SAFETY DATA SHEET

(REACH regulation (EC) n° 1907/2006 - n° 2015/830)

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

1.1. Product identifier

Product name : UNIVERSAL DEGREASER

Product code : 093533.

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

Removes dirt, grease and oil. Only use the product as directed on the aerosol.

1.3. Details of the supplier of the safety data sheet

Registered company name : Volcke Aerosol Company NV.

Address : Industrielaan 15. B-8520. Kuurne. Belgium.

Telephone : +32 (0) 56 35 17 23. Fax : +32 (0) 56 35 30 69.

info@volcke-aerosol-connection.com

http://www.volcke-aerosol-connection.com

1.4. Emergency telephone number : +32 (0) 56 35 17 23.

Association/Organisation : http://www.volcke-aerosol-connection.com.

Hours of operation : Monday - Thursday : 8:00-17:00; Friday : 8:00-13:00

SECTION 2 : HAZARDS IDENTIFICATION

2.1. Classification of the substance or mixture

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

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

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

Hazardous to the aquatic environment - Chronic hazard, Category 2 (Aquatic Chronic 2, H411).

2.2. Label elements

Detergent mixture (see section 15).

Mixture for aerosol application.

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

Hazard pictograms :



GHS09



GHS07



GHS02

Signal Word :

DANGER

Product identifiers :

EC 203-692-4 PENTANE

Hazard statements :

H222	Extremely flammable aerosol.
H229	Pressurised container: May burst if heated.
H336	May cause drowsiness or dizziness.
H411	Toxic to aquatic life with long lasting effects.

Precautionary statements - General :

P101	If medical advice is needed, have product container or label at hand.
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.
P261	Avoid breathing spray.
P271	Use only outdoors or in a well-ventilated area.

Precautionary statements - Storage :

P403	Store in a well-ventilated place.
P405	Store locked up.
P410 + P412	Protect from sunlight. Do not expose to temperatures exceeding 50 °C.

Precautionary statements - Disposal :

P501	Dispose of container to an approved waste disposal plant.

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

Intentional misuse of the preparation by concentrating and inhaling the vapours can be harmful or fatal.

SECTION 3 : COMPOSITION/INFORMATION ON INGREDIENTS

3.2. Mixtures

Composition :

Identification	(EC) 1272/2008	Note	%
CAS: 109-66-0 EC: 203-692-4 REACH: 01-2119459286-30 PENTANE	GHS09, GHS07, GHS08, GHS02 Dgr Flam. Liq. 1, H224 Asp. Tox. 1, H304 STOT SE 3, H336 Aquatic Chronic 2, H411 EUH:066	[1]	25 <= x % < 50
CAS: 109-87-5 EC: 203-714-2 REACH: 01-2119664781-31 METHYLAL	GHS02 Dgr Flam. Liq. 2, H225	[1]	25 <= x % < 50
CAS: 106-97-8 EC: 203-448-7 REACH: 01-2119474691-32 BUTANE (< 0,1 % 1,3-BUTADIENE)	GHS02 Dgr Flam. Gas 1, H220 Press. Gas, H280	C [1] [7]	2.5 <= x % < 10
CAS: 74-98-6 EC: 200-827-9 REACH: 01-2119486944-21 PROPANE	GHS02 Dgr Flam. Gas 1, H220 Press. Gas, H280	[1] [7]	2.5 <= x % < 10
CAS: 287-92-3 EC: 206-016-6 REACH: 01-2119463053-47 CYCLOPENTANE	GHS02 Dgr Flam. Liq. 2, H225 Aquatic Chronic 3, H412	[1]	2.5 <= x % < 10
CAS: 124-38-9 EC: 204-696-9 CARBON DIOXIDE	GHS04 Wng Press. Gas, H281	[1] [7]	2.5 <= x % < 10

(Full text of H-phrases: see section 16)

Information on ingredients :

[7] Propellant gas

[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 fresh, clean water for 15 minutes holding the eyelids open.

In the event of splashes or contact with skin :

Flush contaminated skin with plenty of water. Remove contaminated clothing and shoes. Get medical attention if symptoms occur.

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

See section 11.

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

If you feel unwell, seek medical advice (show the label if possible). If symptoms persist, always call a doctor.

SECTION 5 : FIREFIGHTING MEASURES

Flammable.

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

5.1. Extinguishing media

If the aerosols are exposed to a fire : keep containers cool by spraying with water from a protected position.

Suitable methods of extinction

In the event of a fire, use :

- sprayed water or water mist
- water with AFFF (Aqueous Film Forming Foam) additive
- foam
- multipurpose ABC powder
- BC powder
- carbon dioxide (CO_2)

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_2)

In a fire or if heated, a pressure increase will occur and the container may burst. Bursting aerosol containers may be propelled from a fire at high speed. Promptly isolate the scene by removing all persons from the vicinity of the incident if there is a fire. No action shall be taken involving any personal risk or without suitable training.

Move containers from fire area if this can be done without risk. Use water spray to keep fire-exposed containers cool.

5.3. Advice for firefighters

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

If possible, stop the product stream. Spray from a protected position till the containers are cool. If possible, take the aerosols outside. Keep public at a distance.

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.

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.

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.

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.

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.

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 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.

Storage in a dry, frost-free and well ventilated place.

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 (2017/2398, 2017/164, 2009/161, 2006/15/CE, 2000/39/CE, 98/24/CE) :

CAS	VME-mg/m3 :	VME-ppm :	VLE-mg/m3 :	VLE-ppm :	Notes :
109-66-0	3000	1000	-	-	-
124-38-9	9000	5000	-	-	-

- UK / WEL (Workplace exposure limits, EH40/2005, 2011) :

CAS	TWA :	STEL :	Ceiling :	Definition :	Criteria :
109-66-0	600 ppm 1800 mg/m³	- ppm - mg/m³			
109-87-5	1000 ppm 3160 mg/m³	1250 ppm 3950 mg/m³			
106-97-8	600 ppm 1450 mg/m3	750 ppm 1810 mg/m3		Carc	
124-38-9	5000 ppm 9150 mg/m³	15000 ppm 27400 mg/m³			

- Ireland (Code of practice for the Chemical Agents Regulations, 2016) :

CAS	TWA :	STEL :	Ceiling :	Definition :	Criteria :
109-66-0	1000 ppm 3000 mg/m³				
109-87-5	1000 ppm 3100 mg/m3	1250 ppm 3880 mg/m3			
106-97-8	1000 ppm				
74-98-6	1000 ppm				
287-92-3	600 ppm 1720 mg/m³				
124-38-9	5000 ppm 9000 mg/m³	15000 ppm 27000 mg/m³			

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

CYCLOPENTANE (CAS: 287-92-3)

Final use:	**Workers.**
Exposure method:	Dermal contact.
Potential health effects:	Long term systemic effects.
DNEL :	432 mg/kg body weight/day
Exposure method:	Inhalation.
Potential health effects:	Long term systemic effects.
DNEL :	3000 mg of substance/m3

Final use:	**Consumers.**
Exposure method:	Ingestion.
Potential health effects:	Long term systemic effects.
DNEL :	214 mg/kg body weight/day
Exposure method:	Dermal contact.
Potential health effects:	Long term systemic effects.
DNEL :	214 mg/kg body weight/day
Exposure method:	Inhalation.
Potential health effects:	Long term systemic effects.
DNEL :	643 mg of substance/m3

METHYLAL (CAS: 109-87-5)

Final use: **Workers.**
Exposure method: Dermal contact.
Potential health effects: Long term systemic effects.
DNEL : 17.9 mg/kg body weight/day

Exposure method: Inhalation.
Potential health effects: Long term systemic effects.
DNEL : 126.6 mg of substance/m3

Final use: **Consumers.**
Exposure method: Ingestion.
Potential health effects: Long term systemic effects.
DNEL : 18.1 mg/kg body weight/day

Exposure method: Dermal contact.
Potential health effects: Long term systemic effects.
DNEL : 18.1 mg/kg body weight/day

Exposure method: Inhalation.
Potential health effects: Long term systemic effects.
DNEL : 31.5 mg of substance/m3

PENTANE (CAS: 109-66-0)
Final use: **Workers.**
Exposure method: Dermal contact.
Potential health effects: Long term systemic effects.
DNEL : 432 mg/kg body weight/day

Exposure method: Inhalation.
Potential health effects: Long term systemic effects.
DNEL : 3000 mg of substance/m3

Final use: **Consumers.**
Exposure method: Ingestion.
Potential health effects: Long term systemic effects.
DNEL : 214 mg/kg body weight/day

Exposure method: Dermal contact.
Potential health effects: Long term systemic effects.
DNEL : 214 mg/kg body weight/day

Exposure method: Inhalation.
Potential health effects: Long term systemic effects.
DNEL : 643 mg of substance/m3

Predicted no effect concentration (PNEC):

METHYLAL (CAS: 109-87-5)
Environmental compartment: Soil.
PNEC : 4.6538 mg/kg

Environmental compartment: Fresh water.
PNEC : 14.577 mg/l

Environmental compartment: Sea water.
PNEC : 1.477 mg/l

Environmental compartment: Fresh water sediment.
PNEC : 13.135 mg/kg

Environmental compartment:	Marine sediment.
PNEC :	1.313 mg/kg
Environmental compartment:	Waste water treatment plant.
PNEC :	10 g/l

PENTANE (CAS: 109-66-0)

Environmental compartment:	Soil.
PNEC :	0.55 mg/kg
Environmental compartment:	Fresh water.
PNEC :	0.23 mg/l
Environmental compartment:	Sea water.
PNEC :	0.23 mg/l
Environmental compartment:	Intermittent waste water.
PNEC :	0.88 mg/l
Environmental compartment:	Fresh water sediment.
PNEC :	1.2 mg/kg
Environmental compartment:	Marine sediment.
PNEC :	1.2 mg/kg
Environmental compartment:	Waste water treatment plant.
PNEC :	3.6 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 in accordance with standard EN166.

Do not spray in the direction of the eyes.

- 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))
- PVA (Polyvinyl alcohol)

Recommended properties :

- Impervious gloves in accordance with standard EN374

Not necessary at efficient use. Wash your hands after contact with skin.

- Body protection

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.

Not necessary at efficient use. Wash skin that has been in contact with the product, with water and soap.

- 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)
- AX (Brown)

Particle filter according to standard EN143 :

- P1 (White)

Do not breathe spray. Use only in well-ventilated areas.

Exposure controls linked to environmental protection

Emissions from ventilation or work process equipment should be checked to ensure they comply with the requirements of environmental protection legislation. In some cases, fume scrubbers, filters or engineering modifications to the process equipment will be necessary to reduce emissions to acceptable levels.

SECTION 9 : PHYSICAL AND CHEMICAL PROPERTIES

9.1. Information on basic physical and chemical properties

General information :

Physical state :	Fluid liquid.
	Spray.
Color :	Colourless, clear
Odour :	Specific

Important health, safety and environmental information

pH :	Not relevant.
Vapour pressure (50°C) :	Not relevant.
Density :	0.685
Water solubility :	Insoluble.
Chemical combustion heat :	>= 30 kJ/g.
Flash point :	< 0 °C
Flammability :	Extremely flammable

9.2. Other information

VOC (g/l) :	667.88
Pressure at 20°C :	± 3.0 bar
Pressure at 50°C :	< 10 bar
Water content :	< 0.3 % w/w

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.

Under normal conditions of storage and use, hazardous reactions will not occur.

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 :

- heat
- flames and hot surfaces
- frost

Protect from sunlight and do not expose to temperatures exceeding 50°C. Keep away from heat and sources of ignition. Storage in a dry, frost-free and well ventilated place.

10.5. Incompatible materials

No materials known by which a dangerous reaction can occur.

10.6. Hazardous decomposition products

The thermal decomposition may release/form :

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

The product is stable. Under normal conditions of storage and use, hazardous decomposition products should not be produced.

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.

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 :

PROPANE (CAS: 74-98-6)

Inhalation route (n/a) :	LC50 > 10 mg/l

BUTANE (< 0,1 % 1,3-BUTADIENE) (CAS: 106-97-8)

Inhalation route (n/a) :	LC50 > 10 mg/l

CYCLOPENTANE (CAS: 287-92-3)

Oral route :	LD50 > 5000 mg/kg Species : Rat
Inhalation route (n/a) :	LC50 = 25.3 mg/l Species : Rat Duration of exposure : 4 h

METHYLAL (CAS: 109-87-5)

Oral route :	LD50 = 6453 mg/kg Species : Rat OECD Guideline 423 (Acute Oral toxicityAcute Toxic Class Method)
Dermal route :	LD50 > 5000 mg/kg Species : Rabbit OECD Guideline 402 (Acute Dermal Toxicity)

PENTANE (CAS: 109-66-0)

Oral route :	LD50 > 2000 mg/kg Species : Rat
Inhalation route (n/a) :	LC50 = 5 mg/l Species : Rat

Skin corrosion/skin irritation :

Methylal : Not irritating. Repeated or prolonged skin contact may cause dermatitis and defatting.

Cyclopentane : Repeated exposure may cause skin dryness or cracking.

Pentane : Repeated exposure may cause skin dryness or cracking.

METHYLAL (CAS: 109-87-5)

Species : Rabbit
OECD Guideline 404 (Acute Dermal Irritation / Corrosion)

Irritation : Average score = 4.2
Effect observed : Primary dermal irritation index (PDII)
Species : Rabbit
Duration of exposure : 72 h
OECD Guideline 404 (Acute Dermal Irritation / Corrosion)

Serious damage to eyes/eye irritation :

Methylal : Not irritating.

Cyclopentane : Slight irritation.

Pentane : May cause mild, short-lasting discomfort to eyes.

Respiratory or skin sensitisation :

Methylal : Not sensitizing.

Cyclopentane : Not sensitizing.

Pentane : Not sensitizing.

METHYLAL (CAS: 109-87-5)

Guinea Pig Maximisation Test (GMPT) : Non-sensitiser.
Species : Guinea pig
OECD Guideline 406 (Skin Sensitisation)

Germ cell mutagenicity :

CYCLOPENTANE (CAS: 287-92-3)

Ames test (in vitro) : Negative.
With or without metabolic activation.
Species : S. typhimurium TA1535

PROPANE (CAS: 74-98-6)

No mutagenic effect.

BUTANE (< 0,1 % 1,3-BUTADIENE) (CAS: 106-97-8)

No mutagenic effect.

METHYLAL (CAS: 109-87-5)

No mutagenic effect.

Mutagenesis (in vivo) : Negative.
Species : Mouse
OECD Guideline 474 (Mammalian Erythrocyte Micronucleus Test)

Mutagenesis (in vitro) : Negative.
Species : Mammalian Cell Line
OECD Guideline 473 (In vitro Mammalian Chromosome Aberration Test)

PENTANE (CAS: 109-66-0)

No mutagenic effect.

Carcinogenicity :

PROPANE (CAS: 74-98-6)

Carcinogenicity Test : Negative.
No carcinogenic effect.

BUTANE (< 0,1 % 1,3-BUTADIENE) (CAS: 106-97-8)

Carcinogenicity Test : Negative.
No carcinogenic effect.

METHYLAL (CAS: 109-87-5)
Carcinogenicity Test : Negative.
No carcinogenic effect.

PENTANE (CAS: 109-66-0)
Carcinogenicity Test : Negative.
No carcinogenic effect.

Reproductive toxicant :

PROPANE (CAS: 74-98-6)
No toxic effect for reproduction

BUTANE (< 0,1 % 1,3-BUTADIENE) (CAS: 106-97-8)
No toxic effect for reproduction

METHYLAL (CAS: 109-87-5)
No toxic effect for reproduction

PENTANE (CAS: 109-66-0)
No toxic effect for reproduction

Specific target organ systemic toxicity - single exposure :

Methylal : To human : Not classified for organ toxicity. For animals : No effects known.

Cyclopentane : Not classified as toxic to a target organ.

Pentane : To human : May cause drowsiness or dizziness.

Specific target organ systemic toxicity - repeated exposure :

Methylal : To human : Not classified for organ toxicity. For animals : No effects known.

Cyclopentane : Not classified as toxic to a target organ.

Pentane : To human : Not classified for organ toxicity. For animals : No effects known.

Aspiration hazard :

Cyclopentane : May be fatal if swallowed and enters airways.

Methylal : Not considered hazardous.

Pentane : May be fatal if swallowed and enters airways.

11.1.2. Mixture

No toxicological data available for the mixture.

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

CYCLOPENTANE (CAS: 287-92-3)
Fish toxicity : LC50 = 29.3 mg/l
Duration of exposure : 96 h

Crustacean toxicity : EC50 = 51.1 mg/l
Species : Daphnia magna
Duration of exposure : 48 h

Algae toxicity : ECr50 = 21.6 mg/l
Duration of exposure : 72 h

CARBON DIOXIDE (CAS: 124-38-9)
Fish toxicity : LC50 = 35 mg/l

Species : Oncorhynchus mykiss

METHYLAL (CAS: 109-87-5)

Fish toxicity :	LC50 > 1000 mg/l Species : Danio rerio Duration of exposure : 96 h OECD Guideline 203 (Fish, Acute Toxicity Test)
Crustacean toxicity :	EC50 > 1000 mg/l Species : Daphnia magna Duration of exposure : 48 h OECD Guideline 202 (Daphnia sp. Acute Immobilisation Test)

12.1.2. Mixtures

No aquatic toxicity data available for the mixture.

12.2. Persistence and degradability

Butane/Isobutane/Propane : Expected to be readily biodegradable.

12.2.1. Substances

CARBON DIOXIDE (CAS: 124-38-9)

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

CYCLOPENTANE (CAS: 287-92-3)

Biodegradability :	Non-rapidly degradable.

PROPANE (CAS: 74-98-6)

Biodegradability :	Rapidly degradable.

BUTANE (< 0,1 % 1,3-BUTADIENE) (CAS: 106-97-8)

Biodegradability :	Rapidly degradable.

METHYLAL (CAS: 109-87-5)

Biodegradability :	Non-rapidly degradable.

PENTANE (CAS: 109-66-0)

Biodegradability :	Rapidly degradable.

12.3. Bioaccumulative potential

Butane/Isobutane/Propane : Not expected to be dangerous for the aquatic environment.

Cyclopentane : Bioaccumulation expected.

Methylal : No data available.

Carbon dioxide : Not bioaccumulable.

Pentane : Not determined.

12.4. Mobility in soil

Butane/Isobutane/Propane : If released into the environment, the product will rapidly disperse into the atmosphere where it will undergo photochemical degradation.

Cyclopentane : Not soluble in water.

Methylal : No data available.

Carbon dioxide : No data available.

Pentane : Highly volatile.

12.5. Results of PBT and vPvB assessment

Cyclopentane : PBT/vPvB : No.

Pentane : PBT/vPvB : No.

Methylal : PBT/vPvB : No.

12.6. Other adverse effects

Carbon dioxide : Global warming potential. Not dangerous for the ozone layer.

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.

Codes of wastes (Decision 2014/955/EC, Directive 2008/98/EEC on hazardous waste) :

15 01 10 * packaging containing residues of or contaminated by dangerous substances

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 2017 - IMDG 2016 - ICAO/IATA 2017).

14.1. UN number

1950

14.2. UN proper shipping name

UN1950=AEROSOLS, flammable

14.3. Transport hazard class(es)

- Classification :

2.1

ADR/RID Label : Limited Quantity : 2.1 is not applicable.

14.4. Packing group

-

14.5. Environmental hazards

- Environmentally hazardous material :



The symbol above is not applicable for "Limited Quantity".

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	See SP63	-	See SP277	F-D,S-U	63 190 277 327 344 381 959	E0

IATA	Class	2°Label	Pack gr.	Passager	Passager	Cargo	Cargo	note	EQ
	2.1	-	-	203	75 kg	203	150 kg	A145 A167 A802	E0
	2.1	-	-	Y203	30 kg G	-	-	A145 A167 A802	E0

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 Marpol 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 75/324/CEE modified by directive 2013/10/UE
- EU Regulation No. 1272/2008 amended by EU Regulation No. 2017/776 (ATP 10)

- Container information:

No data available.

- Particular provisions :

No data available.

- Labelling for detergents (EC Regulation No. 648/2004,907/2006) :

- 30 % and more : aliphatic hydrocarbons

15.2. Chemical safety assessment

A chemical safety assessment has been carried out for the following products or for the substances in these products :

Methylal

Cyclopentane

Pentane

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.

Wording of the phrases mentioned in section 3 :

H220	Extremely flammable gas.
H224	Extremely flammable liquid and vapour.
H225	Highly flammable liquid and vapour.
H280	Contains gas under pressure; may explode if heated.
H281	Contains refrigerated gas; may cause cryogenic burns or injury.
H304	May be fatal if swallowed and enters airways.
H336	May cause drowsiness or dizziness.
H411	Toxic to aquatic life with long lasting effects.
H412	Harmful to aquatic life with long lasting effects.
EUH066	Repeated exposure may cause skin dryness or cracking.

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).

GHS02 : Flame

GHS07 : Exclamation mark

GHS09 : Environment

PBT: Persistent, bioaccumulable and toxic.

vPvB : Very persistent, very bioaccumulable.

SVHC : Substances of very high concern.

Difference Report

Revision: N°4 (18/06/2018) / GHS n°1 / GHS US n°) / Version: N°1 (18/06/2018)

~~Revision: N°3 (30/06/2016) / Version: N°1 (30/06/2016)~~

SECTION 8 : EXPOSURE CONTROLS/PERSONAL PROTECTION

- Respiratory protection

- A1 (Brown)

SECTION 9 : PHYSICAL AND CHEMICAL PROPERTIES

Method of determining the refractive index :

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 2015 - IMDG 2014 - ICAO/IATA 2016).~~

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~~

Transport product in compliance with provisions of the ADR for road, RID for rail, IMDG for sea and ICAO/IATA for air transport (ADR 2017 - IMDG 2016 - ICAO/IATA 2017).

	2	See SP63	-	See SP277	F-D,S-U	63 190 277 327 344 381 959	E0

SECTION 15 : REGULATORY INFORMATION

- Classification and labelling information included in section 2:

~~- 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.~~
~~- EU Regulation No. 1272/2008 amended by EU Regulation No. 1297/2014.~~

- EU Regulation No. 1272/2008 amended by EU Regulation No. 2017/776 (ATP 10)