Last revised date : 2022-04-20

PCN No. :

Safety Data Sheet(SDS)

1. Identification of the substance/mixture and of the company/undertaking

1) Product identifier : ABS XR401 GRADE

2) Relevant identified uses of the substance or mixture and uses advised against

○ Relevant identified uses

29.Polymer preparations and compounds

○ Uses advised against

3) Supplier information

○ Company name [Manufacture]

Company : LG Chem.

Address : 55, Yeosusandan 2-ro, Yeosu-si, Jeollanam-do, Republic of Korea

Emergency number : 82-61-680-1213

2. HAZARD IDENTIFICATION

1) Hazard classification

- Skin corrosion/irritation Category 2
- Serious eye damage/eye irritation Category 2
- Specific target organ toxicity single exposure Category 3(Respiratory tract irritation)

2) Allocation label elements

Hazard pictograms

Signal word

- WARNING

Hazard statements

H315 Causes skin irritation

H319 Causes serious eye irritation

H335 May cause respiratory irritation

Precautionary statements

- Prevention

P261 Avoid breathing dust/fume/vapours.

P264 Wash eye,skin thoroughly after handling.

P271 Use only outdoors or in a wellventilated area.

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

- Response

P302+P352 If you get on your skin: Wash with a large amount of water.

P304+P340 IF INHALED: Remove person to fresh air and keep 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.

P312 If you feel uncomfortable, receive medical institutions and doctors' consultation.

P321 When contacting with substances, make a treatment such as rinsing the skin and eyes in the water flowing more than 20 minutes.

P332+P313 If skin irritation occurs: Get medical advice/attention.

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

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

- Storage

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

P405 Store locked up.

- Disposal

P501 Dispose of contents and containers according to the legislation of the waste

3) Other hazards

○ Product NFPA Level

Health	Flamm abliity	Reactivity
2		0

(※ 0 = Insufficient , 1 = Slightly , 2 = ordinary , 3 = Highness , 4 = Very high)

3. Composition/Information on ingredients

Components	EU REACH No.	CAS No.	PCT(wt%)
ABS resin	Styrene:01-2119457861-32, Acrylonitrile:01-2119474195-34, 1,3-Butadiene:01-2119471988-16	9003-56-9	20 ~ 30

Components	EU REACH No.	CAS No.	PCT(wt%)
2-Propenenitrile polymer with ethenylbenzene and (1-methylethenyl)benzene	Styrene:01-2119457861-32, Acrylonitrile:01-2119474195-34, a-Methylstyrene:01-2119472426-35	9010-96-2	45 ~ 50
Acrylonitrile-styrene copolymer	Styrene:01-2119457861-32, Acrylonitrile:01-2119474195-34	9003-54-7	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 20 minutes.
- Seek immediate medial 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 contact with substance, immediately flush skin or eyes with running water for at least 20 minutes.
- Remove and isolate contaminated clothing and shoes.
- Seek immediate medial assistance.

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 medial assistance.

5) 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
- CO_2.
- Dry chemical.

- Use alcohol foam, carbon dioxide, or water spray when fighting fires involving this material.
- Use dry sand or earth to smother fire.
- 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 combustion.
- Non-combustible, substance itself does not burn but may decompose upon heating to produce corrosive and/or toxic fumes.

○ Risk of fire and explosion

- Containers may explode when heated.
- Some may burn but none ignite readily.

○ Other

- No data available

3) Special protective equipment for firefighters

- 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 nozzles.
- 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.
- Move containers from fire area if you can do it without risk.
- Rescuers should put on appropriate protective gear.
- Substance may be transported in a molten form.

6. ACCIDENTAL RELEASE MEASURES

1) Health considerations and protective equipment

- 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 clothing.
- 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) For cleaning up

- Absorb or cover with dry earth, sand or other non-combustible material and transfer to containers.
- 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.

7. HANDLING AND STORAGE

1) Precautions for safe handling

- Avoid breathing vapors from heated material.
- Avoid prolonged or repeated contact with skin.
- Do not enter storage area unless adequately ventilated.
- Follow all MSDS/label precautions even after container is emptied because they may retain product residues.

- Handling refer to engineering control/personal protection section.
- Loosen closure cautiously before opening.
- Please note that materials and conditions to be avoided.
- Use care in handling/storage.
- Use only in a well-ventilated area.

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 AND PERSONAL PROTECTION

1) Chemical exposure limits, Biological exposure standard

Components	Occupational exposure limits	ACGIH	Biological standard
ABS resin	TWA : Not applicable STEL : Not applicable	TWA : Not applicable STEL : Not applicable	Not applicable
2-Propenenitrile polymer with ethenylbenzene and (1-methylethenyl)benzene	TWA : Not applicable STEL : Not applicable	TWA : Not applicable STEL : Not applicable	Not applicable
Acrylonitrile-styrene copolymer	TWA : Not applicable STEL : Not applicable	TWA : Not applicable STEL : Not applicable	Not applicable

2) Appropriate engineering controls

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

3) Personal protection equipment

○ Respiratory protection

- If high frequency of use or exposure, wear air respirator.
- Wear breathing protection, which needs a confirmation from the Korea Occupational Safety and Health

- Agency.

○ Eye protection

- Wear suitable protective goggles and face shields.

○ Hand protection

- Wear suitable protective gloves.

○ Body protection

- Wear suitable protective clothing.

9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance	No data available
Physical state	Solid
Colour	No data available
Odour	No data available
Odour threshold	No data available
pH	No data available
Melting point/freezing point	No data available
Initial boiling point and boiling range	No data available
Flash point	No data available
Evaporation rate	No data available
Flammability(solid, gas)	No data available
Upper/lower flammability or explosive limits	No data available
Vapour pressure	No data available
Solubility(ies)	No data available
Vapour density	No data available
Relative density	No data available
n-octanol/water partition coefficient	No data available
Auto ignition temperature	No data available
Decomposition temperature	No data available
Viscosity	No data available
Molecular weight(mass)	No data available

10. STABILITY AND REACTIVITY

1) Stability and hazardous reactivity

- Containers may explode when heated.
- Fire may produce irritating, corrosive and/or toxic gases.
- Non-combustible, substance itself does not burn but may decompose upon heating to produce corrosive and/or toxic fumes.
- Some may burn but none ignite readily.

2) Conditions to avoid

- 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 combustion.
- Irritating, corrosive and/or toxic gas.

11. TOXICOLOGICAL INFORMATION

1) Exposure route information

○ Inhalation

- May cause respiratory irritation

○ Skin Contact

- Causes skin irritation

○ Eye Contact

- Causes serious eye irritation

○ Ingestion

- Not applicable

2) Health hazard information

○ Acute toxicity

- Acute toxicity(Oral) PRODUCT : Not classified

  - ABS resin : No data available

  - 2-Propenenitrile polymer with ethenylbenzene and (1-methylethenyl)benzene : No data available

  - Acrylonitrile-styrene copolymer : LD50 1800 ㎎ / ㎏ experimental species: Rat, Source: National Library of Medicine(NLM)(http://toxnet.nlm.nih.gov/cgi-bin/sis/htmlgen?CHEM)

- Acute toxicity(Dermal) PRODUCT : Not classified

  - ABS resin : No data available

  - 2-Propenenitrile polymer with ethenylbenzene and (1-methylethenyl)benzene : No data available

  - Acrylonitrile-styrene copolymer : No data available

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

- ABS resin : No data available
- 2-Propenenitrile polymer with ethenylbenzene and (1-methylethenyl)benzene : No data available
- Acrylonitrile-styrene copolymer : No data available

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

- ABS resin : No data available
- 2-Propenenitrile polymer with ethenylbenzene and (1-methylethenyl)benzene : No data available
- Acrylonitrile-styrene copolymer : No data available

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

- ABS resin : No data available
- 2-Propenenitrile polymer with ethenylbenzene and (1-methylethenyl)benzene : No data available
- Acrylonitrile-styrene copolymer : No data available

○ Skin corrosion/irritation PRODUCT : Category 2

- ABS resin : No data available
- 2-Propenenitrile polymer with ethenylbenzene and (1-methylethenyl)benzene : No data available
- Acrylonitrile-styrene copolymer : It causes skin irritation.

○ Serious eye damage/eye irritation PRODUCT : Category 2

- ABS resin : No data available
- 2-Propenenitrile polymer with ethenylbenzene and (1-methylethenyl)benzene : No data available
- Acrylonitrile-styrene copolymer : It causes eye irritation

○ Respiratory sensitization PRODUCT : Not classified

- ABS resin : No data available
- 2-Propenenitrile polymer with ethenylbenzene and (1-methylethenyl)benzene : No data available
- Acrylonitrile-styrene copolymer : No data available

○ Skin sensitization PRODUCT : Not classified

- ABS resin : No data available
- 2-Propenenitrile polymer with ethenylbenzene and (1-methylethenyl)benzene : No data available
- Acrylonitrile-styrene copolymer : No data available

○ Carcinogenicity PRODUCT : Not classified

- ABS resin : No data available
- 2-Propenenitrile polymer with ethenylbenzene and (1-methylethenyl)benzene : No data available
- Acrylonitrile-styrene copolymer : 3 (IARC), Source: IARC

○ Germ cell mutagenicity PRODUCT : Not classified

- ABS resin : No data available
- 2-Propenenitrile polymer with ethenylbenzene and (1-methylethenyl)benzene : No data available
- Acrylonitrile-styrene copolymer : No data available

○ Reproductive toxicity PRODUCT : Not classified

- ABS resin : No data available
- 2-Propenenitrile polymer with ethenylbenzene and (1-methylethenyl)benzene : No data available
- Acrylonitrile-styrene copolymer : No data available

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

- ABS resin : No data available
- 2-Propenenitrile polymer with ethenylbenzene and (1-methylethenyl)benzene : No data available
- Acrylonitrile-styrene copolymer : Inhalation Irritating to pray

○ Specific target organ toxicity repeated exposure PRODUCT : Not classified

- ABS resin : No data available
- 2-Propenenitrile polymer with ethenylbenzene and (1-methylethenyl)benzene : No data available
- Acrylonitrile-styrene copolymer : No data available

○ Aspiration hazard PRODUCT : Not classified

- ABS resin : No data available
- 2-Propenenitrile polymer with ethenylbenzene and (1-methylethenyl)benzene : No data available
- Acrylonitrile-styrene copolymer : No data available

12. ECOLOGICAL INFORMATION

1) Aquatic toxicity

- Fish>PRODUCT : Not classified
  - ABS resin : LC50 11.5 ㎎ / ℓ 96 hr Pimephales promelas, Source: ECOTOX
  - 2-Propenenitrile polymer with ethenylbenzene and (1-methylethenyl)benzene : No data available
  - Acrylonitrile-styrene copolymer : No data available
- Crustacea>PRODUCT : Not classified
  - ABS resin : No data available
  - 2-Propenenitrile polymer with ethenylbenzene and (1-methylethenyl)benzene : No data available
  - Acrylonitrile-styrene copolymer : No data available
- Aquatic algae>PRODUCT : Not classified
  - ABS resin : No data available
  - 2-Propenenitrile polymer with ethenylbenzene and (1-methylethenyl)benzene : No data available
  - Acrylonitrile-styrene copolymer : No data available

2) Persistence and degradation

- n-octanol water partition coefficient>PRODUCT : Not classified
  - ABS resin : No data available
  - 2-Propenenitrile polymer with ethenylbenzene and (1-methylethenyl)benzene : No data available
  - Acrylonitrile-styrene copolymer : No data available
- Degradation>PRODUCT : Not classified

- ABS resin : No data available
- 2-Propenenitrile polymer with ethenylbenzene and (1-methylethenyl)benzene : No data available
- Acrylonitrile-styrene copolymer : No data available

● Biodegradation>PRODUCT : Not classified

- ABS resin : No data available
- 2-Propenenitrile polymer with ethenylbenzene and (1-methylethenyl)benzene : No data available
- Acrylonitrile-styrene copolymer : No data available

3) Bioaccumulative potential>PRODUCT : Not classified

- ABS resin : No data available
- 2-Propenenitrile polymer with ethenylbenzene and (1-methylethenyl)benzene : No data available
- Acrylonitrile-styrene copolymer : No data available

4) Mobility in soil>PRODUCT : Not classified

- ABS resin : No data available
- 2-Propenenitrile polymer with ethenylbenzene and (1-methylethenyl)benzene : No data available
- Acrylonitrile-styrene copolymer : No data available

5) Other adverse effects>PRODUCT : Not classified

- ABS resin : No data available
- 2-Propenenitrile polymer with ethenylbenzene and (1-methylethenyl)benzene : No data available
- Acrylonitrile-styrene copolymer : No data available

13. DISPOSAL CONSIDERATIONS

1) Disposal methods

- Every commercial waste producer shall either treat wastes generated from his/her place of business by him/herself or commission the treatment of such wastes to a person who has license for a waste treatment business under Article 26(3), a person who recycles of such wastes under Article 44(2), a person who has installed and operates a waste disposal facility under Article 4 or 5, a person who has completed the registration of a business of discharging wastes into the sea under Article 18 of the Marine Environment Management Act.

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

- Do not allow spill material to enter sewers, storn water drains, soil, etc.

14. TRANSPORT INFORMATION

1) UN No. : Not applicable

2) Proper shipping name : Not applicable

3) Class or division : Not applicable

4) Packing group : Not applicable

5) Marine pollutant : Not applicable

6) Special safety response for transportation or transportation measure :

Emergency measures in case of fire : Not applicable

Emergency measures in the effluent : Not applicable

- ADR

· Tunnel restriction code : Not applicable

- IMDG

· Marine pollutant : Not applicable

- Air transport(IATA)

· UN No. : Not applicable

· Proper shipping name : Not applicable

· Class or division : Not applicable

· Packing group : Not applicable

15. REGULATORY INFORMATION

● Global Inventory - EU. European Inventory of Existing Commercial Chemical Substances (EINECS)

Not applicable

● ETC regulation - EU. Regulation 1005/2009/EC on substances that deplete the ozone layer, Annex I, Controlled Substances (L286, Vol. 52, 31 Octobe

Not applicable

● ETC regulation - EU. Directive 2010/75/EU on Industrial Emissions (IPPC), Annex II, L 334/17, 24 November 2010

Not applicable

● ETC regulation - EU. Regulation No 850/2004 prohibiting and restricting persistant organic pollutants (POPs), as last amended by Regulation No 51

Not applicable

● ETC regulation - EU. REACH, Annex XVII, Restrictions on manufacture, placing on the market and use of certain dangerous substances (Reg 1907/2006

Not applicable

● ETC regulation - EU. GHS Classification. CLP Reg. No 1272/2008 of 16 Dec 2008, Annex VI, Table 3.1, List of harmonized classification & labelling

Not applicable

● ETC regulation - EU. Regulation 1005/2009/EC on substances that deplete the ozone layer, Annex II, New Substances (L286, Vol. 52, 31 October 2009

Not applicable

● ETC regulation - EU. REACH, Annex XIV, Substances Subject to Authorization, as amended through Regulation No 895/2014 of 19 August 2014

Not applicable

● ETC regulation - EU. Directive 2012/18/EU on major accident hazards involving dangerous substances, Annex I, OJ (L 197)1, 24 July 2012

Not applicable

● ETC regulation - EU. Regulation EU No. 649/2012, Annex V, Chemicals and articles subject to export ban, OJ L 201, p. 60, 27 July 2012

Not applicable

● ETC regulation - EU. Annexes I, II (F-gases subject to emission limits/reporting), IV (GWPs for mixture calculations), Reg. 517/2014/EU on fluori

Not applicable

16. OTHER INFORMATION

1) Reference

- CERI
- Corporate Solution From Thomson Micromedex(http://csi.micromedex.com)
- Directivw 87/302/EEC, GLP . IUCLID
- ECHA
- ECHA registration materials
- ECOTOX
- EPI Suite
- EPISUITE
- EU CLP
- EU IUCLID
- HSDB
- IUCLID
- NCIS existing chemical safety testing
- National Institute of Technology and Evaluation(NITE)(http://www.safe.nite.go.jp/ghs/h18_bunrui.html)
- National Library of Medicine(NLM)(http://toxnet.nlm.nih.gov/cgi-bin/sis/htmlgen?CHEM)
- OECD SIDS
- OECD SIDS, EU IUCLID
- OECD TG 301 C . OECD SIDS
- OECD TG404, OECD SIDS
- OECD TG423, Ministry of existing chemical safety testing (2001-2004)

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○ Last revised history :

4) Other