1. Identification of the Substance/Mixture and of the Company/Undertaking

1. 1. Product Identifier

Product Name:	*Toluene*
Article No.:	*70500*

1. 2. Relevant identified Uses of the Substance or Mixture and Uses advised against

Identified uses:
Industrial application

Uses advised against:
We have no information on any restrictions for this product.

1. 3. Details of the Supplier of the Safety Data Sheet (Producer/Importer)

Company:	*Kremer Pigmente GmbH & Co. KG*
Address:	*Hauptstr. 41-47, 88317 Aichstetten, Germany*
Tel./Fax.:	*Tel +49 7565 914480, Fax +49 7565 1606*
Internet:	*www.kremer-pigmente.com*
EMail:	*info@kremer-pigmente.com*
Importer:	--

1. 4. Emergency No.

Emergency No.:	*+49 7565 914480 (Mon-Fri 8:00 - 17:00)*

1. 4. 2 Poison Center:

2. Hazards Identification

2. 1. Classification of the Substance or Mixture

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

Flammable liquids, hazard category 2
Reproductive toxicity, hazard category 2
Specific target organ toxicity (repeated exposure), hazard category 2
Aspiration hazard, hazard category 1
Skin corrosion, hazard category 2
Specific Target Organ Toxicity (single exposure), hazard category 3
Chronic aquatic toxicity, hazard category 3

H225	Highly flammable liquid and vapour.
Cat.: 2	
H304	May be fatal if swallowed and enters airways.
Cat.: 1	
H315	Causes skin irritation.
Cat.: 2	
H336	May cause drowsiness or dizziness.
Cat.: 3	
H361d	Suspected of damaging the unborn child.
Cat.: 2	
H373	May cause damage to organs through prolonged or repeated exposure.

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Cat.: 2	
H412	Harmful to aquatic life with long lasting effects.
Cat.: 3	

Possible Environmental Effects:

See Section 12.

2. 2. Label Elements

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

Hazard designation:

GHS02

GHS07

GHS08-2

Signal word:

Danger

Hazard designation:

H225	Highly flammable liquid and vapour.
H304	May be fatal if swallowed and enters airways.
H315	Causes skin irritation.
H336	May cause drowsiness or dizziness.
H361d	Suspected of damaging the unborn child.
H373	May cause damage to organs through prolonged or repeated exposure.
H412	Harmful to aquatic life with long lasting effects.

Safety designation:

P210	Keep away from heat/ sparks/ open flames/ hot surfaces. No smoking.
P260	Do not breathe dust/fume/gas/mist/vapours/spray.
P301+P310	If swallowed: Immediately call a poison center or physician.
P331	Do not induce vomiting.
P370+P378	In case of fire: use water spray, foam, carbon dioxide or dry extinguishing powder for extinction.
P403+P233	Store in a well ventilated place. Keep container tightly closed.
P403+P235	Store in a well ventilated place. Keep cool.

Hazardous components for labelling:

Toluene

2. 3. Other Hazards

3. Composition/Information on Ingredients

Substance

3. 1.

This product is a substance: see details under 3.2.

3. 2. Mixture

Chemical Characterization:

Information on Components / Hazardous Ingredients:

Toluene (H225-304-315-336-361d-373-412); REACH Reg.-No. 01-2119471310-51-xxxx	100 %	CAS-Nr: 108-88-3 EINECS-Nr: 203-625-9 EC-Nr: 601-021-00-3

Additional information:

4. First Aid Measures

4. 1. Description of the First Aid Measures

General information:

Take person away from hazardous area.
Give artificial respiration in case breathing is not regular or if it has stopped.
Remove contaminated clothes immediately.
Intoxication symptoms may occur after several hours, therefore a 48 hour medical observation is necessary.

After inhalation:

Supply fresh air. Consult physician if symptoms persist.
In case of unconsciousness place patient stable in side position for transportation.

After skin contact:

Remove contaminated clothing immediately. Wash off immediately with plenty of water and soap.
If symptoms persist, consult a physician.

After eye contact:

Rinse open eyes with plenty of water for at least 15 minutes. Consult physician.

After ingestion:

Rinse mouth with water and give plenty of water to drink. Consult a physician.
Do not induce vomiting.

4. 2. Most important Symptoms and Effects, both Acute and Delayed

Symptoms:

Inhalation: may cause depression of the central nervous system and narcosis.
Inhalation: can cause cardiac dysrhythmia.

Effects:

No further information available.

4. 3. Indication of any Immediate Medical Attention and special Treatment needed

Treatment:

Treat symptomatically.

Intoxication symptoms may occur after several hours, therefore a 48 hour medical observation is necessary.

5. Fire-Fighting Measures

5. 1. Extinguishing Media

Suitable extinguishing media:

Water mist, extinguishing powder, foam, carbon dioxide.

Unsuitable extinguishing media:

Never apply a strong water jet.

5. 2. Special Hazards arising from the Substance or Mixture

Special hazards:

Highly flammable.

Fumes can form an explosive mixture with air.

In case of fire: formation of carbon monoxide, carbon dioxide, sulfur oxides, phosphorus oxides.

5. 3. Advice for Firefighters

Protective equipment:

Wear self-contained respiratory protective device and full protective gear.

Further information:

Cool closed containers exposed to fire with water mist.

Collect contaminated extinguishing water and debris separately; avoid contamination of sewage system.

6. Accidential Release Measures

6. 1. Personal Precautions, Protective Equipment and Emergency Procedures

Personal precautions:

Wear appropriate protective equipment. Keep spectators away.

Ensure adequate ventilation.

Avoid contact with skin and eyes. Do not ingest or inhale.

Keep away from sources of ignition. No smoking.

6. 2. Environmental Precautions

Environmental precautions:

Prevent contamination of soils, drains and surface water.

Contact local authorities if product pollutes soil or vegetation.

6. 3. Methods and Material for Containment and Cleaning Up

Methods and material:

Contain with non-flammable absorbent material (e.g. sand, diatomaceous earth, vermiculite) and dispose accordingly.

Ensure adequate ventilation.

This product and its container must be disposed as hazardous waste.

6. 4. Reference to other Sections

Protective clothing, see Section 8.

See Section 13 for information on disposal.

7. Handling and Storage

7. 1. Precautions for Safe Handling

Instructions on safe handling:

The usual precautionary measures are to be adhered to when handling chemicals.
Provide adequate ventilation.
Keep containers tightly closed.
Avoid contact with eyes and skin.
A nearby eyewash facility should be available for emergencies.

Hygienic measures:

Take off contaminated clothing immediately.
Do not inhale gas/fumes/vapours/aerosols.
Avoid contact with eyes and skin.
Keep away from foodstuffs and drinks. Do not eat, drink or smoke during work. Wash hands before breaks and at the end of work.

7. 2. Conditions for Safe Storage, including any Incompatibilities

Storage conditions:

Store in tightly sealed containers in a cool and well ventilated location.
Keep away from flammable materials.
Do not store together with strong acids and oxidants.
Protect product from direct sunlight.

Requirements for storage areas and containers:

Store in a room with a solvent-proof floor.
Suitable container material: stainless steel.

Information on fire and explosion protection:

Keep away from sources of ignition - do not smoke. Take measures to prevent electrostatic discharge.
Use only explosion protected devices.
Combustible liquid.
Vapors may form an explosive mixture with air. Vapor is heavier than air and spreads along the ground.

Storage class:

3; Flammable liquids (TRGS 510)

Further Information:

No information available.

7. 3. Specific End Use(s)

Further information:

No information available.

8. Exposure Controls/Personal Protection

8. 1. Parameters to be Controlled

Parameters to be controlled (DE):

Toluene (CAS 108-88-3); TWA (D): 190 mg/m3, 50 ppm (4)

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TRGS 900, Skin designation: can be absorbed by skin.
Y: No teratogenic risk when the exposure limit values (ELV) and biological limit values (BLV) are adhered to.

Parameters to be controlled:

Toluene
TWA (EU ELV): 192 mg/m3; 50 ppm
STEL (EU ELV): 384 mg/m3; 100 ppm

Derived No-Effect Level (DNEL):

Toluene (108-88-3):
192 mg/m3 (worker, inhalation, long-term exposure - systemic and local effects)
384 mg/m3 (worker, inhalation, short-term exposure - systemic and local effects)
384 mg/kg bw/d (worker, skin contact, long-term exposure - systemic effects)
56.5 mg/m3 (consumer, inhalation, long-term exposure - systemic and local effects)
226 mg/m3 (consumer, inhalation, short-term exposure - systemic and local effects)
226 mg/kg bw/d (consumer, skin contact, long-term exposure - systemic effects)
8.13 mg/kg bw/d (consumer, swallowing, long-term exposure - systemic effects)

Predicted No-Effect Concentration (PNEC):

Toluene (108-88-3):
Fresh water / Seawater: 0.68 mg/l
Fresh water sediment / Sea water sediment: 16.39 mg/kg dw
Sporadic release: 0.68 mg/l
Sewage treatment system (STP): 13.61 mg/l
Soil: 2.89 mg/kg dw

Additional Information:

Biological limit value (TRGS 903):
Toluene: 1.5 mg/l (O-Cresol (after hydrolysis), urine; end of shift)
Toluene: 600 µg/l (blood; end of exposure/shift)

8. 2. Exposure Controls

Technical protective measures:

Adequate ventilation to control airborne concentrations below the exposure limits.

Personal Protection

General protective measures:

Avoid contact with eyes and skin.
Remove contaminated clothing immediately.
Do not inhale gas/fumes/vapor/aerosol.
Keep away from foodstuffs and drinks. Do not eat, drink or smoke during work. Wash hands before breaks and at the end of work.

Respiratory protection:

Respiratory equipment required in case of insufficient ventilation, filter type A.

Hand protection:

Protective gloves (EN 374)

Each work area must have adequate protective gloves.

The manufacturer´s directions for use should be observed because of the great diversity of types.

Protective glove material:

Fluoro carbon rubber - FKM (480 min, 0.7 mm)

Suitability and durability of a glove is dependent on usage, e.g. frequency and duration of contact, chemical resistance of glove material and dexterity. Always seek advice from glove suppliers.

Eye protection:

Safety glasses with protective shields (EN 166).

Body protection:

Protective clothing.

Environmental precautions:

Prevent contamination of open water ways and sewage system. Avoid contamination of ground water.

Contact local authorities if large spillages cannot be contained.

9. Physical and Chemical Properties

9. 1. Information on Basic Physical and Chemical Properties

Form:	*liquid*
Color:	*colorless*
Odor:	*aromatic*
Odor threshold:	*0.6 mg/m3*
pH-Value:	*not applicable*
Melting temperature:	*-95°C*
Boiling temperature:	*110 - 111°C*
Flash point:	*4°C*
Evaporation rate:	*No information available.*
Flammability (solid, gas):	*not applicable*
Upper explosion limit:	*7.1 Vol.-%*
Lower explosion limit:	*1.1 Vol.-%*
Vapor pressure:	*0.448 PSI (70°F)*
Vapor density:	
Density:	*0.87 g/cm3 (20°C)*

	Solubility in water:	*573 mg/l (25°C)*
	Coefficient of variation (n-Octanol/Water):	*2.73 logKOW (20°C)*
	Auto-ignition temperature:	*480°C (1013 hPa)*
	Decomposition temperature:	*No data available.*
	Viscosity, dynamic:	*0.6 mPa.s (20°C)*
	Explosive properties:	*Product is not explosive; however, an explosive vapor/air mixture can be formed.*
	Oxidizing properties:	*no information available*
	Bulk density:	
9. 2.	**Further Information**	
	Solubility in solvents:	
	Viscosity, kinematic:	*0.7 mm2/s (20°C)*
	Burning class:	
	Solvent content:	
	Solid content:	
	Particle size:	
	Other information:	*Temperature class: T1 (maximum temperature: 450°C)* *Surface tension: 27.73 mN/m (25°C)*

10. Stability and Reactivity

10.1. Reactivity

No decomposition if used according to specifications.

10.2. Chemical Stability

Stable if used according to specifications.

10.3. Possibility of Hazardous Reactions

Reacts with strong acids and oxidizing agents.
Vapors in combination with air can form an explosive compound.

10.4. Conditions to Avoid

Conditions to avoid:

Avoid contact with heat, sparks and open fire.
Avoid direct sunlight.

Thermal decomposition:

No data available.

10.5. Imcompatible Materials

Oxidizing agents.

10.6. Hazardous Decomposition Products

Carbon oxides

10.7. Further Information

11. Toxicological Information

11. 1. Information on Toxicological Effects

Acute Toxicity

LD50, oral: *5580 mg/kg (rat, m; OECD 401)*

LD50, dermal: *> 5000 mg/kg (rabbit, m)*

LC50, inhalation: *28.1 mg/l (4h, rat)*

Primary effects

Irritant effect on skin:

Causes skin irritation (rabbit; OECD 404). Risk of skin resorption.

Irritant effect on eyes:

Non-irritating to eyes (rabbit; OECD 405)

Inhalation:

No information available.

Ingestion:

No information available

Sensitization:

No sensitizing effects known (guinea pig; OECD 406).

Mutagenicity:

In vitro genetic-toxicity: no mutagenic effects
In vivo genetic-toxicity: no mutagenic effects

Reproductive toxicity:

Animal studies showed no adverse effect on the fertility.

Carcinogenicity:

No cancerogenic effect (in animal studies).

Teratogenicity:

Animal studies showed teratogenic effects.
Suspected of damaging fertility.

Specific target organ toxicity (STOT):

Single exposure (inhalation): Target organs: central nervous system.
May cause drowsiness and dizziness.
Repeated exposure (inhalation): can damage the organs after repeated or prolonged exposure.

Additional toxicological information:

Aspiration hazard:
May be fatal if swallowed and enters airways.

12. Ecological Information

12. 1. Aquatic Toxicity

Fish toxicity:

LC50: 5.5 mg/l (96h, Oncorhynchus kisutch)
NOEC: 1.39 mg/l (40d, Oncorhynchus kisutch)

Daphnia toxicity:

EC50: 11.5 mg/l (48h, Ceriodaphnia dubia; US-EPA)
NOEC: 0.74 mg/l (7d, Ceriodaphnia dubia)

Bacteria toxicity:

EC50: 84 mg/l (24h, Nitrosomas sp)

Algae toxicity:

EC50: 134 mg/l (3h, Chlamydomonas angulosa)

12. 2. Persistency and Degradability

86 % (20d); readily biodegradable
Oxidizes rapidly by photo-chemical reactions in air.

12. 3. Bioaccumulation

log KOW: 2.73 (20°C; pH-Value 7)
Bioconcentration factor (BCF): 90; low bioaccumulation

12. 4. Mobility

Product floats on water.
Mobile in soil.

12. 5. Results of PBT- und vPvP Assessment

This product is neither a PBT or vPvB substance nor does it contain a PBT or vPvB substance.

12. 6. Other Adverse Effects

Water hazard class:

Do not let product contaminate ground water, waterways or sewage system.

Behaviour in sewage systems:

Further ecological effects:

AOX Value:

13. Disposal Considerations

13. 1. Waste Treatment Methods

Product:

In accordance with current regulations, product may be taken to an incineration plant.

European Waste Code (EWC):

The waste code is determined according to the kind of waste and industry stated in the European Waste Catalogue.

Uncleaned packaging:

Uncontaminated packaging may be recycled. Completely empty packaging can be disposed of with the regular waste.
Do not puncture, cut or weld uncleaned drums. Risk of explosion.
Contaminated packaging must be disposed like the substance.

Waste Code No.:

14. Transport Information

14. 1. UN Number

ADR, IMDG, IATA *1294*

14. 2. UN Proper Shipping Name

ADR/RID: *TOLUOL*

IMDG/IATA: *TOLUENE*

14. 3. Transport Hazard Classes

ADR Class: *3*

Hazard no.: *3*

Classification code: *F1*

Tunnel restriction code: *D/E*

IMDG Class (sea): *3*

Hazard no.: *3*

EmS No.: *F-E, S-D*

IATA Class: *3*

Hazard no.: *3*

14. 4. Packaging Group

ADR/RID: *II*

IMDG: *II*

IATA: *II*

14. 5. Environmental Hazards

Labelling according 5.2.1.8 ADR/RID: no
Labelling according 5.2.1.6.3 IMDG: no
Classification as environmentally hazardous according 2.9.3 IMDG: no
Labelled with "P" according 2.10 IMDG: no

14. 6. Special Precautions for User

not applicable

14. 7. Transportation in Bulk according to Annex II of MARPOL 73/78 and IBC-Code

IMDG: not applicable

14. 8. Further Information

15. Regulatory Information

15. 1. Safety, Health and Environmental Regulations/Legislation specific for the Substance or Mixture

Water hazard class:

2, hazardous for water (German Regulation)

Local regulations on chemical accidents:

Underlies the Accident Ordinance 7b.
Seveso-III Directive (2012/18/EU):
Quantity 1: 10 t; Quantity 2: 50 t

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Part 1: Hazard categories of hazardous substances; P5a: Flammable liquids, Category 1, parts of Category 2 or 3

Employment restrictions:

The employment restrictions for expectant and nursing mothers, and for young workers are to be observed.

Restriction and prohibition of application:

EC. REACH, Section XVII, Restrictions on the Manufacture, Placing on the Market and Use of Certain Dangerous Substances, Preparations and Articles, Registered no. 48

Technical instructions on air quality:

15. 2. Chemical Safety Assessment

A Chemical Safety Assessment has been carried out for this product.

15. 3. Further Information

Listed in the following inventories:

EINECS (203-625-9), TSCA, AICS (AUS), DSL, INV (CA), ENCS (JP)(3)-2, ISHL (JP)(3)-2, KECI (KR) KE-33936/97-1-298, PICCS (PH)

Regulation (EC) 649/2012 concerning the export and import of dangerous chemicals: Not applicable

Regulation (EC) 273/2004, On Drug Precursors, Category 3: CN Code 2902.30.00

Decopaint Directive (2004/42/EC):

VOC Content: 100 %

16. Other Information

This product should be stored, handled and used in accordance with good hygiene practices and in conformity with any legal regulations. This information contained herein is based on the present state of knowledge and is intended to describe our product from the point of view of safety requirements. It should be therefore not be construed as guaranteeing specific properties.