SAFETY DATA SHEET

XYLENE

Jan 2023, Version 10

According to Regulation (EC) No. 1907/2006 (REACH)

Section 1. IDENTIFICATION OF THE SUBSTANCE/PREPARATION AND OF THE COMPANY/ UNDERTAKING

1.1 Product identifier

Substance Name: XYLENES
Trade name: XYLENE
Synonyms: xylene mixture of isomers
Chemical formula: C_8H_{10}
Product type: Aromatic hydrocarbons, UVCB substance
EC number: 905-588-0
REACH registration no(s): 01-2119488216-32-0020

1.2 Relevant identified uses of the substance or mixture and uses advised against

Industrial use:

Manufacture of substance

Distribution

Use as an intermediate

Formulation in materials

Uses in coatings (industrial)

Cleaning agent (industrial)

Lubricants (industrial)

Binder (industrial)

Carburetor fuel (industrial)

Polymer production (industrial)

Polymer processing (industrial)

Functional fluids (industrial)

Oil fields (industrial)

Laboratory use (industrial)

Explosives (industrial)

Rubber production and processing (industrial)

Mining chemicals (industrial)

Professional use:

Uses in coatings (professional)

Cleaning agent (professional)

Lubricants (professional)

Binder (professional)

Use in agrochemicals (professional)

Carburetor fuel (professional)

Polymer processing (professional)

Functional fluids (professional)

Oil fields (professional)

Road construction (professional)

Laboratory use (professional) Page 287

Consumer use:

Uses in coatings (consumer)

Cleaning agent (consumer)

Lubricants (consumer)

Use in agrochemicals (consumer)

Carburetor fuel (consumer)

Functional fluids (consumer)

Uses advised against: This product is not recommended for any industrial, professional or consumer use other than the Identified Uses above.

1.3 Details of the supplier of the safety data sheet

Company/undertaking identification

Supplier/Manufacturer: GADIV PETROCHEMICAL INDUSTRIES Ltd.
P.O.B 4 HAIFA

Tel: +972-4-8788020
Fax: +972-4-8788018
E-mail: Gadiv@bazan.co.il

1.4 Emergency telephone number

Emergency telephone number (including hours of operation): +972-4-8788020

Section 2. HAZARDS IDENTIFICATION

2.1 Classification of the substance or mixture

Classification in accordance to Regulation (EC) No. 1272/2008 (CLP/GHS)

Physical / Chemical Hazards:
Flammable Liquid Category 3 H226: Flammable liquid and vapour

Health Hazards:
Acute Toxicity Category 4 H312: Harmful in contact with skin
Acute Toxicity Category 4 H332: Harmful if inhaled
Skin Irritation Category 2 H315: Causes skin irritation
Eye Irritation Category 2 H320: Causes eye irritation
Aspiration Toxicity Category 1 H304: May be fatal if swallowed and enters airways

Specific Target Organ Toxicity, Single Exposure, Category 3 H335: May cause respiratory irritation
Specific Target Organ Toxicity, Repeated Exposure, Category 2 H373: May cause damage to organs through prolonged or repeated exposure

Environmental Hazards:
Not Classified

2.2 Label elements

Labeling in accordance with Regulation 1272/2008 (CLP)

Hazard pictograms:

Signal word: Warning

Hazard statements:

H226: Flammable liquid and vapour.
H304: May be fatal if swallowed and enters airways.
H312: Harmful in contact with skin.
H315: Causes skin irritation.
H332: Harmful if inhaled.
H335: May cause respiratory irritation.
H373: May cause damage to organs through prolonged or repeated exposure.

Precautionary Statements:

P210: Keep away from heat/sparks/open flames/hot surfaces. No smoking.
P243: Take precautionary measures against static discharge.
P280: Wear protective gloves/protective clothing/eye protection/face protection.
P260: Do not breathe fume / gas / mist / vapours / spray.
P303+P361+P353: IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower.
P332+P313: IF skin irritation occurs: Get medical advice/attention.
P301+P310: IF SWALLOWED: Immediately call a POISON CENTER or doctor / physician.
P331: Do NOT induce vomiting.

2.3 Other hazard

Does not meet the criteria for PBT or vPvB.
This material can accumulate electrical static discharge, and undergo electrical ignition.

Section 3. COMPOSITION/INFORMATION ON INGREDIENTS

3.1 Substance

Chemical characterization: Xylene (isomeric mixture)
Reaction Mass of Ethylbenzene and Xylene

EC-number: 905-588-0

Ingredient name	CAS number	EC number	%	EU Classification	GHS Classification
XYLENE, MIXED ISOMERS	1330-20-7	215-535-7	85-100%	R10 Xn; R20/21 R65 Xi; R36/37/38	Flam. Liq. 3 H226 Acute Tox. 4 H312 Acute Tox. 4 H332 Skin Irrit. 2 H315 Eye Irrit. 2 H319 Asp. Tox. 1 H304 STOT SE 3 H335 STOT RE 2 H373
Ethylbenzene	100-41-4	202-849-4	<15	F; R11 Xn; R20	Flam. Liq. 2 H225 Acute Tox. 4 H332

There are no additional ingredients present which, within the current knowledge of the supplier and in the concentrations applicable, are classified as hazardous to health or the environment and hence require reporting in this section.

Occupational exposure limits, if available, are listed in section 8.
See section 16 for the full text of the H-statements and R-phrases declared above.

Section 4. FIRST AID MEASURES

Product-Specific hazards:

Flammable liquid and vapour.
Harmful in contact with skin and if inhaled.
Causes skin irritation.
Causes eye irritation.
May cause respiratory irritation.

Risk of serious damage to the lungs if swallowed (by subsequent aspiration).

4.1 Description of first aid measures

General advice:
Take care to self-protect by avoiding becoming contaminated.
Use adequate respiratory protection
Move contaminated patient(s) out of the dangerous area.
Take off all contaminated clothing and shoes.
Seek medical assistance - show the safety data sheet or label if possible

Inhalation:
Move to fresh air. Do not leave the victim unattended. Keep patient warm and at rest.
Seek immediate medical attention. If breathing is difficult, give oxygen if possible or assisted ventilation, (do not use mouth to mouth.(If unconscious, place in recovery position. In the event of cardiac arrest (no pulse), apply cardiopulmonary resuscitation.

Skin contact:
Take off all contaminated clothing and shoes. Immediately flush affected area with plenty of soap and water – continue for at least 15 minutes. If there are signs of irritation or other symptoms seek medical attention.

Eyes contact:
Remove any contact lenses. Flush eyes with water thoroughly and continuously for at least 15 minutes. Keep eye wide open while rinsing. Protect unharmed eye. If there are signs of irritation or other symptoms seek medical attention. If eye irritation, pain, swelling, lachrimation or photophobia persists, patient should be referred to a specialist health care facility.

Ingestion:
Do NOT induce vomiting, if vomiting does occur, have victim lean forward to reduce risk of aspiration. Get medical
attention immediately. Clean mouth with water and drink afterwards plenty of water.
Do not give milk or alcoholic beverages. Never give anything by mouth to an unconscious person.

4.2 Most important symptoms and effects, both acute and delayed

Causes irritation to the skin. This irritation can result in redness and swelling of the skin. Repeat contact with the skin may cause it to become dry and cracked.

Causes eye irritation. This irritation can result in redness and swelling of the eyes.

May cause respiratory irritation. If inhalation occurs, signs and symptoms may include sore throat, headache, nausea, coughing, choking, wheezing, difficulty in breathing, chest congestion, shortness of breath and may cause transient central nervous system (CNS) depression.

4.3 Indication of any immediate medical attention and special treatment needed

Notes to physician
Treat symptomatically. In case of ingestion, Ipecac-induced emesis is not recommended. Consider use of charcoal as a slurry (240mL water/30 g charcoal). Usual dose: 25 to 100 g in adults. If determined necessary (and under qualified medical supervision), the stomach should be emptied by gastric lavage with the airway protected by endotracheal intubation.

Section 5: FIRE-FIGHTING MEASURES

5.1 Extinguishing media

LARGE FIRE: Use water spray, water fog or foam. DO NOT use direct water jet.

SMALL FIRE: Dry powder or carbon dioxide (CO2) extinguisher, dry sand or firefighting foam.

Unsuitable Extinguishing Media: Direct water jet.

Simultaneous use of foam and water on the same surface is to be avoided as water destroys the foam.

5.2 Unusual fire hazards arising from the substance or mixture

Extremely flammable. Hazardous material.

Hazardous combustion products:

Carbon monoxide, carbon dioxide and unburned hydrocarbons (smoke).

5.3 Fire Fighting Instructions

Vapour is denser than air – flashback may be possible over considerable distances.

Containers may explode under fire conditions - use water spray to cool unopened containers.

Do not allow run-off from firefighting to enter drains or water courses – may cause explosion hazard in drains and may reignite on surface water.

5.4 Special protective measures for firefighters

Wear an approved positive pressure self-contained breathing apparatus in addition to standard firefighting gear.

Other: All combustion residues and contaminated water from fire-fighting should be disposed of according to local regulations

Section 6: ACCIDENTAL RELEASE MEASURES

6.1 Prevention of secondary risk

Eliminate all ignition sources (no smoking, flares, sparks or flames in immediate area).

6.2 Personal precautions

Wear personal protective equipment. Avoid breathing vapours or mist. Ensure adequate ventilation and absence of sources of ignition. Beware of accumulation of vapours in low areas or contained areas, where explosive concentrations may occur.

6.3 Environmental precautions

Land spillage: Prevent further leakage or spillage if safe to do so. Prevent spillage from entering drains, sewer, basement or confined areas.

Water spillage: Prevent further leakage or spillage if safe to do so. If the spillage contaminates rivers, lakes or drains inform respective authorities.

6.4 Spill cleanup methods

Land spillage: Contain spillage. Small spillages can be taken up by collection with non-combustible absorbent material, (e.g. sand, earth, diatomaceous earth, vermiculite) and placed in container for disposal according to local / national regulations.

For larger spillages on water contain with booms or barriers, use surface acting agents to thicken spilled materials.

Remove trapped material with suction hoses.

Water spillage: If the Flash Point exceeds the Ambient Temperature by 10 deg C or more, use containment booms and remove from the surface by skimming or with suitable absorbents when conditions permit. If the Flash Point does not exceed the Ambient Air Temperature by at least 10 deg C, use booms as a barrier to protect shorelines and allow material to evaporate. Seek the advice of a specialist before using dispersants.

6.5 Further accidental release measures

Spillages of liquid product will create a fire hazard and form an explosive atmosphere. Ensure all equipment is non sparking or electrically bonded. Avoid direct contact with released material. Stay upwind. Keep non-involved personnel away from the area of spillage. Ensure adequate ventilation, especially in confined areas.

6.6 Reference to other sections

See Section 1 for emergency contact information.
See Section 8 for information on appropriate personal protective equipment.
See Section 13 for additional waste treatment information.

Section 7: HANDLING AND STORAGE

7.1 Precautions for safe handling

Prevention of user exposure:

Use only in well ventilated areas.
The vapor is heavier than air, beware of accumulation in pits and confined spaces.

Prevention of fire and explosion:

Avoid all sources of ignition.
Use proper bonding and/or grounding procedures.
This material is a static accumulator: Take precautionary measures against static discharges.
Avoid contact with heat and ignition sources and oxidizing agents.
Handle empty containers with care; vapour residue may be flammable.
The product will float on water and can be reignited on surface water.
Ensure that all relevant regulations regarding explosive atmospheres, and handling and storage facilities of flammable products are followed.

Precautions while moving the product:

Containers should be opened only under exhaust ventilation hood.
Do not allow splash filling of bulk volumes.
Do not use compressed air for filling, discharging or handling.
Cleaning, inspection and maintenance of the internal structure of storage tanks must be done only by properly equipped and qualified personnel as defined by national, local or company regulations.
Do not pressurize, cut, weld, braze, solder, drill, or grind on containers.

Hygiene Measures:

Smoking, eating and drinking should be prohibited.
Dispose of rinse water in accordance with local and national regulations.

7.2 Conditions for safe storage, including any incompatibilities

Technical measures:

Vapour space above stored liquid may be flammable/explosive unless blanketed with inert gas.
Storage installations should be designed with adequate bunds so as to prevent ground and water pollution in case of leaks or spills.
Fixed storage containers, transfer containers and associated equipment should be earthed and bonded to prevent accumulation of static charge.

Storage precautions:

No smoking.
Store in a designated cool and well-ventilated place.
Containers which are opened must be carefully resealed and kept upright to prevent leakage.
Keep container tightly closed and properly labeled.
Breakable containers may not exceed 5 liters. Maximum fill: 95%
Do not use air pressure to deliver. Provide solvent resistant flooring.

Incompatible products:

Avoid contact with strong oxidizing agents.

Packaging materials:

Store in either mild steel or stainless steel containers or vessels.
Store in the original, tightly closed, container.

7.3 Specific end use(s):

Section 8: EXPOSURE CONTROL / PERSONAL PROTECTION

Use process enclosures, local exhaust ventilation, or others engineering controls to keep airborne levels below recommend exposure limits. If user operations generate dust, fume or mist, use ventilation to keep exposure to airborne contaminants below the exposure limit.

Occupational Exposure Limits:

Ingredient name	Occupational exposure limits
Xylene	TLV-ACGIH 100 ppm (TWA), 150 ppm (STEL) OSHA-PEL 100 ppm (TWA) REL-NIOSH 100 ppm (TWA), 150 ppm (STEL)
Ethylbenzene	TLV-ACGIH 100 ppm (TWA), 125 ppm (STEL) OSHA-PEL 100 ppm (TWA) REL-NIOSH 100 ppm (TWA), 125 ppm (STEL)

Deraived effects levels:

Recommended occupational and consumer exposure limit values (following from the performed CSA):

Derived No Effect Level (DNEL)

Exposure pattern	Route	Workers	General population
Long-term – systemic effects	Oral	N/A	1.6 mg/kg bw/day
Long-term – systemic effects	Dermal	180 mg/kg bw/day	108 mg/kg bw/day
Long-term – systemic effects	Inhalation	77 mg/m³	14.8 mg/m³

8.2 Exposure controls

Engineering Controls

The level of protection and types of controls necessary will vary depending upon potential exposure conditions. Control measures to consider:
Adequate ventilation should be provided so that exposure limits are not exceeded. Use explosion-proof ventilation equipment.

Person Protective measures

Respiratory protection: In case of risk of exposure exceeding the mean exposure value, an appropriate breathing apparatus must be worn by each individual.

When using a mask or half-mask: Check with respiratory protective equipment suppliers to select an appropriate combination of mask and filter. Select a filter suitable for organic gases and vapours (boiling point above 65 ^{0}C).

Be aware that filter protection time is limited.

Respiratory hazard monitoring method: Monitoring of the concentration of substances in the breathing zone of workers or in the general workplace may be required periodically to confirm the compliance with state and local legislation.

Eye protection: Wear protective safety goggles.

Skin protection

Hand protection: Use appropriate chemically compatible gloves.

Generally suitability and durability of gloves are dependent on duration of contact, chemical resistance of the glove material, glove thickness. For more precise details about the choice of appropriate protective gloves, please contact the manufacturer. Contaminated gloves should be replaced.

The following materials have been recommended for use against permeation by xylene and may provide protection for periods greater than 8 hours: polyvinyl alcohol and Viton. Materials that may withstand permeation for more than 4 but fewer than 8 hours are Teflon and polyethylene/ethylene vinyl alcohol. Natural rubber, butyl rubber, neoprene, a nitrile rubber and polyvinyl chloride mixture, nitrile rubber, polyethylene, polyvinyl chloride, and a neoprene and natural rubber mixture have demonstrated poor resistance to permeation by xylene.

If xylene is dissolved in an organic solvent, the permeation properties of both the solvent and the mixture must be considered when selecting personal protective equipment and clothing .

Skin and body (other than the hands): Wear appropriate protective clothing. Wear boots. Wear face protection.

Hygienic work practices: Do not eat, drink or smoke whilst handling the product. Handle in accordance with good industrial hygiene and safety practice.

Environmental exposure controls:

Do not allow material to contaminate ground water system.

Emissions from ventilation or work process equipment should be checked to ensure they comply with the requirements of environmental protection legislation. In some cases, fume scrubbers, filters or engineering modifications to the process equipment may be necessary to reduce emissions to acceptable levels.

Section 9: PHYSICAL AND CHEMICAL PROPERTIES

9.1 Information on basic physical and chemical properties

Molecular weight (average):	106.165
Appearance:	Liquid, colourless
Odour:	Aromatic hydrocarbon
Odour threshold:	1 ppm (air)
pH:	Not available
Melting point/Freezing point:	-47.8°C to +13.2 °C
Boiling range (ASTM D 850):	136-145 °C.
Flash point (Closed Cup):	27-32 °C
Evaporation rate:	0.6 (butyl acetate = 1)
Flammability (solid, gas):	1.0-7.0 % v/v
Vapor pressure:	0.8-1.2 kPa at 20°C

Vapor density (air=1):	3.7
Auto-ignition temperature:	minimum 464 °C
Decomposition temperature:	Not available
Oxidizing properties:	Not applicable
Explosive hazard:	Not applicable
Water Solubility:	146 – 171 mg/l at 25°C
Partition coefficient Octanol/Water:	3.12 to 3.2
Density:	0.865 – 0.875 g/cm^3.
Viscosity:	0.58 to 0.76 mPa s at 25°C
Surface tension:	28 to 29.8 mN/m at 25°C

Section 10: STABILITY AND REACTIVITY

10.1 Stability

The product is stable at normal storage, handling and use temperatures.

10.2 Conditions to avoid

Heat, sparks, ignition points, flames, static electricity.

10.3 Materials to avoid

Keep away from strong oxidizing agents.

10.4 Hazardous Decomposition products

Incomplete combustion and thermolysis produce potentially toxic gases such as: carbon monoxide, carbon dioxide, hydrocarbons, aldehyde and soot.

10.5 Hazard polymerization:

Will not happen.

Section 11: TOXICOLOGICAL INFORMATION

Acute toxicity

Product / ingredient name	Test	Dose
Xylenes	LD50, Oral LC50, Inhalation LD50, Dermal	3,523 mg/kg bw (rat) 27,124 mg/m^3 (rat vapors, 4h) 12,126 mg/kg (rabbit)

Skin irritation or corrosion: Causes skin irritation

Eye irritation: Causes serious eye irritation

Skin sensitization: Not classified as a sensitizer

CMR Effects:

Mutagenicity: Genetic toxicity: negative

Carcinogenicity:

No classification of mixed xylenes streams for carcinogenicity is warranted under DPD or GHS/CLP

Reproductive toxicity: Mixed xylenes, xylene isomers and ethylbenzene do not warrant classification for reproductive or developmental toxicity according to DPD or CLP.

Inhalation - Repeated dose toxicity:

Harmful: danger of serious damage to health by prolonged exposure through inhalation

Chronic/Other Effects:

There are no specific data on neurotoxicity in humans by monoexposure to ethylbenzene or xylenes, but for aromatic solvents such as these there is evidence for such effects in humans and animals.

Section 12: ECOLOGICAL INFORMATION

12.1 Toxicity

Incomplete ecotoxicological data are available for this product.

The information given below is based partly on a knowledge of the components and the ecotoxicology of similar products.

Acute Toxicity

Fish: LC50 2.6 - 11.23 mg/l
Aquatic invertebrates: EC50 is >3.4 mg/l
Algae/aquatic plants: 72 hour EC50 of 2.2mg/l (p-xylene)

Chronic Toxicity

Fish: NOEC (56 d): > 1.3 mg/L (based on test data)
Aquatic invertebrates: 7 day NOEC of 0.96 mg/l (ethylbenzene)
Algae/aquatic plants: 72 hour NOEC of 0.44mg/l (p-xylene)

12.2 Persistence and Degradability

Abiotic - Expected to be degradable by indirect photolysis in air
Biodegradation in water - Readily biodegradable.
Degradation products: Identification of degradation products – Not available.

12.3 Bioaccumulative potential

The substance is considered as a not bioaccumulative or persistent.

12.4 Mobility in soil

No information available

12.5 Results of PBT and vPvB assessment

This substance is considered not to be PBT and vPvB.

12.6 Other adverse effects

No information available

Section 13: DISPOSAL CONSIDERATIONS

13.1 Waste disposal

Prevent from entering sewers or the immediate environment.

Waste must be disposed in compliance with the prevailing regulations.

Relevant disposal method: The only method authorized is collection by an authorized waste contractor and regeneration or incineration in an approved installation.

13.2 Disposal of contaminated packaging

Relevant disposal method: Empty packaging may contain flammable or explosive vapours. Hand over to an authorized contractor. Proceed in compliance with the prevailing regulations.

Section 14: TRANSPORT INFORMATION

14.1 Land Transportation (ADR/RID)

UN number: 1307
Proper shipping name: XYLENES
Hazard class: 3
Packing group: III
ADR/RID-Labels: 3
Hazchem code: 3Y
Hazard identification number: 30
Classification code: F1

14.2 Inland Waterway Transport (ADN(R))

UN number: 1307
Proper shipping name: XYLENES
Hazard class: 3
Packing group: III
Hazard labels: 3 (N2)

14.3 Marine Transport (IMDG)

UN number: 1307
Proper shipping name: XYLENES
Chemical name: XYLENE
Hazard class: 3
Packing group: III
EmS number: F-E, S-D
Labels: 3
Environmental Hazard: No

14.4 Air Transport (ICAO/IATA)

UN number: 1307
Proper shipping name: XYLENES
Chemical name: XYLENE
Hazard class: 3
Packing group: III
Labels: 3

14.5 Transport in bulk according to MARPOL 73/78 and the IBC Code

UN: 1307
Pollution category: Y
Ship Type: 2
Proper shipping name: **Xylenes/ethylbenzene (10% or more) mixture**

Section 15: REGULATORY INFORMATION

15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture

EU Directives 67/548/EEC and 1999/45/EC (including amendments) and take into account the intended product use.
EU Regulation (EC) No.1907/2006 (REACH)
EU Regulation (EC) No 1272/2008 (CLP)
COMMISSION REGULATION (EU) No 453/2010

15.2 Chemical safety assessment

In accordance with REACH article 14, a Chemical Safety Assessment has been carried out for this substance.

Section 16: OTHER INFORMATION

Full text of R-phrases referred to in sections 2 and 3:

R10 - Flammable
R11 - Highly flammable
R20 - Harmful by inhalation
R20/21 - Harmful by inhalation and in contact with skin.
R36/37/38 - Irritant; Irritating to eyes, respiratory system and skin
R38 - Irritating to skin
R65 – Harmful: may cause lung damage if swallowed

Safety phrases:

S02 - Keep out of the reach of children.
S24/25 - Avoid contact with skin and eyes.

Full text of Hazards Statements referred to in sections 2 and 3:

H225 – Highly flammable liquid and vapour.
H226 - Flammable liquid and vapour.
H312 - Harmful in contact with skin.
H315 - Causes skin irritation.
H332 - Harmful if inhaled.
H319 - Causes serious eye irritation.
H320 – Causes eye irritation
H304 - May be fatal if swallowed and enters airways.
H335 - May cause respiratory irritation.
H373 - May cause damage to organs through prolonged or repeated exposure.

Precautionary Statements:

P210 - Keep away from heat/sparks/open flames/hot surfaces. No smoking.
P243 - Take precautionary measures against static discharge.
P280 - Wear protective gloves/protective clothing/eye protection/face protection.
P260 - Do not breathe fume/gas/mist/vapours/spray.
P303+P361+P353 - IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower.

P332+P313 - IF skin irritation occurs: Get medical advice/attention.
P301+P310 - IF SWALLOWED: Immediately call a POISON CENTER or doctor / physician.
P331 - Do NOT induce vomiting.
Training advice: Before using/handling the product one must read carefully present MSDS.

Recommended restriction: N/A

Key Legend Information:

ACGIH- American Conference of Governmental Industrial Hygienists
OSHA- Occupational Safety and Health Administration
NTP- National Toxicology program
IARC- International Agency for Research on Cancer
ND- Not Determined
N/A- Not available
R-phrases- Risk phrases
S-phrases- Safety phrases
H-statements – Hazard statements
P-statements – Precautionary statements
UVCB - Substances of Unknown or Variable composition, Complex reaction products or Biological materials

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