure in rats, the LOAEL for aluminum toxicity was specified (lethal effect, for forelimb and hindlimb grip strength) of 1075 mg AlCitrate/kg bw/day (100 mg Al/kg bw/day). fairly consistent results observed), Rat, OECD TG 426 and OECD TG 452, GLP inhalation (short repetition): study results were broad and provide clear evidence for an inflammatory response in positive control (quartz-treated) animals, Rat

- Methyl methacrylate
  : As a result of repeated oral toxicity test using rats for 104 weeks, no effects related to the test substance were observed up to the highest concentration (2000 ppm) (ECHA) Results of 104 weeks repeated inhalation toxicity test using rats (OECD TG453, GLP) Inflammation in the nasal cavity, smell Observation of epithelial degeneration. Local effect LOAEC = 250 ppm, no other significant pathological effects were observed NOEC (systemic effect) = 500 ppm

○ Aspiration hazard PRODUCT : Not classified

- No data available

12. Ecological information

1) Ecotoxicity

● Fish

- Aluminium hydroxide
  : NOEC >50 mg/ℓ 96 hr Ictalurus punctatus, (flow-through, freshwater, GLP)
- Methyl methacrylate
  : LC50 368.1 mg/ℓ 96 hr Other (Lebistes reticulatus)

● Crustaceans

- Aluminium hydroxide
  : NOEC >22.6 mg/ℓ 96 hr Acronuria sp., (static formula, fresh water)
- Methyl methacrylate
  : EC50 69 mg/ℓ 48 hr Daphnia magna (EU-RAR (2002))

● Aquatic algae

- Aluminium hydroxide
  : EC10 0.153 mg/ℓ 72 hr Pseudokirchneriella subcapitata, (OECD TG 201 , semi-static, fresh
- Methyl methacrylate
  : EbC50 >110 mg/ℓ 72 hr Selenastrum capricornutum (OECD Guideline 201)

2) Persistence and degradability

● Degradability

No data available

● Biodegradation

- Methyl methacrylate
  : 94 % 2 weeks (biodegradable)

3) Bioaccumulative potential

● n-octanol water partition coefficient

- Methyl methacrylate
  : 1.38 log Kow

● Bioconcentration factor(BCF)

- Methyl methacrylate
  : 4

4) Mobility in soil

No data available

5) Results of PBT and vPvB assessment

PBT and vPvB assessment

This substance/mixture contains no components considered to be either persistent, bioaccumulative and toxic (PBT), or very persistent and very bioaccumulative (vPvB) at levels of 0.1% or higher.

6) Endocrine disrupting properties

The substance/mixture does not contain components considered to have endocrine disrupting properties according to REACH Article 57(f) or Commission Delegated regulation (EU) 2017/2100 or Commission Regulation (EU) 2018/605 at levels of 0.1% or higher.

7) Other adverse effects

No data available

13. Disposal considerations

1) Disposal methods

- Empty containers should be taken to an approved waste handling site for recycling or disposal.

2) Precautions (including disposal of contaminated container of package)

- Dispose of in accordance with local regulations.
- Send to a licensed waste management company.

14. Transport information

1) UN No. : 1133

2) Proper shipping name : ADHESIVES containing flammable liquid

3) Hazard class : 3

4) Packing group : Ⅱ

5) Marine pollutant : Not applicable

6) Special precautions for user related to transport or transportation measures :

Emergency measures in case of fire : F-E

Emergency measures in the effluent : S-D

- ADR

· Tunnel restriction code : Not applicable

- IMDG

· Marine pollutant : Not applicable

- Air transport(IATA)

· UN No. : 1133

· Proper shipping name : ADHESIVES containing flammable liquid

· Class or division : 3

· Packing group : Ⅱ

7) Maritime transport in bulk according to IMO instruments

Not applicable

15. Regulatory information

Australia Industrial Chemicals Act

- Not applicable

China Inventory of Existing Chemical Substances (IECSC)

● Inventory - China - Inventory of Existing Chemical Substances (IECSC)

- Aluminium hydroxide : Present [27684]

- 2-Methyl-2-propenoic acid methyl ester homopolymer : Present [21411]

- Methyl methacrylate : Present [17458]

92/32/EEC

- Not applicable

European Union Official Journal of the European Communities 15 June 1990 - Annex Based on Article 13 of Directive 67/548/EEC Amended by Directive 79/831/EEC

● Inventory - European Union - European Inventory of Existing Commercial Chemical Substances (EINECS)

- Aluminium hydroxide : 244-492-7

- Methyl methacrylate : 201-297-1

Japan Law Concerning the Examination and Regulations of Manufacture, etc. of Chemical Substances

● Inventory - Japan - Existing and New Chemical Substances (ENCS)

- Aluminium hydroxide : (1)-17

- 2-Methyl-2-propenoic acid methyl ester homopolymer : (6)-524 (listed under Polyalkyl methacrylate)

- Methyl methacrylate : (2)-1036

New Zealand Environmental Protection Authority, Inventory of Chemicals

● Inventory - New Zealand - Inventory of Chemicals (NZIoC)

- Aluminium hydroxide : May be used as a single component chemical under an appropriate group standard

- 2-Methyl-2-propenoic acid methyl ester homopolymer : May be used as a single component chemical under an appropriate group standard

- Methyl methacrylate : HSNO Approval: HSR001195

Turkey Regulation on Inventory and Control of Chemicals

- Not applicable

Taiwan Chemical Substance Inventory

● Inventory - Taiwan - Taiwan Chemical Substance Inventory (TCSI)

- Aluminium hydroxide : Present

- 2-Methyl-2-propenoic acid methyl ester homopolymer : Present

- Methyl methacrylate : Present

U.S. Toxic Substances Control Act

● Inventory - United States - Section 8(b) Inventory (TSCA)

- Aluminium hydroxide : Present (ACTIVE)

- 2-Methyl-2-propenoic acid methyl ester homopolymer : Present [XU] (ACTIVE)

- Methyl methacrylate : Present (ACTIVE)

Vietnam National Chemicals Inventory (NCI)

● Inventory - Vietnam - National Chemicals Inventory (NCI) (DRAFT)

- Aluminium hydroxide : Present 15325

- 2-Methyl-2-propenoic acid methyl ester homopolymer : Present 12245

- Methyl methacrylate : Present 00661

16. Other information

1) Reference

NCIS, KOSHA, Montreal Protocol, ECHA, OECD SIDS, EU IUCLID, HSDB(PubChem), NITE, NTP, ACGIH, IARC, NIOSH, ChemIDplus, EPA, EPI Suite, INCHEM

2) Issue date : 15-12-2023

3) Revision date

○ Revised date count : 2-1

○ Last revised date : 15-12-2023

4) Other

ACGIH : American Conference of Governmental Industrial Hygienists
ADR : Agreement Concerning the International Carriage of Dangerous Goods by Road
ATE : The Acute Toxicity Estimate
ECHA : European Chemicals Agency
EPA : United States Environmental Protection Agency
EPI Suite : The Estimation Programs Interface for Windows
EU IUCLID : International Uniform Chemical Information Database
HSDB : Hazardous Substances Data Bank
IARC : International Agency for Research on Cancer
IATA : International Air Transport Association
IMDG : International Maritime Dangerous Goods Codes
INCHEM : Internationally Peer Reviewed Chemical Safety Information
M-Factor : The Multiplication Factor
NIOSH : National Institute of Occupational Safety and Health
NITE : National Institute of Technology and Evaluation(JAPAN)
NTP : National Toxicology Program
SCL : Specific Concentration Limit
OECD SIDS : Organization for Economic Co-operation and Development Screening Information Dataset