

### SECTION 1: Identification of the substance/mixture and of the company/undertaking

#### 1.1. Product identifier

Product form : Mixture  
Product name : Custom 8270 Cal Mix 2  
Product code : AL0-130326  
Product group : Trade product

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

##### 1.2.1. Relevant identified uses

Main use category : Laboratory Use  
Industrial/Professional use spec : Industrial  
For professional use only  
Use of the substance/mixture : Certified reference material for laboratory use only

##### 1.2.2. Uses advised against

No additional information available

#### 1.3. Details of the supplier of the safety data sheet

Phenova  
6390 Joyce Dr. Suite 100  
80403 Golden, CO - United States  
T 1-866-942-2978 - F 1-866-283-0269  
[info@phenova.com](mailto:info@phenova.com) - [www.phenova.com](http://www.phenova.com)

#### 1.4. Emergency telephone number

Emergency number : ChemTel Assistance (US/Canada) 1-800-255-3924  
ChemTel Assistance (International) +1 813-248-0585

### SECTION 2: Hazards identification

#### 2.1. Classification of the substance or mixture

##### Classification according to Regulation (EC) No. 1272/2008 [CLP]

Carc. 1A H350  
Aquatic Chronic 3 H412

##### Classification according to Directive 67/548/EEC [DSD] or 1999/45/EC [DPD]

Carc.Cat.1; R45  
N; R51/53  
R44  
Full text of R-phrases: see section 16

##### Adverse physicochemical, human health and environmental effects

No additional information available

#### 2.2. Label elements

##### Labeling according to Regulation (EC) No. 1272/2008 [CLP]

Hazard pictograms (CLP) :



GHS08

Signal word (CLP) : Danger  
Hazard statements (CLP) : H350 - May cause cancer  
H412 - Harmful to aquatic life with long lasting effects  
Precautionary statements (CLP) : P273 - Avoid release to the environment  
P280 - Wear protective gloves/protective clothing/eye protection/face protection  
P308+P313 - IF exposed or concerned: Get medical advice/attention

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P403+P233 - Store in a well-ventilated place. Keep container tightly closed  
P501 - Dispose of contents/container to hazardous or special waste collection point, in accordance with local, regional, national and/or international regulation

EUH phrases

: EUH208 - Contains atrazine(1912-24-9), molinate(2212-67-1), 3,3'-dichlorobenzidine(91-94-1). May produce an allergic reaction  
EUH044 - Risk of explosion if heated under confinement

No labeling applicable

### 2.3. Other hazards

No additional information available

## SECTION 3: Composition/Information on ingredients

### 3.1. Substances

Not applicable

### 3.2. Mixtures

Name	Product identifier	%	Classification according to Regulation (EC) No. 1272/2008 [CLP]
Methylene Chloride (Component)	(CAS No) 75-09-2 (EC-No.) 200-838-9 (EC index no) 602-004-00-3	99	Carc. 2, H351
o-toluidine (Component) substance listed as REACH Candidate	(CAS No) 95-53-4 (EC-No.) 202-429-0 (EC index no) 612-091-00-X	0.1	Acute Tox. 3 (Oral), H301 Acute Tox. 3 (Inhalation), H312 Eye Irrit. 2, H319 Carc. 1B, H350 Aquatic Acute 1, H400
atrazine (Component)	(CAS No) 1912-24-9 (EC-No.) 217-617-8 (EC index no) 613-068-00-7	0.1	Acute Tox. 4 (Oral), H302 Skin Sens. 1, H317 STOT RE 2, H373 Aquatic Acute 1, H400 Aquatic Chronic 1, H410
2-naphthylamine (Component)	(CAS No) 91-59-8 (EC-No.) 202-080-4 (EC index no) 612-022-00-3	0.1	Acute Tox. 4 (Oral), H302 Carc. 1A, H350 Aquatic Chronic 2, H411
molinate (Component)	(CAS No) 2212-67-1 (EC-No.) 218-661-0 (EC index no) 613-051-00-4	0.1	Acute Tox. 4 (Oral), H302 Acute Tox. 4 (Dermal), H312 Acute Tox. 4 (Inhalation), H332 Skin Sens. 1, H317 Carc. 2, H351 Repr. 2, H361f STOT RE 2, H373 Aquatic Acute 1, H400 Aquatic Chronic 1, H410
caprolactam (Component) substance with a Community workplace exposure limit	(CAS No) 105-60-2 (EC-No.) 203-313-2 (EC index no) 613-069-00-2	0.1	Acute Tox. 4 (Oral), H302 Acute Tox. 4 (Dermal), H312 Acute Tox. 4 (Inhalation), H332 Skin Irrit. 2, H315 Eye Irrit. 2, H319 STOT SE 3, H335
benzidine (Component)	(CAS No) 92-87-5 (EC-No.) 202-199-1 (EC index no) 612-042-00-2	0.1	Acute Tox. 4 (Oral), H302 Carc. 1A, H350 Aquatic Acute 1, H400 Aquatic Chronic 1, H410
dinoseb (Component) substance listed as REACH Candidate (Dinoseb (6-sec-butyl-2,4-dinitrophenol))	(CAS No) 88-85-7 (EC-No.) 201-861-7 (EC index no) 609-025-00-7	0.1	Acute Tox. 2 (Oral), H300 Acute Tox. 2 (Dermal), H310 Eye Irrit. 2, H319 Repr. 1B, H360D Aquatic Acute 1, H400 Aquatic Chronic 1, H410
3,3'-dichlorobenzidine (Component)	(CAS No) 91-94-1 (EC-No.) 202-109-0 (EC index no) 612-068-00-4	0.1	Acute Tox. 4 (Dermal), H312 Skin Sens. 1, H317 Carc. 1B, H350 Aquatic Acute 1, H400 Aquatic Chronic 1, H410
Thiobencarb (Component)	(CAS No) 28249-77-6 (EC-No.) 248-924-5 (EC index no) 006-063-00-0	0.1	Acute Tox. 4 (Oral), H302 Aquatic Acute 1, H400 Aquatic Chronic 1, H410

Name	Product identifier	Specific concentration limits
2-naphthylamine (Component)	(CAS No) 91-59-8 (EC-No.) 202-080-4 (EC index no) 612-022-00-3	(C >= 0.01) Carc. 1A, H350
benzidine (Component)	(CAS No) 92-87-5 (EC-No.) 202-199-1 (EC index no) 612-042-00-2	(C >= 0.01) Carc. 1A, H350

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### SECTION 4: First aid measures

#### 4.1. Description of first aid measures

- First-aid measures general : Never give anything by mouth to an unconscious person. IF exposed or concerned: Get medical advice/attention.
- First-aid measures after inhalation : Allow victim to breathe fresh air. Allow the victim to rest.
- First-aid measures after skin contact : Remove affected clothing and wash all exposed skin area with mild soap and water, followed by warm water rinse.
- First-aid measures after eye contact : Rinse immediately with plenty of water. Obtain medical attention if pain, blinking or redness persists.
- First-aid measures after ingestion : Rinse mouth. Do NOT induce vomiting. Obtain emergency medical attention.

#### 4.2. Most important symptoms and effects, both acute and delayed

- Symptoms/effects after inhalation : May cause cancer by inhalation.

#### 4.3. Indication of any immediate medical attention and special treatment needed

No additional information available

### SECTION 5: Firefighting measures

#### 5.1. Extinguishing media

- Suitable extinguishing media : Use extinguishing media appropriate for surrounding fire.
- Unsuitable extinguishing media : Do not use a heavy water stream.

#### 5.2. Special hazards arising from the substance or mixture

- Explosion hazard : Heat may build pressure, rupturing closed containers, spreading fire and increasing risk of burns and injuries. Risk of explosion if heated under confinement.

#### 5.3. Advice for firefighters

- Firefighting instructions : Use water spray or fog for cooling exposed containers. Exercise caution when fighting any chemical fire. Prevent fire-fighting water from entering environment. DO NOT fight fire when fire reaches explosives. Evacuate area.
- Protection during firefighting : Do not enter fire area without proper protective equipment, including respiratory protection.

### SECTION 6: Accidental release measures

#### 6.1. Personal precautions, protective equipment and emergency procedures

##### 6.1.1. For non-emergency personnel

- Emergency procedures : Evacuate unnecessary personnel.

##### 6.1.2. For emergency responders

- Protective equipment : Equip cleanup crew with proper protection.
- Emergency procedures : Ventilate area.

#### 6.2. Environmental precautions

Prevent entry to sewers and public waters. Notify authorities if liquid enters sewers or public waters. Avoid release to the environment.

#### 6.3. Methods and material for containment and cleaning up

- Methods for cleaning up : Take up in absorbent material. Collect spillage.

#### 6.4. Reference to other sections

See Heading 8. Exposure controls and personal protection.

### SECTION 7: Handling and storage

#### 7.1. Precautions for safe handling

- Additional hazards when processed : Hazardous waste due to potential risk of explosion.
- Precautions for safe handling : Wash hands and other exposed areas with mild soap and water before eating, drinking or smoking and when leaving work. Provide good ventilation in process area to prevent formation of vapor. Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Keep away from sources of ignition - No smoking. No open flames. No smoking.
- Hygiene measures : Gently wash with plenty of soap and water. Remove/Take off immediately all contaminated clothing. Wash contaminated clothing before reuse.

#### 7.2. Conditions for safe storage, including any incompatibilities

- Technical measures : Proper grounding procedures to avoid static electricity should be followed.
- Storage conditions : Keep container closed when not in use. Keep in fireproof place. Keep container tightly closed and in a well-ventilated place. Keep away from any flames or sparking source.
- Incompatible materials : Direct sunlight. Heat sources.

#### 7.3. Specific end use(s)

No additional information available

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### SECTION 8: Exposure controls/personal protection

#### 8.1. Control parameters

<b>o-toluidine (95-53-4)</b>		
Belgium	Limit value (mg/m <sup>3</sup> )	8.9 mg/m <sup>3</sup> (o-Toluidine; Belgium; Time-weighted average exposure limit 8 h)
Belgium	Limit value (ppm)	2 ppm (o-Toluidine; Belgium; Time-weighted average exposure limit 8 h)
France	VME (mg/m <sup>3</sup> )	9 mg/m <sup>3</sup> (o-Toluidine; France; Time-weighted average exposure limit 8 h; VL: Valeur non réglementaire indicative)
France	VME (ppm)	2 ppm (o-Toluidine; France; Time-weighted average exposure limit 8 h; VL: Valeur non réglementaire indicative)
Italy - Portugal - USA ACGIH	ACGIH TWA (ppm)	2 ppm (o-Toluidine; USA; Time-weighted average exposure limit 8 h; TLV - Adopted Value)
United Kingdom	WEL TWA (mg/m <sup>3</sup> )	0.89 mg/m <sup>3</sup> o-Toluidine; United Kingdom; Time-weighted average exposure limit 8 h; Workplace exposure limit (EH40/2005)
United Kingdom	WEL TWA (ppm)	0.2 ppm o-Toluidine; United Kingdom; Time-weighted average exposure limit 8 h; Workplace exposure limit (EH40/2005)
<b>caprolactam (105-60-2)</b>		
EU	IOELV TWA (mg/m <sup>3</sup> )	10 mg/m <sup>3</sup> (e-Caprolactam, (dust and vapour); EU; Time-weighted average exposure limit 8 h; Indicative occupational exposure limit value)
EU	IOELV STEL (mg/m <sup>3</sup> )	40 mg/m <sup>3</sup> (e-Caprolactam, (dust and vapour); EU; Short time value; Indicative occupational exposure limit value)
Belgium	Limit value (mg/m <sup>3</sup> )	10 mg/m <sup>3</sup> (Caprolactame (vapeur); Belgium; Time-weighted average exposure limit 8 h; Caprolactame (poussières); 1 mg/m <sup>3</sup> ; Belgium; Time-weighted average exposure limit 8 h)
Belgium	Limit value (ppm)	2.2 ppm (Caprolactame (vapeur); Belgium; Time-weighted average exposure limit 8 h)
Belgium	Short time value (mg/m <sup>3</sup> )	40 mg/m <sup>3</sup> (Caprolactame (vapeur); Belgium; Short time value; Caprolactame (poussières); 3 mg/m <sup>3</sup> ; Belgium; Short time value)
Belgium	Short time value (ppm)	8.7 ppm (Caprolactame (vapeur); Belgium; Short time value)
France	VLE (mg/m <sup>3</sup> )	40 mg/m <sup>3</sup> (ε-Caprolactame (poudre et vapeur); France; Short time value; VRI: Valeur réglementaire indicative)
France	VME (mg/m <sup>3</sup> )	10 mg/m <sup>3</sup> (ε-Caprolactame (poudre et vapeur); France; Time-weighted average exposure limit 8 h; VRI: Valeur réglementaire indicative)
Italy - Portugal - USA ACGIH	ACGIH TWA (mg/m <sup>3</sup> )	5 mg/m <sup>3</sup> (Caprolactam; USA; Time-weighted average exposure limit 8 h; TLV - Adopted Value; Inhalable fraction and vapor)
Netherlands	Grenswaarde TGG 8H (mg/m <sup>3</sup> )	20 mg/m <sup>3</sup> (1,6-Hexanolactam, damp; Netherlands; Time-weighted average exposure limit 8 h; Public occupational exposure limit value; 1,6-Hexanolactam, stof; 1 mg/m <sup>3</sup> ; Netherlands; Time-weighted average exposure limit 8 h; Public occupational exposure limit value)
Netherlands	Grenswaarde TGG 8H (ppm)	5 ppm (1,6-Hexanolactam, damp; Netherlands; Time-weighted average exposure limit 8 h; Public occupational exposure limit value)
United Kingdom	WEL TWA (mg/m <sup>3</sup> )	1 mg/m <sup>3</sup> 1,6-Hexanolactam dust only; United Kingdom; Time-weighted average exposure limit 8 h; Workplace exposure limit (EH40/2005); 1,6-Hexanolactam dust and vapour; 10 mg/m <sup>3</sup> ; United Kingdom; Time-weighted average exposure limit 8 h; Workplace exposure limit (EH40/2005)
United Kingdom	WEL STEL (mg/m <sup>3</sup> )	3 mg/m <sup>3</sup> 1,6-Hexanolactam dust only; United Kingdom; Short time value; Workplace exposure limit (EH40/2005); 1,6-Hexanolactam dust and vapour; 20 mg/m <sup>3</sup> ; United Kingdom; Short time value; Workplace exposure limit (EH40/2005)

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<b>2-naphthylamine (91-59-8)</b>		
France	VME (mg/m <sup>3</sup> )	0.005 mg/m <sup>3</sup> (2-Naphtylamine; France; Time-weighted average exposure limit 8 h; VL: Valeur non réglementaire indicative)
France	VME (ppm)	0.001 ppm (2-Naphtylamine; France; Time-weighted average exposure limit 8 h; VL: Valeur non réglementaire indicative)
<b>atrazine (1912-24-9)</b>		
Belgium	Limit value (mg/m <sup>3</sup> )	5 mg/m <sup>3</sup> (Atrazine; Belgium; Time-weighted average exposure limit 8 h)
France	VME (mg/m <sup>3</sup> )	5 mg/m <sup>3</sup> (Atrazine; France; Time-weighted average exposure limit 8 h; VL: Valeur non réglementaire indicative)
Italy - Portugal - USA ACGIH	ACGIH TWA (mg/m <sup>3</sup> )	2 mg/m <sup>3</sup> (Atrazine; USA; Time-weighted average exposure limit 8 h; TLV - Adopted Value; Inhalable fraction)
<b>benzidine (92-87-5)</b>		
France	VME (mg/m <sup>3</sup> )	0.008 mg/m <sup>3</sup> (Benzidine; France; Time-weighted average exposure limit 8 h; VL: Valeur non réglementaire indicative)
France	VME (ppm)	0.001 ppm (Benzidine; France; Time-weighted average exposure limit 8 h; VL: Valeur non réglementaire indicative)
<b>Methylene Chloride (75-09-2)</b>		
Belgium	Limit value (mg/m <sup>3</sup> )	177 mg/m <sup>3</sup> (Chlorure de méthylène; Belgium; Time-weighted average exposure limit 8 h)
Belgium	Limit value (ppm)	50 ppm (Chlorure de méthylène; Belgium; Time-weighted average exposure limit 8 h)
France	VLE (mg/m <sup>3</sup> )	356 mg/m <sup>3</sup> (Dichlorométhane; France; Short time value; VRC: Valeur réglementaire contraignante)
France	VLE (ppm)	100 ppm (Dichlorométhane; France; Short time value; VRC: Valeur réglementaire contraignante)
France	VME (mg/m <sup>3</sup> )	178 mg/m <sup>3</sup> (Dichlorométhane; France; Time-weighted average exposure limit 8 h; VRC: Valeur réglementaire contraignante)
France	VME (ppm)	50 ppm (Dichlorométhane; France; Time-weighted average exposure limit 8 h; VRC: Valeur réglementaire contraignante)
Italy - Portugal - USA ACGIH	ACGIH TWA (ppm)	50 ppm (Dichloromethane (Methylene chloride); USA; Time-weighted average exposure limit 8 h; TLV - Adopted Value)
United Kingdom	WEL TWA (mg/m <sup>3</sup> )	350 mg/m <sup>3</sup> Dichloromethane; United Kingdom; Time-weighted average exposure limit 8 h; Workplace exposure limit (EH40/2005)
United Kingdom	WEL TWA (ppm)	100 ppm Dichloromethane; United Kingdom; Time-weighted average exposure limit 8 h; Workplace exposure limit (EH40/2005)
United Kingdom	WEL STEL (mg/m <sup>3</sup> )	1060 mg/m <sup>3</sup> Dichloromethane; United Kingdom; Short time value; Workplace exposure limit (EH40/2005)
United Kingdom	WEL STEL (ppm)	300 ppm Dichloromethane; United Kingdom; Short time value; Workplace exposure limit (EH40/2005)

### 8.2. Exposure controls

Appropriate engineering controls

: Either local exhaust or general room ventilation is usually required.

Personal protective equipment

: Avoid all unnecessary exposure. Gloves. Protective clothing. Protective goggles. Safety glasses.



Hand protection

: Wear chemically resistant protective gloves. Wear suitable gloves resistant to chemical penetration.

Eye protection

: Chemical goggles or safety glasses. Safety glasses.

Skin and body protection

: Wear chemically protective gloves, lab coat or apron to prevent prolonged or repeated skin contact.

Respiratory protection

: Wear appropriate mask.

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Other information : Do not eat, drink or smoke during use.

### SECTION 9: Physical and chemical properties

#### 9.1. Information on basic physical and chemical properties

Physical state : Liquid  
Color : Colorless.  
Odor : characteristic.  
pH : No data available  
Melting point : No data available  
Freezing point : No data available  
Boiling point : No data available  
Flash point : No data available  
Auto-ignition temperature : No data available  
Decomposition temperature : No data available  
Flammability (solid, gas) : Non flammable.  
Relative density : No data available  
Solubility : No data available  
Explosive properties : Risk of explosion if heated under confinement.  
Oxidizing properties : No data available  
Explosion limits : No data available

#### 9.2. Other information

No additional information available

### SECTION 10: Stability and reactivity

#### 10.1. Reactivity

No additional information available

#### 10.2. Chemical stability

Risk of explosion if heated under confinement. Extreme risk of explosion by shock, friction, fire or other sources of ignition.

#### 10.3. Possibility of hazardous reactions

Not established.

#### 10.4. Conditions to avoid

Direct sunlight. Extremely high or low temperatures. Heat. Sparks. Open flame. Overheating.

#### 10.5. Incompatible materials

No additional information available

#### 10.6. Hazardous decomposition products

No additional information available

### SECTION 11: Toxicological information

#### 11.1. Information on toxicological effects

Acute toxicity : Not classified

<b>o-toluidine (95-53-4)</b>	
LD50 oral rat	670 mg/kg (Rat)
LD50 dermal rabbit	3250 mg/kg (Rabbit)
ATE CLP (oral)	100 mg/kg body weight
ATE CLP (dermal)	3250 mg/kg body weight
ATE CLP (gases)	700 ppmV/4h
ATE CLP (vapors)	3 mg/l/4h
ATE CLP (dust, mist)	0.5 mg/l/4h

<b>caprolactam (105-60-2)</b>	
LD50 oral rat	1210 mg/kg (Rat; Equivalent or similar to OECD 401; Experimental value; 1475 mg/kg bodyweight; Rat; Equivalent or similar to OECD 401; Experimental value; 1876 mg/kg bodyweight; Rat)
LD50 dermal rat	> 2000 mg/kg (Rat; Experimental value; Other)
LD50 dermal rabbit	1438 mg/kg (Rabbit)
ATE CLP (oral)	1210 mg/kg body weight
ATE CLP (dermal)	1438 mg/kg body weight
ATE CLP (gases)	4500 ppmV/4h

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<b>caprolactam (105-60-2)</b>	
ATE CLP (vapors)	11 mg/l/4h
ATE CLP (dust, mist)	1.5 mg/l/4h
<b>molinate (2212-67-1)</b>	
LD50 oral rat	369 - 450 mg/kg (Rat)
LD50 dermal rat	1167 mg/kg (Rat)
LD50 dermal rabbit	3536 mg/kg (Rabbit)
ATE CLP (oral)	369 mg/kg body weight
ATE CLP (dermal)	1167 mg/kg body weight
ATE CLP (gases)	4500 ppmV/4h
ATE CLP (vapors)	11 mg/l/4h
ATE CLP (dust, mist)	1.5 mg/l/4h
<b>2-naphthylamine (91-59-8)</b>	
LD50 oral rat	727 mg/kg (Rat)
ATE CLP (oral)	727 mg/kg body weight
<b>atrazine (1912-24-9)</b>	
LD50 oral rat	672 mg/kg (Rat)
LD50 dermal rat	7500 mg/kg (Rat)
LC50 inhalation rat (mg/l)	5.2 mg/l/4h (Rat)
ATE CLP (oral)	672 mg/kg body weight
ATE CLP (dermal)	7500 mg/kg body weight
ATE CLP (vapors)	5.2 mg/l/4h
ATE CLP (dust, mist)	5.2 mg/l/4h
<b>dinoseb (88-85-7)</b>	
LD50 oral rat	25 - 40 mg/kg (Rat)
LD50 dermal rat	80 - 134 mg/kg (Rat)
LD50 dermal rabbit	80 mg/kg (Rabbit)
ATE CLP (oral)	25 mg/kg body weight
ATE CLP (dermal)	80 mg/kg body weight
<b>Thiobencarb (28249-77-6)</b>	
LD50 oral rat	1300 mg/kg (Rat)
LD50 dermal rat	2900 mg/kg (Rat)
LD50 dermal rabbit	> 2000 mg/kg (Rabbit)
ATE CLP (oral)	1300 mg/kg body weight
ATE CLP (dermal)	2900 mg/kg body weight
<b>benzidine (92-87-5)</b>	
LD50 oral rat	309 mg/kg (Rat; Literature study)
ATE CLP (oral)	309 mg/kg body weight
<b>3,3'-dichlorobenzidine (91-94-1)</b>	
LD50 oral rat	7070 mg/kg (Rat)
ATE CLP (oral)	7070 mg/kg body weight
ATE CLP (dermal)	1100 mg/kg body weight
<b>Methylene Chloride (75-09-2)</b>	
LD50 oral rat	> 2000 mg/kg (Rat; Literature study)
LD50 dermal rabbit	> 2000 mg/kg (Rabbit; Literature study)

Skin corrosion/irritation	: Not classified Based on available data, the classification criteria are not met
Serious eye damage/irritation	: Not classified Based on available data, the classification criteria are not met
Respiratory or skin sensitization	: Not classified Based on available data, the classification criteria are not met
Germ cell mutagenicity	: Not classified Based on available data, the classification criteria are not met
Carcinogenicity	: May cause cancer. May cause cancer
Reproductive toxicity	: Not classified Based on available data, the classification criteria are not met

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Specific target organ toxicity – single exposure	: Not classified Based on available data, the classification criteria are not met
Specific target organ toxicity – repeated exposure	: Not classified Based on available data, the classification criteria are not met
Aspiration hazard	: Not classified Based on available data, the classification criteria are not met
Potential Adverse human health effects and symptoms	: Based on available data, the classification criteria are not met.

### SECTION 12: Ecological information

#### 12.1. Toxicity

Ecology - water : Harmful to aquatic life with long lasting effects.

<b>o-toluidine (95-53-4)</b>	
LC50 fish 1	68 - 100 mg/l (LC50; 96 h; Leuciscus idus)
EC50 Daphnia 1	0.52 mg/l (EC50; 48 h)
<b>caprolactam (105-60-2)</b>	
EC50 Daphnia 1	> 1000 mg/l (EC50; OECD 202: Daphnia sp. Acute Immobilisation Test; 48 h; Daphnia magna; Static system; Fresh water; Experimental value)
Threshold limit algae 2	> 1000 mg/l (ErC50; OECD 201: Alga, Growth Inhibition Test; 72 h; Pseudokirchneriella subcapitata; Static system; Fresh water; Experimental value)
<b>molinate (2212-67-1)</b>	
EC50 Daphnia 1	0.6 mg/l (LC50; 96 h)
LC50 fish 2	1.3 mg/l (LC50; 96 h)
<b>atrazine (1912-24-9)</b>	
EC50 Daphnia 1	36.5 mg/l (EC50; 48 h)
LC50 fish 2	4.5 - 8.8 mg/l (LC50; 96 h)
<b>dinoseb (88-85-7)</b>	
LC50 fish 1	0.08 - 0.15 mg/l (LC50; 96 h)
EC50 Daphnia 1	0.68 mg/l (LC50)
<b>benzidine (92-87-5)</b>	
EC50 Daphnia 1	0.6 mg/l (EC50; 48 h)
LC50 fish 2	7.4 mg/l (LC50; 96 h; Salmo gairdneri)
Threshold limit algae 1	20 mg/l (LC50)
<b>3,3'-dichlorobenzidine (91-94-1)</b>	
EC50 other aquatic organisms 1	4.3 mg/l (72 h; Scenedesmus subspicatus; Growth rate)
LC50 fish 2	0.5 mg/l (LC50; 96 h)
<b>Methylene Chloride (75-09-2)</b>	
LC50 fish 1	193 mg/l (LC50; 96 h; Pimephales promelas)
EC50 Daphnia 1	168.2 mg/l (EC50; 48 h)

#### 12.2. Persistence and degradability

<b>Custom 8270 Cal Mix 2</b>	
Persistence and degradability	May cause long-term adverse effects in the environment.
<b>o-toluidine (95-53-4)</b>	
Persistence and degradability	Readily biodegradable in water. Forming sediments in water. Photolysis in the air.
Biochemical oxygen demand (BOD)	1.43 g O <sub>2</sub> /g substance
ThOD	2.54 g O <sub>2</sub> /g substance
BOD (% of ThOD)	0.56
<b>caprolactam (105-60-2)</b>	
Persistence and degradability	Readily biodegradable in water. Biodegradable in the soil. Highly mobile in soil.
Biochemical oxygen demand (BOD)	0.6 g O <sub>2</sub> /g substance (20 D)
Chemical oxygen demand (COD)	0.03 g O <sub>2</sub> /g substance (KMnO <sub>4</sub> )
<b>molinate (2212-67-1)</b>	
Persistence and degradability	Not readily biodegradable in water.
<b>2-naphthylamine (91-59-8)</b>	
Persistence and degradability	Not readily biodegradable in water.
ThOD	2.57 g O <sub>2</sub> /g substance



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<b>2-naphthylamine (91-59-8)</b>	
BOD (% of ThOD)	0.57
<b>atrazine (1912-24-9)</b>	
Persistence and degradability	Not readily biodegradable in water. Biodegradability in soil: no data available.
<b>dinoseb (88-85-7)</b>	
Persistence and degradability	Not readily biodegradable in water. Biodegradable in the soil.
<b>Thiobencarb (28249-77-6)</b>	
Persistence and degradability	Biodegradability in soil: no data available. Adsorbs into the soil.
<b>benzidine (92-87-5)</b>	
Persistence and degradability	Not readily biodegradable in water. Forming sediments in water. Non degradable in the soil. Adsorbs into the soil.
<b>3,3'-dichlorobenzidine (91-94-1)</b>	
Persistence and degradability	Inherently biodegradable. Not readily biodegradable in water. Photolysis in the air.
<b>Methylene Chloride (75-09-2)</b>	
Persistence and degradability	Not readily biodegradable in water. Biodegradable in the soil.
<b>12.3. Bioaccumulative potential</b>	
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Bioaccumulative potential	Not established.
<b>o-toluidine (95-53-4)</b>	
BCF fish 1	2.2 (BCF; 48 h)
BCF other aquatic organisms 1	5.9 (BCF)
Log Pow	1.29 - 1.4
Bioaccumulative potential	Low potential for bioaccumulation (BCF < 500).
<b>caprolactam (105-60-2)</b>	
BCF other aquatic organisms 1	< 1 (BCF; Other)
Log Pow	0.12 (Experimental value; Equivalent or similar to OECD 107; 25 °C)
Bioaccumulative potential	Low potential for bioaccumulation (Log Kow < 4).
<b>molinate (2212-67-1)</b>	
BCF fish 1	26.6 (BCF)
BCF fish 2	30 (BCF)
Log Pow	2.88
Bioaccumulative potential	Low potential for bioaccumulation (BCF < 500).
<b>2-naphthylamine (91-59-8)</b>	
BCF fish 1	32 (BCF)
Log Pow	2.08 - 2.4
Bioaccumulative potential	Low potential for bioaccumulation (BCF < 500).
<b>atrazine (1912-24-9)</b>	
BCF fish 1	3 - 4 (BCF)
BCF fish 2	3 - 10 (BCF)
BCF other aquatic organisms 1	52 (BCF; 24 h)
BCF other aquatic organisms 2	10 - 83 (BCF)
Log Pow	2.64
Bioaccumulative potential	Low potential for bioaccumulation (BCF < 500).
<b>dinoseb (88-85-7)</b>	
BCF fish 1	< 2.5 (BCF)
BCF fish 2	1 (BCF)
Log Pow	3.09 - 4.12
Bioaccumulative potential	Potential for bioaccumulation ( $4 \geq \text{Log Kow} \leq 5$ ).
<b>Thiobencarb (28249-77-6)</b>	
BCF fish 1	14 (BCF)
BCF fish 2	170 (BCF)
Log Pow	3.4
Bioaccumulative potential	Low potential for bioaccumulation (BCF < 500).
<b>benzidine (92-87-5)</b>	
BCF fish 1	55 (BCF)
BCF fish 2	38 - 42 (BCF; 908 h; <i>Lepomis macrochirus</i> )
BCF other aquatic organisms 1	2512 (BCF)

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<b>benzidine (92-87-5)</b>	
BCF other aquatic organisms 2	293 (BCF)
Log Pow	1.34 - 1.81
Bioaccumulative potential	Low potential for bioaccumulation (BCF < 500).

<b>3,3'-dichlorobenzidine (91-94-1)</b>	
BCF fish 1	507 (BCF; 168 h)
BCF fish 2	43 - 213 (BCF)
BCF other aquatic organisms 1	940 (BCF)
Log Pow	3.02 - 3.78
Bioaccumulative potential	Potential for bioaccumulation (500 ≤ BCF ≤ 5000).

<b>Methylene Chloride (75-09-2)</b>	
BCF fish 1	2 - 40 (BCF)
Log Pow	1.25 (Experimental value)
Bioaccumulative potential	Low potential for bioaccumulation (BCF < 500).

### 12.4. Mobility in soil

<b>o-toluidine (95-53-4)</b>	
Surface tension	0.043 N/m

<b>caprolactam (105-60-2)</b>	
Log Koc	log Koc,Other; 1.76; Calculated value

<b>atrazine (1912-24-9)</b>	
Ecology - soil	Toxic to flora. Not toxic to bees.

<b>dinoseb (88-85-7)</b>	
Ecology - soil	Toxic to bees.

<b>Methylene Chloride (75-09-2)</b>	
Surface tension	0.028 N/m (20 °C)
Ecology - soil	May be harmful to plant growth, blooming and fruit formation.

### 12.5. Results of PBT and vPvB assessment

Component	
o-toluidine (95-53-4)	This substance/mixture does not meet the PBT criteria of REACH, annex XIII This substance/mixture does not meet the vPvB criteria of REACH, annex XIII
dinoseb (88-85-7)	This substance/mixture does not meet the PBT criteria of REACH, annex XIII This substance/mixture does not meet the vPvB criteria of REACH, annex XIII

### 12.6. Other adverse effects

Additional information : Avoid release to the environment

## SECTION 13: Disposal considerations

### 13.1. Waste treatment methods

Product/Packaging disposal recommendations : Dispose in a safe manner in accordance with local/national regulations.  
Additional information : Hazardous waste due to potential risk of explosion.  
Ecology - waste materials : Avoid release to the environment.

## SECTION 14: Transport information

In accordance with ADR / RID / IMDG / IATA / ADN

### 14.1. UN number

UN-No. (ADR) : 2810  
UN-No. (IATA) : 2810  
UN-No. (IMDG) : 2810  
UN-No. (ADN) : 2810

### 14.2. UN proper shipping name

Proper Shipping Name (ADR) : TOXIC LIQUID, ORGANIC, N.O.S.  
Proper Shipping Name (IATA) : Toxic liquid, organic, n.o.s.  
Proper Shipping Name (IMDG) : TOXIC LIQUID, ORGANIC, N.O.S.  
Proper Shipping Name (ADN) : TOXIC LIQUID, ORGANIC, N.O.S.  
Transport document description (ADR) : UN 2810 TOXIC LIQUID, ORGANIC, N.O.S., 6.1, III, (E)

### 14.3. Packing group

Class (ADR) : 6.1

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Classification code (ADR) : T1  
Class (IATA) : 6.1  
Class (IMDG) : 6.1  
Class (ADN) : 6.1  
Classification code (ADN) : T1  
Hazard labels (ADR) : 6.1



Division (IATA) : 6.1  
Hazard labels (IATA) : 6.1



Hazard labels (IMDG) : 6.1



Hazard labels (ADN) : 6.1



### 14.4. Packing group

Packing group (ADR) : III  
Packing group (IATA) : III  
Packing group (IMDG) : III  
Packing group (ADN) : III

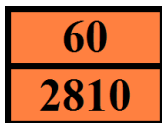
### 14.5. Environmental hazards

Other information : No supplementary information available.

### 14.6. Special precautions for user

#### 14.6.1. Overland transport

Hazard identification number (Kemler No.) : 60  
Classification code (ADR) : T1  
Orange plates :



Special provision (ADR) : 274, 614  
Transport category (ADR) : 2  
Tunnel restriction code (ADR) : E  
Limited quantities (ADR) : 5l  
Excepted quantities (ADR) : E1  
EAC : 2X  
APP : B

#### 14.6.2. Transport by sea

Special provision (IMDG) : 223, 274  
Limited quantities (IMDG) : 5 L  
Excepted quantities (IMDG) : E1  
Packing instructions (IMDG) : P001, LP01  
IBC packing instructions (IMDG) : IBC03  
Tank instructions (IMDG) : T7  
Tank special provisions (IMDG) : TP1, TP28

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EmS-No. (Fire)	: F-A
EmS-No. (Spillage)	: S-A
Stowage category (IMDG)	: A
Properties and observations (IMDG)	: Toxic if swallowed, by skin contact or by inhalation.

### 14.6.3. Air transport

CAO packing instructions (IATA)	: 663
CAO max net quantity (IATA)	: 220L
PCA packing instructions (IATA)	: 655
PCA Limited quantities (IATA)	: Y642
PCA limited quantity max net quantity (IATA)	: 2L
PCA max net quantity (IATA)	: 60L
PCA Excepted quantities (IATA)	: E1
Special provision (IATA)	: A3, A4, A137
ERG code (IATA)	: 6L

### 14.6.4. Inland waterway transport

Special provision (ADN)	: 274, 614, 802
Limited quantities (ADN)	: 5 L
Excepted quantities (ADN)	: E1
Carriage permitted (ADN)	: T
Equipment required (ADN)	: PP, EP, TOX, A
Ventilation (ADN)	: VE02
Number of blue cones/lights (ADN)	: 0
Carriage prohibited (ADN)	: No

### 14.7. Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code

Not applicable

## SECTION 15: Regulatory information

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

#### 15.1.1. EU-Regulations

Contains no REACH substances with Annex XVII restrictions

Contains substance on the candidate list in concentration  $\geq 0.1\%$  or with a lower specific limit: o-Toluidine (EC 202-429-0, CAS 95-53-4), Dinoseb (6-sec-butyl-2,4-dinitrophenol) (EC 201-861-7, CAS 88-85-7)

Contains no REACH Annex XIV substances.

#### 15.1.2. National regulations

##### Germany

Water hazard class (WGK) : 3 - strongly hazardous to water

### 15.2. Chemical safety assessment

No chemical safety assessment has been carried out

## SECTION 16: Other information

Data sources : REGULATION (EC) No 1272/2008 OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL of 16 December 2008 on classification, labeling and packaging of substances and mixtures, amending and repealing Directives 67/548/EEC and 1999/45/EC, and amending Regulation (EC) No 1907/2006.

Other information : None.

PHV SDS EU

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