SAFETY DATA SHEET

(REACH regulation (EC) n° 1907/2006 - n° 453/2010)

SECTION 1 : IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND OF THE COMPANY/UNDERTAKING

1.1. Product identifier

Product name : Tecflow Engine Flush
Product code : 788117

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

Automotive product.

1.3. Details of the supplier of the safety data sheet

Registered company name : Stam Automotive products
Address : Alkmaarseweg 147A , 1945 DD, Beverwijk. The Netherlands
Telephone : +31 251 223510
Email : info@tecflow.com

1.4. Emergency telephone number : +33 (0)1 45 42 59 59.

Association/Organisation : INRS / ORFILA http://www.centres-antipoison.net/index.html.

SECTION 2 : HAZARDS IDENTIFICATION

2.1. Classification of the substance or mixture

In compliance with EC regulation No. 1272/2008 and its amendments.

Repeated exposure may cause skin dryness or cracking (EUH066).
Serious eye damage, Category 1 (Eye Dam. 1, H318).
Specific target organ toxicity (single exposure), Category 3 (STOT SE 3, H336).
Aspiration hazard, Category 1 (Asp. Tox. 1, H304).
Hazardous to the aquatic environment - Chronic hazard, Category 2 (Aquatic Chronic 2, H411).
This mixture does not present a physical hazard. Refer to the recommendations regarding the other products present on the site.

In compliance with directives 67/548/EEC, 1999/45/EC and their amendments.

This mixture represents an aspiration risk due to its low viscosity: harmful (Xn, R 65).
Eye irritation (Xi, R 36).
Repeated exposure may cause skin dryness or cracking (R 66).
Vapours may cause drowsiness and dizziness (R 67).
Aquatic environmental hazard, chronic toxicity: toxic (N, R 51/53).
This mixture does not present a physical hazard. Refer to the recommendations regarding the other products present on the site.

2.2. Label elements

In compliance with EC regulation No. 1272/2008 and its amendments.

Hazard pictograms :



GHS05 GHS09 GHS07 GHS08

Signal Word :
DANGER
Product identifiers :

EC 918-811-1	HYDROCARBONS, C10, AROMATICS, <1% NAPHTHALENE
CAS 68439-45-2	ALCOHOLS, C6-12, ETHOXYLATED
EC 270-608-0	PHOSPHORODITHIOIC ACID, MIXED O,O-BIS(ISO-BU AND PENTYL) ESTERS, ZINC SALTS
EC 202-281-7	N,N-BIS(2-HYDROXYÉTHYL)OLEAMIDE

Hazard statements :

H304	May be fatal if swallowed and enters airways.
H318	Causes serious eye damage.

H336	May cause drowsiness or dizziness.
H411	Toxic to aquatic life with long lasting effects.
EUH066	Repeated exposure may cause skin dryness or cracking.
Precautionary statements - Prevention :	
P261	Avoid breathing vapours.
P273	Avoid release to the environment.
P280	Wear protective gloves/protective clothing/eye protection/face protection.
Precautionary statements - Response :	
P301 + P310	IF SWALLOWED: Immediately call a POISON CENTER/doctor/...
P304 + P340	IF INHALED: Remove person to fresh air and keep comfortable for breathing.
P305 + P351 + P338	IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P312	Call a POISON CENTER/doctor/.../if you feel unwell.
P331	Do NOT induce vomiting.
P391	Collect spillage.
Precautionary statements - Storage :	
P403 + P233	Store in a well-ventilated place. Keep container tightly closed.
Precautionary statements - Disposal :	
P501	Dispose of contents/container at a disposal facility in accordance with local regulations.

2.3. Other hazards

The mixture does not contain substances classified as 'Substances of Very High Concern' (SVHC) >= 0.1% published by the European CHemicals Agency (ECHA) under article 57 of REACH: http://echa.europa.eu/fr/candidate-list-table

The mixture satisfies neither the PBT nor the vPvB criteria for mixtures in accordance with annexe XIII of the REACH regulations EC 1907/2006.

SECTION 3 : COMPOSITION/INFORMATION ON INGREDIENTS

3.2. Mixtures

Composition :

Identification	(EC) 1272/2008	67/548/EEC	Note	%
INDEX: 649-467-00-8 CAS: 64742-54-7 EC: 265-157-1 REACH: 01-2119484627-25 DISTILLATES (PETROLEUM), HYDROTREATED HEAVY PARAFFINIC			L	25 <= x % < 50
CAS: (64742-94-5) EC: 918-811-1 REACH: 01-2119463583-34 HYDROCARBONS, C10, AROMATICS, <1% NAPHTHALENE	GHS09, GHS07, GHS08 Dgr Asp. Tox. 1, H304 STOT SE 3, H336 Aquatic Chronic 2, H411 EUH:066	Xn,N Xn;R65 N;R51/53 R66-R67		25 <= x % < 50
CAS: 111-76-2 EC: 203-905-0 REACH: 01-2119475108-36 2-BUTOXYETHANOL	GHS07 Wng Acute Tox. 4, H302 Acute Tox. 4, H312 Skin Irrit. 2, H315 Eye Irrit. 2, H319 Acute Tox. 4, H332	Xn Xn;R20/21/22 Xi;R36/38	[1]	2.5 <= x % < 10
CAS: 68439-45-2 ALCOHOLS, C6-12, ETHOXYLATED	GHS05 Dgr Eye Dam. 1, H318	Xi Xi;R41		1 <= x % < 2.5
CAS: 68457-79-4 EC: 270-608-0 REACH: 01-2119493628-22	GHS05, GHS09 Dgr Skin Irrit. 2, H315 Eye Dam. 1, H318	Xi,N Xi;R41-R38 N;R51/53		1 <= x % < 2.5

PHOSPHORODITHIOIC ACID, MIXED O,O-BIS(ISO-BU AND PENTYL) ESTERS, ZINC SALTS	Aquatic Chronic 2, H411			
CAS: 93-83-4 EC: 202-281-7 N,N-BIS(2-HYDROXYÉTHYL)OLEAMIDE	GHS05 Dgr Skin Irrit. 2, H315 Eye Dam. 1, H318	Xi Xi;R38-R41		1 <= x % < 2.5

Information on ingredients :

[1] Substance for which maximum workplace exposure limits are available.

Note L: The carcinogen classification does not apply because the substance contains less than 3 % w/w of dimethyl sulphoxide (DMSO) measured using the IP 346 method.

SECTION 4 : FIRST AID MEASURES

As a general rule, in case of doubt or if symptoms persist, always call a doctor.

NEVER induce swallowing by an unconscious person.

4.1. Description of first aid measures

In the event of exposure by inhalation :

In the event of massive inhalation, remove the person exposed to fresh air. Keep warm and at rest.

If the person is unconscious, place in recovery position. Notify a doctor in all events, to ascertain whether observation and supportive hospital care will be necessary.

If breathing is irregular or has stopped, effect mouth-to-mouth resuscitation and call a doctor.

In the event of splashes or contact with eyes :

Wash thoroughly with soft, clean water for 15 minutes holding the eyelids open.

Regardless of the initial state, refer the patient to an ophthalmologist and show him the label.

In the event of splashes or contact with skin :

Remove contaminated clothing and wash the skin thoroughly with soap and water or a recognised cleaner.

Watch out for any remaining product between skin and clothing, watches, shoes, etc.

If the contaminated area is widespread and/or there is damage to the skin, a doctor must be consulted or the patient transferred to hospital.

In the event of swallowing :

Do not give the patient anything orally.

In the event of swallowing, if the quantity is small (no more than one mouthful), rinse the mouth with water and consult a doctor.

Seek medical attention, showing the label.

If swallowed accidentally, call a doctor to ascertain whether observation and hospital care will be necessary. Show the label.

If swallowed accidentally, do not allow to drink, do not induce vomiting and transfer to hospital immediately by ambulance. Show the label to the doctor.

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

No data available.

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

No data available.

SECTION 5 : FIREFIGHTING MEASURES

Non-flammable.

5.1. Extinguishing media

Suitable methods of extinction

In the event of a fire, use :

- sprayed water or water mist
- foam
- multipurpose ABC powder
- BC powder
- carbon dioxide (CO2)
- water with AFFF (Aqueous Film Forming Foam) additive
- halon

Unsuitable methods of extinction

In the event of a fire, do not use :

- water jet

5.2. Special hazards arising from the substance or mixture

A fire will often produce a thick black smoke. Exposure to decomposition products may be hazardous to health.

Do not breathe in smoke.

In the event of a fire, the following may be formed :

- carbon monoxide (CO)
- carbon dioxide (CO2)

5.3. Advice for firefighters

Due to the toxicity of the gas emitted on thermal decomposition of the products, fire-fighting personnel are to be equipped with autonomous insulating breathing apparatus.

SECTION 6 : ACCIDENTAL RELEASE MEASURES

6.1. Personal precautions, protective equipment and emergency procedures

Consult the safety measures listed under headings 7 and 8.

For non first aid worker

Avoid inhaling the vapors.

Avoid any contact with the skin and eyes.

If a large quantity has been spilt, evacuate all personnel and only allow intervention by trained operators equipped with safety apparatus.

For first aid worker

First aid workers will be equipped with suitable personal protective equipment (See section 8).

6.2. Environmental precautions

Contain and control the leaks or spills with non-combustible absorbent materials such as sand, earth, vermiculite, diatomaceous earth in drums for waste disposal.

Prevent any material from entering drains or waterways.

6.3. Methods and material for containment and cleaning up

Clean preferably with a detergent, do not use solvents.

6.4. Reference to other sections

No data available.

SECTION 7 : HANDLING AND STORAGE

Requirements relating to storage premises apply to all facilities where the mixture is handled.

7.1. Precautions for safe handling

Always wash hands after handling.

Remove and wash contaminated clothing before re-using.

Ensure that there is adequate ventilation, especially in confined areas.

Emergency showers and eye wash stations will be required in facilities where the mixture is handled constantly.

Fire prevention :

Handle in well-ventilated areas.

Never inhale this mixture.

Prevent access by unauthorised personnel.

Recommended equipment and procedures :

For personal protection, see section 8.

Observe precautions stated on label and also industrial safety regulations.

Avoid inhaling vapors.

Avoid inhaling vapors. Carry out any industrial operation which may give rise to this in a sealed apparatus.

Provide vapor extraction at the emission source and also general ventilation of the premises.

Also provide breathing apparatus for certain short tasks of an exceptional nature and for emergency interventions.

In all cases, recover emissions at source.

Avoid eye contact with this mixture at all times.

Packages which have been opened must be reclosed carefully and stored in an upright position.

Prohibited equipment and procedures :

No smoking, eating or drinking in areas where the mixture is used.

7.2. Conditions for safe storage, including any incompatibilities

No data available.

Storage

Keep the container tightly closed in a dry, well-ventilated place.

Keep away from food and drink, including those for animals.

The floor must be impermeable and form a collecting basin so that, in the event of an accidental spillage, the liquid cannot spread beyond this area.

Packaging

Always keep in packaging made of an identical material to the original.

7.3. Specific end use(s)

No data available.

SECTION 8 : EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1. Control parameters

Occupational exposure limits :

- European Union (2009/161/EU, 2006/15/EC, 2000/39/EC, 98/24/EC)

CAS	VME-mg/m3 :	VME-ppm :	VLE-mg/m3 :	VLE-ppm :	Notes :
111-76-2	98	20	246	50	Peau

- ACGIH TLV (American Conference of Governmental Industrial Hygienists, Threshold Limit Values, 2010) :

CAS	TWA :	STEL :	Ceiling :	Definition :	Criteria :
111-76-2	20 ppm	-	-	-	-

- Germany - AGW (BAuA - TRGS 900, 21/06/2010) :

CAS	VME :	VME :	Excess	Notes	
111-76-2	20 ml/m3	98 mg/m3	4(II)	DFG, H, Y	

- Belgium (Order of 19/05/2009, 2010) :

CAS	TWA :	STEL :	Ceiling :	Definition :	Criteria :
111-76-2	20 ppm	50 ppm	-	-	-

- France (INRS - ED984 :2008) :

CAS	VME-ppm :	VME-mg/m3 :	VLE-ppm :	VLE-mg/m3 :	Notes :	TMP No :
111-76-2	10	49	50	246	*	84

- Switzerland (SUVA 2009) :

CAS	VME-mg/m3 :	VME-ppm :	VLE-mg/m3 :	VLE-ppm :	Temps :	RSB :
111-76-2	49	10	98	20	4x15	RB

- UK / WEL (Workplace exposure limits, EH40/2005, 2007) :

CAS	TWA :	STEL :	Ceiling :	Definition :	Criteria :
111-76-2	25 ppm	50 ppm	-	-	-

Derived no effect level (DNEL) or derived minimum effect level (DMEL):

PHOSPHORODITHIOIC ACID, MIXED O,O-BIS(ISO-BU AND PENTYL) ESTERS, ZINC SALTS (CAS: 68457-79-4)

Final use:	**Workers.**
Exposure method:	Dermal contact.
Potential health effects:	Long term systemic effects.
DNEL :	11.87 mg/kg body weight/day
Exposure method:	Inhalation.
Potential health effects:	Long term systemic effects.
DNEL :	8.13 mg of substance/m3

Final use:	**Consumers.**
Exposure method:	Ingestion.
Potential health effects:	Long term systemic effects.
DNEL :	0.24 mg/kg body weight/day
Exposure method:	Dermal contact.
Potential health effects:	Long term systemic effects.
DNEL :	5.93 mg/kg body weight/day
Exposure method:	Inhalation.
Potential health effects:	Long term systemic effects.
DNEL :	2.06 mg of substance/m3

2-BUTOXYETHANOL (CAS: 111-76-2)

Final use:	**Workers.**
Exposure method:	Dermal contact.
Potential health effects:	Short term systemic effects.
DNEL :	89 mg/kg body weight/day
Exposure method:	Dermal contact.
Potential health effects:	Long term systemic effects.

DNEL :	75 mg/kg body weight/day
Exposure method:	Inhalation.
Potential health effects:	Short term systemic effects.
DNEL :	135 ppm
Exposure method:	Inhalation.
Potential health effects:	Short term local effects.
DNEL :	50 ppm
Exposure method:	Inhalation.
Potential health effects:	Long term systemic effects.
DNEL :	20 ppm
Final use:	**Consumers.**
Exposure method:	Ingestion.
Potential health effects:	Short term systemic effects.
DNEL :	13.4 mg/kg body weight/day
Exposure method:	Ingestion.
Potential health effects:	Long term systemic effects.
DNEL :	3.2 mg/kg body weight/day
Exposure method:	Dermal contact.
Potential health effects:	Short term systemic effects.
DNEL :	44.5 mg/kg body weight/day
Exposure method:	Dermal contact.
Potential health effects:	Long term systemic effects.
DNEL :	38 mg/kg body weight/day
Exposure method:	Inhalation.
Potential health effects:	Short term systemic effects.
DNEL :	426 mg of substance/m3
Exposure method:	Inhalation.
Potential health effects:	Short term systemic effects.
DNEL :	123 mg of substance/m3
Exposure method:	Inhalation.
Potential health effects:	Long term systemic effects.
DNEL :	49 mg of substance/m3

HYDROCARBONS, C10, AROMATICS, <1% NAPHTHALENE (CAS: (64742-94-5))

Final use:	**Workers.**
Exposure method:	Dermal contact.
Potential health effects:	Long term systemic effects.
DNEL :	12.5 mg/kg body weight/day
Exposure method:	Inhalation.
Potential health effects:	Long term systemic effects.
DNEL :	151 mg of substance/m3
Final use:	**Consumers.**
Exposure method:	Ingestion.
Potential health effects:	Long term systemic effects.
DNEL :	7.5 mg/kg body weight/day
Exposure method:	Dermal contact.
Potential health effects:	Long term systemic effects.
DNEL :	7.5 mg/kg body weight/day
Exposure method:	Inhalation.
Potential health effects:	Long term systemic effects.

DNEL : 32 mg of substance/m3

Predicted no effect concentration (PNEC):

PHOSPHORODITHIOIC ACID, MIXED O,O-BIS(ISO-BU AND PENTYL) ESTERS, ZINC SALTS (CAS: 68457-79-4)

Environmental compartment: Fresh water.
PNEC : 0.0000046 mg/l

Environmental compartment: Sea water.
PNEC : 0.000046 mg/l

Environmental compartment: Waste water treatment plant.
PNEC : 100 mg/l

2-BUTOXYETHANOL (CAS: 111-76-2)

Environmental compartment: Soil.
PNEC : 2.8 mg/kg

Environmental compartment: Fresh water.
PNEC : 8.8 mg/l

Environmental compartment: Sea water.
PNEC : 0.88 mg/l

Environmental compartment: Fresh water sediment.
PNEC : 34.6 mg/kg

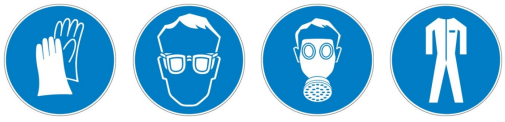
Environmental compartment: Marine sediment.
PNEC : 3.46 mg/kg

Environmental compartment: Waste water treatment plant.
PNEC : 463 mg/l

8.2. Exposure controls

Personal protection measures, such as personal protective equipment

Pictogram(s) indicating the obligation of wearing personal protective equipment (PPE) :



Use personal protective equipment that is clean and has been properly maintained.
Store personal protective equipment in a clean place, away from the work area.
Never eat, drink or smoke during use. Remove and wash contaminated clothing before re-using. Ensure that there is adequate ventilation, especially in confined areas.

- Eye / face protection

Avoid contact with eyes.
Use eye protectors designed to protect against liquid splashes
Before handling, wear safety goggles with protective sides accordance with standard EN166.
In the event of high danger, protect the face with a face shield.
Prescription glasses are not considered as protection.
Individuals wearing contact lenses should wear prescription glasses during work where they may be exposed to irritant vapours.
Provide eyewash stations in facilities where the product is handled constantly.

- Hand protection

Use suitable protective gloves that are resistant to chemical agents in accordance with standard EN374.
Gloves must be selected according to the application and duration of use at the workstation.
Protective gloves need to be selected according to their suitability for the workstation in question : other chemical products that may be handled, necessary physical protections (cutting, pricking, heat protection), level of dexterity required.
Type of gloves recommended :
- PVA (Polyvinyl alcohol)
Recommended properties :
- Impervious gloves in accordance with standard EN374

- Body protection

Avoid skin contact.
Wear suitable protective clothing.
Suitable type of protective clothing :
In the event of substantial spatter, wear liquid-tight protective clothing against chemical risks (type 3) in accordance with EN14605 to prevent skin contact.
In the event of a risk of splashing, wear protective clothing against chemical risks (type 6) in accordance with EN13034 to prevent skin contact.
Work clothing worn by personnel shall be laundered regularly.
After contact with the product, all parts of the body that have been soiled must be washed.

- Respiratory protection

Avoid breathing vapours.
If the ventilation is insufficient, wear appropriate breathing apparatus.
When workers are confronted with concentrations that are above occupational exposure limits, they must wear a suitable, approved, respiratory protection device.
Anti-gas and vapour filter(s) (Combined filters) in accordance with standard EN14387 :
- A1 (Brown)

SECTION 9 : PHYSICAL AND CHEMICAL PROPERTIES

9.1. Information on basic physical and chemical properties

General information :

Physical state :	Fluid liquid.

Important health, safety and environmental information

pH :	Not relevant.
Flash Point Interval :	60°C < PE <= 93°C
Vapour pressure (50°C) :	Below 110 kPa (1.10 bar).
Density :	< 1
Water solubility :	Insoluble.
Viscosity:	v < 7 mm2/s (40°C)

9.2. Other information

No data available.

SECTION 10 : STABILITY AND REACTIVITY

10.1. Reactivity

No data available.

10.2. Chemical stability

This mixture is stable under the recommended handling and storage conditions in section 7.

10.3. Possibility of hazardous reactions

When exposed to high temperatures, the mixture can release hazardous decomposition products, such as carbon monoxide and dioxide, fumes and nitrogen oxide.

10.4. Conditions to avoid

Avoid :
- accumulation of electrostatic charges.
- heating
- heat
- flames and hot surfaces

10.5. Incompatible materials

Keep away from :
- oxidising agents

10.6. Hazardous decomposition products

The thermal decomposition may release/form :
- carbon monoxide (CO)
- carbon dioxide (CO2)

SECTION 11 : TOXICOLOGICAL INFORMATION

11.1. Information on toxicological effects

Exposure to vapours from solvents in the mixture in excess of the stated occupational exposure limit may result in adverse health effects such as mucous membrane and respiratory system irritation and adverse effects on kidney, liver and central nervous system.
Symptoms produced will include headaches, numbness, dizziness, fatigue, muscular asthenia and, in extreme cases, loss of consciousness.
Repeated or prolonged contact with the mixture may cause removal of natural oil from the skin resulting in non-allergic contact dermatitis and

absorption through the skin.
May have irreversible effects on the eyes, such as tissue damage in the eye, or serious physical decay of sight, which is not fully reversible by the end of observation at 21 days.
Serious eye damage is typified by the destruction of cornea, persistent corneal opacity and iritis.
Narcotic effects may occur, such as drowsiness, narcosis, decreased alertness, loss of reflexes, lack of coordination or dizziness.
Effects may also occur in the form of violent headaches or nausea, judgement disorder, giddiness, irritability, fatigue or memory disturbance.
Aspiration toxicity includes severe acute effects such as chemical pneumonia, varying degrees of pulmonary injury or death following aspiration.

11.1.1. Substances

Acute toxicity :

2-BUTOXYETHANOL (CAS: 111-76-2)

Oral route :	LD50 = 1300 mg/kg Species : Rat
Dermal route :	1,000 < LD50 <= 2000 mg/kg
Inhalation route (Dusts/mist) :	1 < LC50 <= 5 mg/l

HYDROCARBONS, C10, AROMATICS, <1% NAPHTHALENE (CAS: (64742-94-5))

Oral route :	LD50 > 5000 mg/kg Species : Rat

11.1.2. Mixture

Aspiration hazard :

May be fatal if swallowed and enters airways.
Aspiration toxicity includes severe acute effects such as chemical pneumonia, varying degrees of pulmonary injury or death following aspiration.

Monograph(s) from the IARC (International Agency for Research on Cancer) :

CAS 111-76-2 : IARC Group 3 : The agent is not classifiable as to its carcinogenicity to humans.

SECTION 12 : ECOLOGICAL INFORMATION

Toxic to aquatic life with long lasting effects.
The product must not be allowed to run into drains or waterways.

12.1. Toxicity

12.1.1. Substances

PHOSPHORODITHIOIC ACID, MIXED O,O-BIS(ISO-BU AND PENTYL) ESTERS, ZINC SALTS (CAS: 68457-79-4)

Fish toxicity :	LC50 = 4.5 mg/l Species : Cyprinodon variegatus Duration of exposure : 96 h OECD Guideline 203 (Fish, Acute Toxicity Test)
Crustacean toxicity :	EC50 = 23 mg/l Species : Daphnia magna Duration of exposure : 48 h OECD Guideline 202 (Daphnia sp. Acute Immobilisation Test) NOEC = 0.8 mg/l Species : Daphnia magna Duration of exposure : 21 days
Algae toxicity :	ECr50 = 21 mg/l Duration of exposure : 72 h

HYDROCARBONS, C10, AROMATICS, <1% NAPHTHALENE (CAS: (64742-94-5))

Fish toxicity :	1 < LC50 <= 10 mg/l Species : Oncorhynchus mykiss Duration of exposure : 96 h 0,1 < NOEC <= 1 mg/l
Crustacean toxicity :	1 < EC50 <= 10 mg/l Species : Daphnia magna Duration of exposure : 48 h

	0,1 < NOEC <= 1 mg/l
Algae toxicity :	1 < ECr50 <= 10 mg/l Species : Pseudokirchnerella subcapitata Duration of exposure : 72 h

2-BUTOXYETHANOL (CAS: 111-76-2)

Fish toxicity :	LC50 = 1474 mg/l Species : Oncorhynchus mykiss Duration of exposure : 96 h
	NOEC > 100 mg/l Species : Danio rerio Duration of exposure : 21 days
Crustacean toxicity :	EC50 = 1550 mg/l Species : Daphnia magna Duration of exposure : 48 h
	NOEC = 100 mg/l Species : Daphnia magna Duration of exposure : 21 days
Algae toxicity :	ECr50 = 911 mg/l Species : Pseudokirchnerella subcapitata Duration of exposure : 72 h

12.1.2. Mixtures

No aquatic toxicity data available for the mixture.

12.2. Persistence and degradability

12.2.1. Substances

PHOSPHORODITHIOIC ACID, MIXED O,O-BIS(ISO-BU AND PENTYL) ESTERS, ZINC SALTS (CAS: 68457-79-4)

Biodegradability :	Not fast degrading.

2-BUTOXYETHANOL (CAS: 111-76-2)

Biodegradability :	Fast degrading.

HYDROCARBONS, C10, AROMATICS, <1% NAPHTHALENE (CAS: (64742-94-5))

Biodegradability :	no degradability data is available, the substance is considered as not degrading quickly.

12.3. Bioaccumulative potential

12.3.1. Substances

PHOSPHORODITHIOIC ACID, MIXED O,O-BIS(ISO-BU AND PENTYL) ESTERS, ZINC SALTS (CAS: 68457-79-4)

Octanol/water partition coefficient :	log Koe = 0.69

2-BUTOXYETHANOL (CAS: 111-76-2)

Octanol/water partition coefficient :	log Koe = 0.81
Bioaccumulation :	BCF < 100.

HYDROCARBONS, C10, AROMATICS, <1% NAPHTHALENE (CAS: (64742-94-5))

Octanol/water partition coefficient :	log Koe > 3.7

12.4. Mobility in soil

No data available.

12.5. Results of PBT and vPvB assessment

No data available.

12.6. Other adverse effects

No data available.

German regulations concerning the classification of hazards for water (WGK) :

WGK 2 (VwVwS vom 27/07/2005, KBws) : Hazardous for water.

SECTION 13 : DISPOSAL CONSIDERATIONS

Proper waste management of the mixture and/or its container must be determined in accordance with Directive 2008/98/EC.

13.1. Waste treatment methods

Do not pour into drains or waterways.

Waste :

Waste management is carried out without endangering human health, without harming the environment and, in particular without risk to water, air, soil, plants or animals.

Recycle or dispose of waste in compliance with current legislation, preferably via a certified collector or company.

Do not contaminate the ground or water with waste, do not dispose of waste into the environment.

Soiled packaging :

Empty container completely. Keep label(s) on container.

Give to a certified disposal contractor.

SECTION 14 : TRANSPORT INFORMATION

Transport product in compliance with provisions of the ADR for road, RID for rail, IMDG for sea and ICAO/IATA for air transport (ADR 2013 - IMDG 2012 - ICAO/IATA 2014).

14.1. UN number

3082

14.2. UN proper shipping name

UN3082=ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S.
(hydrocarbons, c10, aromatics, <1% naphthalene)

14.3. Transport hazard class(es)

- Classification :



9

14.4. Packing group

III

14.5. Environmental hazards

- Environmentally hazardous material :



14.6. Special precautions for user

ADR/RID	Class	Code	Pack gr.	Label	Ident.	LQ	Provis.	EQ	Cat.	Tunnel
	9	M6	III	9	90	5 L	274 335 601	E1	3	E

IMDG	Class	2°Label	Pack gr.	LQ	EMS	Provis.	EQ
	9	-	III	5 L	F-A,S-F	274 335	E1

IATA	Class	2°Label	Pack gr.	Passager	Passager	Cargo	Cargo	note	EQ
	9	-	III	964	450 L	964	450 L	A97 A158	E1
	9	-	III	Y964	30 kg G	-	-	A97 A158	E1

For limited quantities, see part 2.7 of the OACI/IATA and chapter 3.4 of the ADR and IMDG.

For excepted quantities, see part 2.6 of the OACI/IATA and chapter 3.5 of the ADR and IMDG.

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

No data available.

SECTION 15 : REGULATORY INFORMATION

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

- Classification and labelling information included in section 2:

The following regulations have been used:
- Directive 67/548/EEC and its adaptations
- Directive 1999/45/EC and its adaptations
- EU Regulation No. 1272/2008 amended by EU Regulation No. 487/2013.
- EU Regulation No. 1272/2008 amended by EU Regulation No. 758/2013.
- EU Regulation No. 1272/2008 amended by EU Regulation No. 944/2013.
- EU Regulation No. 1272/2008 amended by EU Regulation No. 605/2014.

- Container information:

No data available.

- Particular provisions :

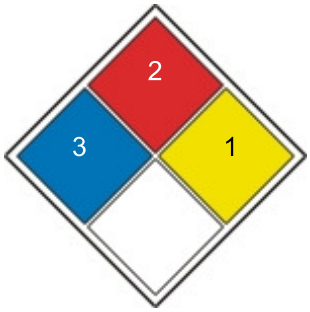
No data available.

- German regulations concerning the classification of hazards for water (WGK) :

WGK 2 (VwVwS vom 27/07/2005, KBws) : Hazardous for water.

- Standardised American system for the identification of hazards presented by the product in view of emergency procedures (NFPA 704) :

NFPA 704, Labelling: Health=3 Inflammability=2 Instability/Reactivity=1 Specific Risk=none



- Swiss ordinance on the incentive tax on volatile organic compounds :

111-76-2	2-n-butoxyéthanol

15.2. Chemical safety assessment

No data available.

SECTION 16 : OTHER INFORMATION

Since the user's working conditions are not known by us, the information supplied on this safety data sheet is based on our current level of knowledge and on national and community regulations.
The mixture must not be used for other uses than those specified in section 1 without having first obtained written handling instructions.
It is at all times the responsibility of the user to take all necessary measures to comply with legal requirements and local regulations.
The information in this safety data sheet must be regarded as a description of the safety requirements relating to the mixture and not as a guarantee of the properties thereof.

In compliance with directives 67/548/EEC, 1999/45/EC and their amendments.

Hazard symbols :



Harmful



Dangerous for the environment

Contains :

EC 918-811-1	HYDROCARBONS, C10, AROMATICS, <1% NAPHTHALENE
Risk phrase :	
R 51/53	Toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.
R 36	Irritating to eyes.
R 65	Harmful: may cause lung damage if swallowed.
R 66	Repeated exposure may cause skin dryness or cracking.
R 67	Vapours may cause drowsiness and dizziness.
Safety phrase :	
S 61	Avoid release to the environment. Refer to special instructions/Safety data sheets.
S 26	In case of contact with eyes, rinse immediately with plenty of water and seek medical advice.
S 60	This material and its container must be disposed of as hazardous waste.

S 62	If swallowed, do not induce vomiting: seek medical advice immediately and show this container or label.
S 57	Use appropriate container to avoid environmental contamination.

Title for H, EUH and R indications mentioned in section 3 :

H302	Harmful if swallowed.
H304	May be fatal if swallowed and enters airways.
H312	Harmful in contact with skin.
H315	Causes skin irritation.
H318	Causes serious eye damage.
H319	Causes serious eye irritation.
H332	Harmful if inhaled.
H336	May cause drowsiness or dizziness.
H411	Toxic to aquatic life with long lasting effects.
EUH066	Repeated exposure may cause skin dryness or cracking.
R 20/21/22	Harmful by inhalation, in contact with skin and if swallowed.
R 36/38	Irritating to eyes and skin.
R 38	Irritating to skin.
R 41	Risk of serious damage to eyes.
R 51/53	Toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.
R 65	Harmful: may cause lung damage if swallowed.
R 66	Repeated exposure may cause skin dryness or cracking.
R 67	Vapours may cause drowsiness and dizziness.

Abbreviations :

DNEL : Derived No-Effect Level
PNEC : Predicted No-Effect Concentration
ADR : European agreement concerning the international carriage of dangerous goods by Road.
IMDG : International Maritime Dangerous Goods.
IATA : International Air Transport Association.
ICAO : International Civil Aviation Organisation
RID : Regulations concerning the International carriage of Dangerous goods by rail.
WGK : Wassergefahrdungsklasse (Water Hazard Class).
GHS05 : Corrosion
GHS07 : Exclamation mark
GHS08 : Health hazard
GHS09 : Environment