

**BLACKFIRE**



**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 : BLACKFIRE

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

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

Registered company name : GEB.

Address : CS 62062.95972.ROISSY CDG CEDEX . France.

Telephone : 01 48 17 99 99. Fax : 01 48 17 98 00.

geb@geb.fr

www.geb.fr

**1.4. Emergency telephone number : 01 45 42 59 59.**

Association/Organisation : INRS.

**SECTION 2 : HAZARDS IDENTIFICATION**

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

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

Flammable aerosol, Category 1 (Aerosol 1, H222 - H229).

Eye irritation, Category 2 (Eye Irrit. 2, H319).

Specific target organ toxicity (single exposure), Category 3 (STOT SE 3, H336).

Hazardous to the aquatic environment - Chronic hazard, Category 3 (Aquatic Chronic 3, H412).

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

Extremely flammable (F+, R 12).

Vapours may cause drowsiness and dizziness (R 67).

Aquatic environmental hazard, chronic toxicity: harmful (R 52/53).

**2.2. Label elements**

Mixture for aerosol application.

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

Hazard pictograms :



GHS07



GHS02

Signal Word :

DANGER

Product identifiers :

CAS 64742-49-0 HYDROCARBONS, C6, ISOALKANES, <5% N-HEXANE

Hazard statements :

H222 Extremely flammable aerosol.

H229 Pressurised container: May burst if heated.

H319 Causes serious eye irritation.

H336 May cause drowsiness or dizziness.

H412 Harmful to aquatic life with long lasting effects.

Precautionary statements - General :

P101 If medical advice is needed, have product container or label at hand.

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P102 Keep out of reach of children.

Precautionary statements - Prevention :

P210 Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.

P211 Do not spray on an open flame or other ignition source.

P251 Do not pierce or burn, even after use.

P271 Use only outdoors or in a well-ventilated area.

Precautionary statements - Storage :

P410 + P412 Protect from sunlight. Do not expose to temperatures exceeding 50 °C/122°F.

Precautionary statements - Disposal :

P501 Dispose of contents/container to ...

### 2.3. Other hazards

The mixture does not contain substances classified as 'Substances of Very High Concern' (SVHC)  $\geq 0.1\%$  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: 601-004-00-0 CAS: 106-97-8 EC: 203-448-7  BUTANE	GHS02, GHS04 Dgr Flam. Gas 1, H220	F+ F+;R12	C [1]	25 <= x % < 50
INDEX: 601-003-00-5 CAS: 74-98-6 EC: 200-827-9  PROPANE	GHS02, GHS04 Dgr Flam. Gas 1, H220	F+ F+;R12	[1]	10 <= x % < 25
CAS: 64742-49-0  HYDROCARBONS, C6, ISOALKANES, <5% N-HEXANE	GHS09, GHS07, GHS08 Dgr Asp. Tox. 1, H304 STOT SE 3, H336 Aquatic Chronic 2, H411	Xn,N Xn;R65 N;R51/53 F;R11 R67		10 <= x % < 25
INDEX: 606-001-00-8 CAS: 67-64-1 EC: 200-662-2 REACH: 01-2119471330-49-xxxx  ACETONE	GHS02, GHS07 Dgr Flam. Liq. 2, H225 Eye Irrit. 2, H319 STOT SE 3, H336 EUH:066	Xi,F Xi;R36 F;R11 R66-R67	[1]	10 <= x % < 25
INDEX: 601-022-00-9 CAS: 1330-20-7 EC: 215-535-7  XYLENE	GHS02, GHS07 Wng Flam. Liq. 3, H226 Acute Tox. 4, H332 Acute Tox. 4, H312 Skin Irrit. 2, H315	Xn Xn;R20/21 Xi;R38 R10	C [1]	2.5 <= x % < 10
DISPERSION ACRYLIQUE PIGMENTÉE NOIRE	GHS09, GHS07, GHS08 Dgr Asp. Tox. 1, H304 STOT SE 3, H335 STOT SE 3, H336 Aquatic Chronic 2, H411	Xn,N Xn;R65 Xi;R37 N;R51/53 R10 R67		2.5 <= x % < 10

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INDEX: 603-004-00-6 CAS: 71-36-3 EC: 200-751-6  N-BUTANOL	GHS02, GHS05, GHS07 Dgr Flam. Liq. 3, H226 Acute Tox. 4, H302 STOT SE 3, H335 Skin Irrit. 2, H315 Eye Dam. 1, H318 STOT SE 3, H336	Xn Xn;R22 Xi;R37/38-R41 R10 R67	[1]	0 <= x % < 2.5
INDEX: 609-001-00-6 CAS: 108-03-2 EC: 203-544-9  NITROPROPANE 1-	GHS02, GHS07 Wng Flam. Liq. 3, H226 Acute Tox. 4, H332 Acute Tox. 4, H312 Acute Tox. 4, H302	Xn Xn;R20/21/22 R10	[1]	0 <= x % < 2.5
INDEX: 609-035-00-1 CAS: 79-24-3 EC: 201-188-9  NITROETHANE	GHS02, GHS07 Wng Flam. Liq. 3, H226 Acute Tox. 4, H332 Acute Tox. 4, H302	Xn Xn;R20/22 R10	[1]	0 <= x % < 2.5

**Information on ingredients :**

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

**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.

If there is any redness, pain or visual impairment, consult an ophthalmologist.

**In the event of swallowing :**

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

Keep the person exposed at rest. Do not force vomiting.

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.

**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**

Flammable.

Chemical powders, carbon dioxide and other extinguishing gas are suitable for small fires.

**5.1. Extinguishing media**

Keep packages near the fire cool, to prevent pressurised containers from bursting.

**Suitable methods of extinction**

In the event of a fire, use :

- sprayed water or water mist
- water with AFFF (Aqueous Film Forming Foam) additive

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- halon
- foam
- multipurpose ABC powder
- BC powder
- carbon dioxide (CO<sub>2</sub>)

Prevent the effluent of fire-fighting measures from entering drains or waterways.

**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 (CO<sub>2</sub>)

**5.3. Advice for firefighters**

Fire-fighting personnel are to be equipped with autonomous insulating breathing apparatus.

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**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**

Because of the organic solvents contained in the mixture, eliminate sources of ignition and ventilate the area.

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.

If the product contaminates waterways, rivers or drains, alert the relevant authorities in accordance with statutory procedures

Use drums to dispose of collected waste in compliance with current regulations (see section 13).

**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.

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**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.

Remove contaminated clothing and protective equipment before entering eating areas.

**Fire prevention :**

Handle in well-ventilated areas.

Vapours are heavier than air. They can spread along the ground and form mixtures that are explosive with air.

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Prevent the formation of flammable or explosive concentrations in air and avoid vapor concentrations higher than the occupational exposure limits.

Do not spray on a naked flame or any incandescent material.

Do not pierce or burn, even after use.

Use the mixture in premises free of naked flames or other sources of ignition and ensure that electrical equipment is suitably protected.

Keep packages tightly closed and away from sources of heat, sparks and naked flames.

Do not use tools which may produce sparks. Do not smoke.

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.

Do not breathe in aerosols.

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.

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.

Never open the packages under pressure.

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

No data available.

### Storage

Keep out of reach of children.

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

Keep away from all sources of ignition - do not smoke.

Keep well away from all sources of ignition, heat and direct sunlight.

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.

Pressurised container: protect from sunlight and do not expose to temperatures exceeding 50°C.

### 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 :
67-64-1	1210	500	-	-	-
1330-20-7	221	50	442	100	Peau

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

CAS	TWA :	STEL :	Ceiling :	Definition :	Criteria :
106-97-8	1000 ppm	-	-	-	-
74-98-6	1000 ppm	-	-	-	-
67-64-1	500 ppm	750 ppm	-	-	-
1330-20-7	100 ppm	150 ppm	-	-	-
71-36-3	20 ppm	-	-	-	-

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108-03-2	25 ppm	-	-	-	-	
79-24-3	100 ppm	-	-	-	-	
- Germany - AGW (BAuA - TRGS 900, 21/06/2010) :						
CAS	VME :	VME :	Excess	Notes		
106-97-8	1000 ml/m3	2400 mg/m3	4(II)	DFG		
74-98-6	1000 ml/m3	1800 mg/m3	4(II)	DFG		
67-64-1	500 ml/m3	1200 mg/m3	2(I)	DFG		
1330-20-7	100 ml/m3	440 mg/m3	2(II)	DFG, H		
71-36-3	100 ml/m3	310 mg/m3	1(I)	DFG, Y		
108-03-2	25 ml/m3	92 mg/m3	4(I)	DFG, H, 3		
79-24-3	100 ml/m3	310 mg/m3	4(II)	DFG		
- France (INRS - ED984 :2008) :						
CAS	VME-ppm :	VME-mg/m3 :	VLE-ppm :	VLE-mg/m3 :	Notes :	TMP No :
106-97-8	800	1900	-	-	-	-
67-64-1	500	1210	1000	2420	-	84
1330-20-7	50	221	100	442	*	4 Bis, 84, *
71-36-3	-	-	50	150	-	84
108-03-2	25	90	-	-	-	84
79-24-3	100	310	-	-	-	84
- UK / WEL (Workplace exposure limits, EH40/2005, 2007) :						
CAS	TWA :	STEL :	Ceiling :	Definition :	Criteria :	
106-97-8	600 ppm	750 ppm	-	-	-	
67-64-1	500 ppm	1500 ppm	-	-	-	
1330-20-7	50 ppm	100 ppm	-	-	-	
71-36-3	-	50 ppm	-	-	-	

## 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 :

- Nitrile rubber (butadiene-acrylonitrile copolymer rubber (NBR))

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Recommended properties :

- Impervious gloves in accordance with standard EN374

### - Body protection

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.

Type of FFP mask :

Wear a disposable half-mask aerosol filter in accordance with standard EN149.

Category :

- FFP1

Anti-gas and vapour filter(s) (Combined filters) in accordance with standard EN14387 :

- A1 (Brown)

Particle filter according to standard EN143 :

- P1 (White)

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## SECTION 9 : PHYSICAL AND CHEMICAL PROPERTIES

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

#### General information :

Physical state :

Viscous liquid.

Spray.

#### Important health, safety and environmental information

pH :

Not relevant.

Boiling point/boiling range :

Not relevant.

Vapour pressure (50°C) :

Not relevant.

Density :

> 1

Water solubility :

Insoluble.

Viscosity:

$\nu < 7 \text{ mm}^2/\text{s}$  (40°C)

Melting point/melting range :

Not relevant.

Self-ignition temperature :

Not relevant.

Decomposition point/decomposition range :

Not relevant.

Chemical combustion heat :

Not specified.

Inflammation time :

Not specified.

Deflagration density :

Not specified.

Inflammation distance :

Not specified.

Flame height :

Not specified.

Flame duration :

Not specified.

### 9.2. Other information

No data available.

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## 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.

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### 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

Any apparatus likely to produce a flame or to have a metallic surface at high temperature (burners, electric arcs, furnaces etc.) must not be allowed on the premises.

Avoid :

- heating
- heat

### 10.5. Incompatible materials

### 10.6. Hazardous decomposition products

The thermal decomposition may release/form :

- carbon monoxide (CO)
- carbon dioxide (CO<sub>2</sub>)

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## SECTION 11 : TOXICOLOGICAL INFORMATION

### 11.1. Information on toxicological effects

May have reversible effects on the eyes, such as eye irritation which is totally reversible by the end of observation at 21 days.

Splashes in the eyes may cause irritation and reversible damage

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.

#### 11.1.1. Substances

##### Acute toxicity :

HYDROCARBONS, C6, ISOALKANES, <5% N-HEXANE (CAS: 64742-49-0)

Oral route : LD50 > 36750 mg/kg  
Species : Rat

Dermal route : LD50 > 3350 ml/kg  
Species : Rabbit

Inhalation route : LC50 = 259354 mg/l  
Species : Rat

#### 11.1.2. Mixture

No toxicological data available for the mixture.

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

CAS 1330-20-7 : IARC Group 3 : The agent is not classifiable as to its carcinogenicity to humans.

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## SECTION 12 : ECOLOGICAL INFORMATION

Harmful to aquatic life with long lasting effects.

The product must not be allowed to run into drains or waterways.

### 12.1. Toxicity

#### 12.1.2. Mixtures

No aquatic toxicity data available for the mixture.

### 12.2. Persistence and degradability

No data available.

### 12.3. Bioaccumulative potential

No data available.

### 12.4. Mobility in soil



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No data available.

### 12.5. Results of PBT and vPvB assessment

No data available.

### 12.6. Other adverse effects

No data available.

## 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

1950

### 14.2. UN proper shipping name

UN1950=AEROSOLS, flammable

### 14.3. Transport hazard class(es)

- Classification :



2.1

### 14.4. Packing group

-

### 14.5. Environmental hazards

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### 14.6. Special precautions for user

ADR/RID	Class	Code	Pack gr.	Label	Ident.	LQ	Provis.	EQ	Cat.	Tunnel
	2	5F	-	2.1	-	1 L	190 327 344 625	E0	2	D

IMDG	Class	2°Label	Pack gr.	LQ	EMS	Provis.	EQ
	2.1	See SP63	-	SP277	F-D,S-U	63 190 277 327 344 959	E0

IATA	Class	2°Label	Pack gr.	Passager	Passager	Cargo	Cargo	note	EQ
	2.1	-	-	Forbidden	Forbidden	203	150 kg	A1 A145 A167 A 802	E0

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	2.1	-	-	Forbidden	Forbidden	-	-	A1 A145 A167 A 802	E0
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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
- Directive 75/734/CEE modified by directive 2013/10/UE
- 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.

**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 :



Extremely flammable

Risk phrase :

R 52/53

Harmful to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

R 12

Extremely flammable.

R 67

Vapours may cause drowsiness and dizziness.

Safety phrase :

Utiliser et conserver à l'écart de toute source d'ignition et d'étincelles, source de chaleur, appareil électrique en fonctionnement. Ne pas fumer.

S 2

Keep out of the reach of children.

S 46

If swallowed, seek medical advice immediately and show this container or label.

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- S 51 Pressurized container: protect from sunlight and do not expose to temperatures exceeding 50°C.  
S 41 Do not pierce or burn, even after use.  
Do not spray on a naked flame or any incandescent material.  
Use only in well-ventilated areas.  
In case of fire and/or explosion do not breathe fumes.

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

- H220 Extremely flammable gas.  
H225 Highly flammable liquid and vapour.  
H226 Flammable liquid and vapour.  
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.  
H335 May cause respiratory irritation.  
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 10 Flammable.  
R 11 Highly flammable.  
R 12 Extremely flammable.  
R 20/21 Harmful by inhalation and in contact with skin.  
R 20/21/22 Harmful by inhalation, in contact with skin and if swallowed.  
R 20/22 Harmful by inhalation and if swallowed.  
R 22 Harmful if swallowed.  
R 36 Irritating to eyes.  
R 37 Irritating to respiratory system.  
R 37/38 Irritating to respiratory system 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 :**

- 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 : Wassergefährdungsklasse (Water Hazard Class).  
GHS02 : Flame  
GHS07 : Exclamation mark