

SAFETY DATA SHEET

According to Regulation (EU) No 2015/830

TVS-070

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

1.1 Product identifier

Product name: TVS-070
Product identifier: Crosslinker (Hardener) for solvent based polyurethane adhesive

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

Identified uses: Auxiliary material for textile and leather printing

1.3 Details of the supplier of the safety data sheet

Supplier: UES Kimya Sanayi Anonim Şirketi
Address: Fatih Mah. 105. Cad. D Blok No: 6C
Kapaklı/TEKİRDAĞ – TÜRKİYE
Phone: +90 546 524 09 33
E-mail: info@ueskimya.com

1.4 Emergency telephone number

UES Foils: +90 546 524 09 77
Emergency First Aid Center: 112
National Poison Counseling Center: 114
Fire Department: 110

2. Hazards identification

2.1 Classification of the substance or mixture

Classification (EC 1272/2008)

Physical and Chemical Hazards	Flam. Liq. 2-H225
Human health	Skin Sens. 1-H317
	Eye Irrit. 1-H319
	Resp. Sens. 1A-H334
	STOT SE 3-H336
Environment	Carc. 2-H351
	Not classified.

The Full Text for all Hazard Statements are Displayed in Section 16.

2.2 Label elements

Label In Accordance With (EC) No. 1272/2008



Signal word Danger

Hazard statements

H225	Highly flammable liquid and vapour
H317	May cause an allergic skin reaction
H319	Causes serious eye irritation
H334	May cause allergy or asthma symptoms or breathing difficulties if inhaled
H336	May cause drowsiness or dizziness
H351	Suspected of causing cancer
EUH066	Repeated exposure may cause skin dryness or cracking
EUH204	Contains isocyanates. May produce an allergic reaction.

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Precautionary statements

P210	Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.
P233	Keep container tightly closed.
P242	Use only non-sparking tools.
P243	Take precautionary measures to prevent static discharges.
P261	Avoid breathing dust/fume/gas/mist/vapours/spray.
P264	Wash skin thoroughly after handling.
P280	Wear protective gloves/protective clothing/eye protection/face protection.
P302+P352	IF ON SKIN: Wash with soap and water.
P303+P361+P353	IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water [or shower].
P305+P351+P338	IF IN EYES: Rinse continuously with water for several minutes. Remove contact lenses if present and easy to do. Continue rinsing.
P308+P313	IF exposed or concerned: Get medical advice/attention.
P333+P313	If skin irritation or a rash occurs: Get medical advice/attention.
P337+P313	If eye irritation persists: Get medical advice/attention.
P363	Wash contaminated clothing before reuse.
P370+P378	In case of fire: Use alcohol resistant foam or normal protein foam to extinguish.
P403+P235	Store in a well ventilated place. Keep cool.
P405	Store in a closed container.
P501	Dispose of contents/container in accordance with national regulations.

2.3 Other hazards

This product does not contain any PBT or vPvB substances.

3. Composition/information on ingredients

3.2 Mixtures

Name	CAS No.	EC No.	Ratio (%)	Classification (T.C. 28848)
Urethane polymer	53317-61-6	500-120-8	60-80	Skin Sens. 1-H317 Eye Irrit. 2-H319
Ethyl acetate	141-78-6	205-500-4	20-40	Flam. Liq. 2-H225 Eye Irrit. 2-H319 STOT SE 3-H336 EUH066
m-tolylidene diisocyanate (mixture of isomers)	26471-62-5	247-722-4	<0,5	Acute. Tox. 2-H330 Skin Irrit. 2-H315 Skin Sens. 1-H317 Resp. Sens. 1-H334 STOT SE 3-H335 Carc. 2-H351 Aquatic Chronic 3-H412

4. First aid measures

4.1 Description of first aid measures

General notes

Symptoms may appear after some time has passed since exposure. Consult a doctor with this Safety Data Sheet in case of exposure to the product.

Inhalation

Remove victim to fresh air and keep at rest in a position comfortable for breathing.

If not breathing, give artificial respiration.

Get medical advice / attention if you feel unwell.

In the event of cardiac arrest (no response and no normal breathing), immediately perform chest compressions and

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ventilation. Use an Automated External Defibrillator (AED) if possible. Protection of vital functions (respiration and circulation) takes priority over all other measures.

Ingestion

In case of ingestion, get immediate medical advice/attention.

If vomiting occurs, lean patient forward or place on left side (head-down position, if possible) to maintain open airway and prevent aspiration.

Send the victim to the hospital with this safety data sheet (SDS).

Contact the National Poisons Information Center (UZEM) for advice.

Skin contact

Remove / Take off all contaminated clothing immediately.

Rinse the affected skin areas under running water for at least 10-20 minutes.

Get immediate medical advice / attention, if skin irritation or rash occurs.

Eye contact

Whilst protecting yourself, relocate the casualty away from the source of danger.

Remove contact lenses, if present and easy to do. Continue rinsing.

Rinse with clean water for at least 15 minutes and then seek medical attention.

When rinsing, open your eyelids with fingers to insure saturation of water.

4.2 Most important symptoms and effects, both acute and delayed

Acute and delayed effects are noted in sections 2 and 11.

4.3 Indication of any immediate medical attention and special treatment needed

No data available.

5. Firefighting measures

5.1 Extinguishing media

Dry extinguishing powder, carbon dioxide, sand, water spray (not splash).

Fight large fire with alcohol resistant foam or water spray.

5.2 Special hazards arising from the substance or mixture

Combustion products: carbon monoxide (CO), carbon dioxide (CO₂), hydrogen cyanide (HCN), isocyanates, nitrogen dioxides. Vapors are heavier than air and may spread along floors.

Flammable.

Risk of ignition.

Forms explosive mixtures with air at ambient temperatures.

Pay attention to flashback.

When heated, containers may explode. Thermal decomposition can generate irritating gases and vapors. Keep product and empty container away from heat and sources of ignition.

5.3 Advice for firefighters

Depending on the size of the fire, it may be necessary to use full protective clothing and individual breathing equipment.

Minimum emergency facilities and equipment should be available (fire blankets, portable first aid kit, etc.)

5.4 Other informations

In case of accidents and other emergencies, act in accordance with the Internal Emergency Plan and SDS. Eliminate any source of sparks. In the event of fire, cool containers and tanks that are likely to ignite, explode or scorch due to high temperature. Do not allow the products used in fire extinguishing to be poured into the aqueous environment.

6. Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures

Shut off all sources of ignition. The use of personal protective equipment is mandatory in case of contact with the spilled product (See section 8). Evacuate the area and keep unprotected persons away. Avoid breathing smoke and gas.

6.2 Environmental precautions

Avoid releasing to the environment. Keep away from drainage, surface and ground water.

6.3 Methods and material for containment and cleaning up

Collect into open container by absorbing with cloths, rags, sand or etc. and then rinse with plenty of water.

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Contain the flow path with blankets or sand bags and collect into an appropriate container for large spills.
Prevent the inflow into drains, sewer, basement, or enclosed areas.
Wear appropriate protective equipment throughout the process.

6.4 Reference to other sections

See section 13 for waste disposal.

7. Handling and storage

7.1 Precautions for safe handling

Work under hood. Keep away from open flames, hot surfaces and source of ignition.
Take precautionary measures against static discharges. Use only non-sparking tools..
To avoid ignition of vapors by static electricity discharge, all metal parts of the equipment must be grounded
Seal container after use.
Wash hands thoroughly and rinse mouth after handling.
Do not eat, drink or smoke when using this product.
Do not carry contaminated gloves and protective equipment into rest / break areas.
Wear proper protective equipment to avoid inhalation and contact with eyes and skin.

7.2 Conditions for safe storage, including any incompatibilities

Keep container tightly closed.
Keep cool and well-ventilated place.
Store in a dark light-safe area.
Store away from foods and materials that are not suitable for storage together.
Make sure containers are not damaged and check regularly for leaks.

7.3 Specific end use(s)

Except for the aforementioned instructions, no recommendations regarding the use of this product are required to be followed.

8. Exposure controls/personal protection

8.1 Control parameters

Component	European Union
Ethyl acetate	TWA: 200 ppm TWA: 734 mg/m ³ STEL: 400 ppm STEL: 1468 mg/m ³
m-tolylidene diisocyanate (mixture of isomers)	TWA: 0.04 mg/m ³ TWA: 0.005 ppm STEL: 0.15 mg/m ³ STEL: 0.02 ppm

Derived No Effect Level (DNEL)

Component	Possible Health Effect	Value
Ethyl acetate	Acute-systemic effects (Inhalation)	1468 mg/m ³ (Employee)
	Acute-local effects (Inhalation)	1468 mg/m ³ (Employee)
	Long term-systemic effects (Inhalation)	734 mg/m ³ (Employee)
	Long term-local effects (Inhalation)	734 mg/m ³ (Employee)

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Ethyl acetate	Long term-systemic effect (Skin contact)	63 mg/m ³ (Employee)
	Acute-systemic effects (Inhalation)	734 mg/m ³ (Consumer)
	Acute-local effects (Inhalation)	734 mg/m ³ (Consumer)
	Long term-systemic effects (Inhalation)	367 mg/m ³ (Consumer)
	Long term-local effects (Inhalation)	367 mg/m ³ (Consumer)
	Long term-systemic effects (Skin contact)	37 mg/m ³ (Consumer)
	Long term-systemic effects (Ingestion)	4.5 mg/m ³ (Consumer)

Predicted No Effect Concentration (PNEC)

Component	Compartment	Value
Ethyl acetate	Fresh water	PNEC= 0.26 mg/L
	Sea water	PNEC= 0.026 mg/L
	Fresh water sediment	PNEC= 1.25 mg/kg
	Sea sediment	PNEC= 0.125 mg/kg
	Soil	PNEC= 0.24 mg/kg

8.2 Exposure controls Protective equipment



Eye/face protection

Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166(EU).

Body Protection

Wearing flame retardant protective clothes (long sleeve uniform) that organic solvent or the chemical do not infiltrate easily is preferred.

Respiratory equipment

Wearing an organic vapor gas mask is preferred. Recommended Filter type: Filter A (according to DIN 3181). Maintenance, cleaning and testing of respiratory protective devices must be carried out in accordance with the manufacturer's instructions. These measures need to be appropriately documented. When vapors/aerosols are generated, it is recommended to refer to DIN EN 143, DIN 14387 regarding filtered respiratory protection and other additional standards for the respiratory protection system used. It is recommended to consult other additional standards regarding the respiratory protection system used.

Environmental Exposure Controls

pay attention not to mix it with sewage.

Risk of explosion.

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9. Physical and chemical properties

9.1 Information on basic physical and chemical properties

Appearance	Liquid
Colour	Colourless or slightly yellow
Odour	Characteristic
Solubility	No data available.
First boiling point	>77 °C
Vapor pressure	22.80 kPa
Melting point	No data available.
Density	1.15-1.20 g/ml
Dynamic viscosity	No data available.
Kinematic viscosity	No data available.
Concentration	60-80%
pH	No data available.
Vapor density	No data available.
Partition Coefficient (N-Octanol/Water)	No data available.
Decomposition temperature	No data available.
Flammability	Highly flammable
Flash point	5 °C (closed cup)
Explosion limits	No data available.
Autoignition temperature	No data available.

9.2 Other information

No data available.

10. Stability and reactivity

10.1 Reactivity

Vapors may form explosive mixture with air.

10.2 Chemical stability

Stable under normal temperature conditions and recommended use. Stable under prescribed storage conditions.

10.3 Possibility of hazardous reactions

Risk of exothermic reaction with fluorine, chlorosulfonic acid, strong oxidizing agents, fuming sulfuric acid.
Risk of explosion with lithium aluminum hydride (LiAlH₄), alkali metals, hydrides and alkaline earth metals.
It may react violently with strong acids and bases.

10.4 Conditions to avoid

Sunlight, heat, open flame, high temperature, sparks, static electricity, other sources of ignition.

10.5 Incompatible materials

No data available.

10.6 Hazardous decomposition products

Combustion products: carbon monoxide (CO), carbon dioxide (CO₂), hydrogen cyanide (HCN), isocyanates, nitrogen oxides (NO_x),

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11. Toxicological information

11.1 Information on toxicological effects

Acute toxicity

Component	LD50 Oral (Rat)	LD50 Dermal (Rabbit)	LC50 Inhalation (Rat)
Ethyl acetate	5.620 mg/kg	20.000 mg/kg	-
m-tolylidene diisocyanate (mixture of isomers)	>5.110 mg/kg	>9400 mg/kg	0.11 mg/l (4 h)

Skin corrosion/irritation

Skin Sens. 1-H337

Serious eye damage/eye irritation

Eye Irrit. 2-H319

Respiratory or skin sensitization

Resp. Sens. 1-H334

Germ cell mutagenicity

No data available.

Carcinogenicity

Carc. 2-H351

Reproductive toxicity

No data available.

Specific target organ toxicity - single exposure

STOT SE 3-H336

Specific target organ toxicity - repeated exposure

No data available.

Aspiration hazard

No data available.

11.2 Additional information

No data available.

12. Ecological information

12.1 Toxicity

Component	LC50 (96 h)	EC10 (16 h)	NOEC (48 h)	NOEC (21 min.)
Ethyl acetate	230 mg/l (Pimephales promelas)	2900 mg/l (Desmodesmus subspicatus)	mg/kg (Daphnia magna)	2.4 mg/l (Daphnia magna)

Component	LC50 (96 h)	EC50 (48 h)	ErC50 (96 h)	EC50 (3 h)	NOEC (21 min.)
m-tolylidene diisocyanate (mixture of isomers)	133 mg/l (Oncorhynchus mykiss)	12.5 mg/l (Daphnia magna)	3230 mg/l (Skeletonea costatum)	100 mg/l (Activated sludge)	2 mg/l (Daphnia magna)

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12.2 Persistence and degradability

Component	Biodegradability	Result
Ethyl acetate	%69 (20 days)	Readily degradable
m-tolylidene diisocyanate (mixture of isomers)	%0 (28 days)	Readily degradable

12.3 Bioaccumulative potential

Component	Species	Exposure Time	Temperature	Concentration	BCF
Ethyl acetate	Leuciscus idus melanotus	3 days	22.5 °C	-	30
m-tolylidene diisocyanate (mixture of isomers)	Cyprinus carpio	60 days	24.8 °C	1.8 mg/l	130

Component	Partition coefficient n-octanol/water	Result
Ethyl acetate	Log Pow: 0.73	Bioaccumulation is not expected.
m-tolylidene diisocyanate (mixture of isomers)	Log Pow: 3.43	Bioaccumulation is not expected.

12.4 Mobility in soil

No data available.

12.5 Results of PBT and vPvB assessment

The product does not meet the PBT and vPvB criteria.

12.6 Other adverse effects

No data available.

13. Disposal considerations

13.1 Waste treatment methods

The product must be disposed of in accordance with official regulations. Do not allow the product to mix into sewers, groundwater, drinking water sources, standing and flowing water. Leave the product in its original container. Do not mix with other waste. Treat contaminated containers as the product itself.

14. Transport information

14.1 UN Number

ADR/RID: 1866

IMDG: 1866

IATA: 1866

14.2 UN proper shipping name

ADR/RID: RESIN SOLUTION, flammable

IMDG: RESIN SOLUTION, flammable

IATA: RESIN SOLUTION, flammable

14.3 Transport hazard class(es)

ADR/RID: 3

IMDG: 3

IATA: 3



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14.4 Packing group

ADR/RID: II

IMDG: II

IATA: II

14.5 Environmental hazards

Environmentally Hazardous Substance/Marine Pollutant

No.

14.6 Special precautions for user

No special precautions required.

14.7 Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code

Not applicable.

15. Regulatory information

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

Regulation (EC) No 1272/2008 of the European Parliament and of the Council of 16 December 2008 on classification, labelling and packaging of substances and mixtures.

15.2 Chemical Safety Assessment

No chemical safety assessment has been carried out.

16. Other information

Abbreviations

CAS:	Chemical Abstracts Service.
EC:	European Inventory of Existing Commercial Chemical Substances (EINECS).
TWA:	Time Weighted Average.
STEL:	Short Term Exposure Limit.
DNEL:	Derived No Effect Level.
PNEC:	Predicted No Effect Concentration.
LD50:	Lethal Dose, 50%
LC50:	Lethal Concentration, 50%
EC50:	Effective Concentration, 50% (for crustacea)
ErC50:	50% Effective Concentration (for algae and other aquatic plants)
NOEC:	No Observed Effect Concentration
ADR:	European Agreement concerning the International Carriage of Dangerous Goods by Road.
RID:	European Agreement concerning the International Carriage of Dangerous Goods by Rail.
IMDG:	International Maritime Dangerous Goods.
IATA:	International Air Transport Association.
MARPOL:	International Convention for the Prevention of Pollution From Ships.
IBC:	Intermediate Bulk Container- International Code for the Construction and Equipment
PBT:	Persistent, Bioaccumulative and Toxic
vPvB:	Very Persistent and Very Bioaccumulative

Classification procedures

H225	Highly flammable liquid and vapour
H317	May cause an allergic skin reaction
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H334	May cause allergy or asthma symptoms or breathing difficulties if inhaled
H336	May cause drowsiness or dizziness
H351	Suspected of causing cancer
EUH066	Repeated exposure may cause skin dryness or cracking
EUH204	Contains isocyanates. May produce an allergic reaction.
P210	Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.
P233	Keep container tightly closed.
P242	Use only non-sparking tools.
P243	Take precautionary measures to prevent static discharges.
P261	Avoid breathing dust/fume/gas/mist/vapours/spray.

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P264	Wash skin thoroughly after handling.
P280	Wear protective gloves/protective clothing/eye protection/face protection.
P302+P352	IF ON SKIN: Wash with soap and water.
P303-P361+P353	IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water [or shower].
P305 + P351 + P338	IF IN EYES: Rinse continuously with water for several minutes. Remove contact lenses if present and easy to do. Continue rinsing.
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P363	Wash contaminated clothing before reuse.
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P405	Store in a closed container.
P501	Dispose of contents/container in accordance with national regulations.

Issued By:	Serhat Gündüz
Certificate No:	KDU01.24.06
Certificate Validity Date:	27.08.2027
Issue Date:	27.06.2025
Revision:	-
Revision Date:	-

Disclaimer

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