



Material Safety Data Sheet

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p-Xylene

1. Chemical Product & Company Identification

A. Product Name : **p-xylene**

B. Intended Use : PTA(TPA) materials, synthetic resins, synthetic fiber materials, solvent

C. Manufacturer/Supplier :

1) Manufacturer :

Hanwha TotalEnergies Petrochemicals Co.,Ltd			
103, Dokgot2-Ro, Daesan-Eup, Seosan-Si, Chungnam, 31900, Korea			
T e l e p h o n e	82-41-660-6415	F a x	82-41-660-6637

2) Supplier : (Product information: 041-660-6180)

Hanwha TotalEnergies Petrochemicals Co.,Ltd			
17~20F Hanwha Finance Plaza, 92, Sejong-daero, Jung-gu, Seoul 04525, Korea			
T e l e p h o n e	82-2-3415-9363	F a x	82-2-3415-9370

2. Hazard Identification

A. Hazard Category :

1) Physicochemical Hazards - Flammable liquid : Category 3

2) Health Hazards - Acute toxicity (dermal) : Category 4

Acute toxicity (inhalation: vapor) : Category 4

Skin corrosion/irritation : Category 2

Serious eye damage/irritation : Category 2

Specific target organ toxicity(Single exposure) : Category 3
(Narcotic effects)

Specific target organ toxicity(Repeated exposure) : Category 1

3) Environmental Hazards - Not Classified

B. Precautionary Statement(s) & Warning Label

1) Symbol :



2) Signal Word : Danger



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3) Hazard Statement(s) :

- H226 Flammable liquid and vapour
- H312 Harmful in contact with skin
- H315 Causes skin irritation
- H319 Causes serious eye irritation
- H332 Harmful if inhaled
- H336 May cause drowsiness and dizziness.
- H372 Causes damage to organs through prolonged or repeated exposure (Refer Section SDS 11)

4) Precautionary Statement(s) :

■ Prevention

- 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. Flammable liquids (chapter 2.6) 1, 2, 3
- 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 hands thoroughly after handling.
- P270 Do not eat, drink or smoke when using this product.
- P271 Use only outdoors or in a well-ventilated area.
- 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): 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.
- P312 Call a POISON CENTER or doctor/physician if you feel unwell.
- P314 Get medical advice/attention if you feel unwell.
- P321 Specific treatment
- P322 Specific measures
- P332+P313 If skin irritation occurs: Get medical advice/attention.



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

P362 Take off contaminated clothing and wash before reuse.

P363 Wash contaminated clothing before reuse.

P370+P378 In case of fire: Use Suitable extinguishing media for extinction(Refer Section MSDS 5).

■ 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 in accordance with local/regional/national/international regulation

C. Other hazards

NFPA ratings : Health=1, Fire=3, Reactivity=0

3. Composition / Information on ingredients

Chemical Name	Other Name	CAS No. or EU No.	(%)
p-Xylene	1,4-DIMETHYL-BENZENE	106-42-3 (EC No. 203-396-5)	100%

4. First Aid Measures

A. Eye Contact : Flush thoroughly with water at least 15minutes.

Get medical assistance.

Do not rub your eyes.

Go to the hospital immediately if symptoms(flare, irritate) occur.

Remove contact lenses if worn.

B. Skin Contact : In case of massive exposure, remove contaminated clothing while showering with water. Call a physician. Discard clothing and shoes.

Flush skin with plenty of wter for at least 15 minutes while removing contaminated clothing and shoes.

Laundering enough contaminated clothing before reuse.

Go to the hospital immediately if symptoms(flare, irritate) occur.



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Prevent the spread of the skin. Wash thoroughly after handling.

C. Inhalation : Inhalation of vapors may be irritating to the nose and throat.

Inhalation of high concentrations may result in nausea, vomiting, headache, ringing in the ears, and severe breathing difficulties which may be delayed in onset. Substernal pain, cough, and hoarseness are also reported. High vapor concentrations are anesthetic and central nervous system depressants. Get medical aid.

When exposed to large amounts of steam and mist, move to fresh air.

Take specific treatment if needed.

If breathing is stopped or irregular, give artificial respiration and supply oxygen.

D. Ingestion : Ingestion causes burning sensation in mouth and stomach, nausea, vomiting and salivation. Minute amounts aspirated into the lungs can produce a severe hemorrhagic pneumonitis with severe pulmonary injury or death.

About whether I should induce vomiting Take the advice of a doctor.

Rinse your mouth with water immediately.

Get medical attention immediately.

E. Likely Acute or Delayed Symptoms/Effects :

1) Inhalation

- Short term exposure : irritation, nausea, vomiting, headache, fatigue, unconsciousness

- Long term exposure : headache, loss of appetite, nervousness and pale skin

2) Skin contact

- Short term exposure : irritation

- Long term exposure : skin rash

3) Eye contact

- Short term exposure : irritation

- Long term exposure : high concentrations of vapor may cause reversible eye damage

4) Ingestion

- Short term exposure : may damage the liver and kidneys.

- Long term exposure : damage of generation organ

F. Emergency measure / Notes to physician : Give to oxygen.

Notify medical personnel of contaminated situations and have them take appropriate protective measures.



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5. Fire Fighting Measures

A. Extinguishing media :

- 1) Suitable extinguishing media
: Use foam, dry chemical, carbon dioxide
- 2) Unsuitable extinguishing media : Avoid use of water jet for extinguishing
- 3) Unusual fire(big fire) : Do use extinguishing media with water spray or fog.

B. Unusual fire & Explosion hazard :

- 1) Hazardous combustion product : Carbon oxides
(carbon monoxide (CO, carbon dioxide (CO₂))

- 2) Fire & Explosion hazard :

Flammable gas. Forms explosive mixtures with air and oxidizing agents.

Container may rupture due to heat of fire. Do not extinguish flames due to possibility of explosive re-ignition. Vapors form from this product and may travel or be moved by air currents and ignited by pilot lights, other flames, smoking, sparks, heaters, electrical equipment, static discharges, or other ignition sources at locations distant from product handling point.

Explosive atmospheres may linger.

Before entering area, especially confined areas, check atmosphere with approved device.

Heating may cause expansion or decomposition leading to violent rupture of containers.

C. Special fire fighting procedure / protection of firefighters :

Wear self-contained breathing apparatus and protective clothing to prevent contact with skin and eyes. Flammable, high-pressure gas. Evacuate all personnel from danger area.

Move containers from fire area, if you can do without the risk.

Cool containers with water until well after fire is out.

Keep unauthorized personnel out.

Withdraw immediately in case of rising sound from venting safety devices or discoloration of tank.

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.

Use water delivered as a fine spray to control fire and cool adjacent area.



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6. Accidental Release Measures

A. Personal precautions :

Shut off all sources of ignition.

Wear self-contained breathing apparatus.

Flammable, high-pressure gas. Forms explosive mixtures with air.

Wear proper personal protective apparatus as indicated in Section 8 and avoid skin contact and inhalation.

Ventilate closed spaces before entering.

Do not touch spilled material. Stop leak if you can do it without risk.

Handling the damaged containers or spilled material after wearing protective equipment.

Do not direct water at spill or source of leak.

Avoid skin contact and inhalation.

Keep unauthorized people away, isolate hazard area and deny entry.

B. Environmental precautions :

Prevent runoff and contact with waterways, drains or sewers.

If large amounts have been spilled, inform the relevant authorities.

1) atmosphere release : Use water spray to disperse the vapors

2) soil release : Collect liquid in an appropriate container or absorb with an inert material

3) underwater release : Do not flush to sewer

C. Spill cleanup methods :

1) Small liquid spill

: Collect liquid in an appropriate container or absorb with an inert material.

sand or other non-combustible material, please let use absorption.

Wipe off the solvent. Dike for later disposal. Do not use plastic containers.

2) Large spillages : Isolate hazard area. Keep unnecessary and unprotected personnel from entering. Stay upwind and keep out of low areas.

Dike for later disposal.

Notification to central government, local government. When emissions at least of the standard amount

Dispose of waste in accordance with local regulation.

Appropriate container for disposal of spilled material collected.



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7. Handling and Storage

- A. Handling : Use only with adequate ventilation. Keep away from heat, sparks and flame.
Avoid breathing vapor. Use non-sparking type tools and equipment.
Avoid direct physical contact.
Get the manual before use.
Refer to Engineering controls and personal protective equipment.
Do not handle until all safety precautions have been read and understood.
Do not inhale the steam prolonged or repeated.
- B. Storage : Store and use with adequate ventilation.
There must be no sources of ignition. All electrical equipment in storage areas must be explosion-proof.
Save in cool, dry and well ventilated place.
Check regularly for leaks.
Please pay attention to incompatibilities materials and conditions to avoid.
Keep sealed when not in use.
No open fire.
Collected them in sealed containers.

8. Exposure Controls / Personal Protection

- A. Exposure limit value :
- 1) ACGIH :
 - TLV-TWA : 100ppm
 - TLV-STEL : 150ppm
 - 2) OSHA : 100ppm
- B. Engineering control : Adequate ventilation(localize ventilation) should be provided in workplaces. Use non sparking tools.
A system of local and/or general exhaust is recommended to keep employee exposures above the Exposure Limits. Local exhaust ventilation is generally preferred because it can control the emissions of the contaminant at its source, preventing dispersion of it into the general work area. The use of local exhaust ventilation is recommended to control emissions near the source.



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C. Personal protective equipment

- 1) Respiratory protection : If required to control exposure, use only suitable respirators and components tested and approved under appropriate government standards such as NIOSH.
Under conditions of frequent use or heavy exposure, Respiratory protection may be needed.
Respiratory protection is ranked in order from minimum to maximum.
Consider warning properties before use.
Any chemical cartridge respirator with organic vapor cartridge(s).
Any chemical cartridge respirator with a full facepiece and organic vaporcartridge(s).
Any air-purifying respirator with a full facepiece and an organic vapor canister.
For Unknown Concentration or Immediately Dangerous to Life or Health : Any supplied-air respirator with full facepiece and operated in a pressure-demand or other positive-pressure mode in combination with a separate escape supply. Any self-contained breathing apparatus with a full facepiece.
- 2) Eye protection – Wear approved chemical safety glasses or goggles where eye exposure is reasonably probable.
Eye wash fountain is recommended.
- 3) Hand protection – Wear protective gloves. Butyl rubber gloves are recommended.
- 4) Skin / Body protection – Wear appropriate chemical resistant protective clothing.

9. Physical and Chemical Properties

- A. Appearance(physical state, color etc.) : colorless liquid
- B. Odor : sweet odor
- C. Odor Threshold : Not available
- D. pH : Not available
- E. Melting point/Freezing point : 13℃
- F. Boiling point/range : 138℃
- G. Flash point : 27℃(c.c)
- H. Evaporation rate : 0.7(Butyl acetate=1)



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- I. Flammability (solid, liquid): Not available
- J. Flammability Limit (lower/upper) : 1.1~7.0
- K. Vapor pressure : 91.774mmH₂O(@20°C)
- L. Solubility in water : 0.016g/100ml(@25°C)
- M. Vapor density(Air=1) : 3.7 (calculated value)
- N. Specific gravity : 0.86
- O. Partition Coefficient(n-Octanol/water) : 3.15 (= log Pow)
- P. Auto-ignition temperature : 528°C
- Q. Thermal decomposition : Not available
- R. Viscosity : Not available
- S. Molecular weight : 106.17

10. Stability and Reactivity

- A. Stability : Stable under ordinary conditions of use and storage
- B. Possibility of hazardous reaction : NO
- C. Conditions to avoid : Heat, flames, ignition sources and incompatibles
- D. Incompatible material :
 - May ignite or explode in contact with **strong oxidisers, 1,3-dichloro-5,5-dimethylhydantoin, uranium fluoride.**
 - Attack some plastics, rubber and coatings.
 - May generate electrostatic charges on flow or agitation due to low conductivity.
 - Vigorous reactions, sometimes amounting to explosions, can result from the contact between aromatic rings and strong oxidising agents.
 - Aromatics can react exothermically with **bases and with diazo compounds.**
- E. Hazardous decomposition products : Hydrocarbon compounds, Carbon oxides(carbon monoxide (CO, carbon dioxide (CO₂))

11. Toxicological Information

- A. Route of exposure
 - 1) Inhalation : Harmful if inhaled. May cause drowsiness and dizziness.
 - 2) Ingestion : Not available
 - 3) Skin contact : Harmful in contact with skin
 - 4) Eye contact : Causes serious eye irritation



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B. Delayed and immediate effects and also chronic effects from short and long term exposure

1) Acute toxicity :

- Oral : Not available
- Dermal : LD50 = 1000 ~ 2000 mg/L
- Inhalation : mouse LC50 = 16.9~22.8mg/L , exist by steam at air.

2) Skin corrosion/irritation : Skin corrosion/irritation category 2 according to in according to Poisonous substances Announcement on The Toxic Chemical Control Act in Korea(TCCA)

3) Serious eye damage/irritation

: (rabbit) moderate irritant(Draize test, vapour), induce irritation to eyes.

4) Respiratory sensitization : Not available

5) Skin sensitization : Not available

6) Carcinogenicity :

- MOL Notice : Not available
- OSHA : Not available
- NTP : Not available
- IARC(GROUP) : 3
- ACGIH : A4
- EC : Not available

7) Germ cell mutagenicity : Not available

8) Reproductive toxicity : Not available

9) STOT-single exposure : (rat) Exercise capacity did not decrease slightly at 150-1800 ppm

10) STOT-repeated exposure

: (rat) Damage was observed by exposed results for 13th week with 805, 460, 175 ppm (3.5, 2.0, 0.77 mg/l). (rat) Pathologic change to shape of liver did not appear for 1 year with 4750 mg/cu m/8 hr/day but Enzyme of liver increased. Weights of liver increased, but hexobarbital sleeping time and bromsulfothalein retention decreased. (rat) Weights slightly decreased by exposed results with 3500 ppm (15,200 mg/cu m) but weights of liver increased.

11) Aspiration hazard : Not available

12. Ecological Information

A. Ecotoxicity :

- 1) Fishes : Not available
- 2) Crustacea : Not available
- 3) Seaweeds : Not available



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B. Persistence and Degradability :

- 1) Persistence : Not available
- 2) Degradability : Not available

C. Bioaccumulation potential :

- 1) Biodegradation : Not available
- 2) Bioaccumulation : Not available

D. Mobility in soil : Not available

E. Hazardous to the ozone layer : Not classified

F. Other adverse effects : Not available

13. Disposal Consideration

A. Disposal method : Dispose in accordance with all applicable regulations.

Since more than two kinds of designated waste is mixed, it is difficult to treat separately, then can be reduction or stabilization by incineration or similar process.

If water separation is possible, pre-process with Water separation process.

Dispose by incineration.

Do disposal as neutralization, hydrolysis and oxidation-reduction.

High temperature incinerating, high-temperature melt processing will be landfilled

Solidification processing.

B. Disposal instruction : The user of this product must disposal by oneself or entrust to waste disposer or person who other's waste recycle and dispose, person who establish and operate waste disposal facilities.

Dispose of waste in accordance with all applicable laws and regulations.

C. Waste code : Not available



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14. Transportation Information

- A. UN classification : UN1307
- B. Proper shipping name : XYLENES
- C. Class/division : 3
- D. Packing group : III
- E. Marine pollutant : Applicable(Y)
- F. Special precautions for user related to transport or transportation measures
 - Local transport follows in accordance with Dangerous goods Safety Management Law.
 - Package and transport follow in accordance with Department of Transportation (DOT) and other regulatory agency requirements.
 - EmS FIRE SCHEDULE : F-E (Non-water-reactive flammable liquids)
 - EmS SPILLAGE SCHEDULE : S-D (Flammable liquids)

15. Regulatory Information

- A. Additional national and/or international regulatory information
 - Information of EU Classification :
 - Classification :
 - [p-Xylene] : R10 Xn; R20/21 Xi; R38
 - Risk Phrases :
 - [p-Xylene] : R10, R20/21, R38
 - Safety Phrase :
 - [p-Xylene] : S2, S25
 - U.S. Federal regulations :
 - OSHA PROCESS SAFETY (29CFR1910.119) : Not available
 - CERCLA Section 103 (40CFR302.4) :
 - [p-Xylene] : 45.3599 kg 100 lb
 - EPCRA Section 302 (40CFR355.30) : Not available
 - EPCRA Section 304 (40CFR355.40) : Not available
 - EPCRA Section 313 (40CFR372.65) :
 - [p-Xylene] : Applicable
 - Rotterdam Convention listed ingredients : Not available
 - Stockholm Convention listed ingredients : Not available
 - Montreal Protocol listed ingredients : Not available

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16. Other Information

This information relates to the specific material designated and may not be valid for such material used in combination with any other materials or in any process. Such information is to the best of our knowledge and belief, accurate and reliable as of the date compiled. However, no representation, warranty or guarantee is made as to its accuracy, reliability on completeness. It is the user's responsibility to satisfy himself as to the suitability and completeness of such information for his own particular use. We do not accept liability for any loss or damage that may occur from the use of this information nor do we offer warranty against patent infringement.

A. Issue date : 2009.11.18

B. Last revision : 2022.04.12, Rev 6

– Rev.6 : Change company name and logo