

ENGLISH EDITION

EXORE®

Material Safety Data Sheets

Component A

RETHINK THE CORE OF CARBON-FIBRE PRODUCTION

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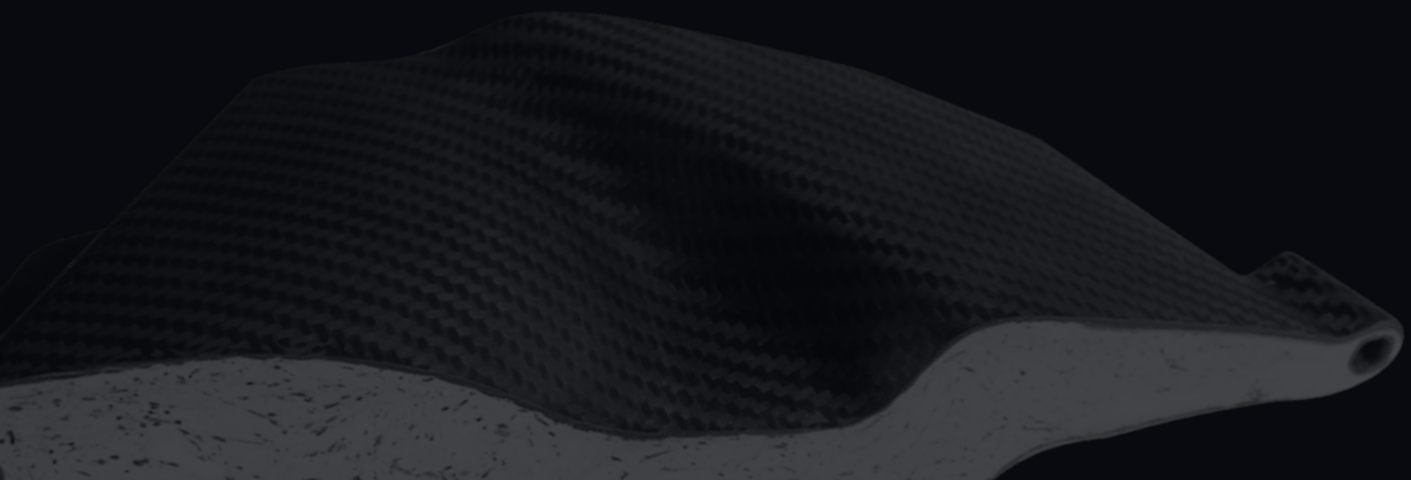
Rethink the core of carbon-fibre production

We are EX-CORE®

Ex-Core, originating in the world of high-performance sportscars, emerged from a 2011 research project by Dutch supercar manufacturer Donkervoort and has since become an independent company.

Born out of dissatisfaction with available carbon-fibre options, Ex-Core embodies an obsession with ultra-lightweight yet exceptionally strong materials, designed to be molded into seemingly impossible shapes while remaining cost-effective. Not only does it minimize waste and energy consumption compared to conventional processes, but it has also secured multiple patents and EU grants.

In 2022, Ex-Core became its own entity, and clients spanning motorsport, supercars, aviation, and luxury yachting have embraced the innovative carbon-fibre production method.



Why choose EX-CORE®?



1 One-shot efficiency

Ex-Core stands out for its groundbreaking, one-shot production method, reducing production time, increasing accuracy, and minimizing wastage.



2 Cost reductions

The Ex-Core process cuts costs for clients and the environment, eliminating consumables, reducing material trimming, and using sustainable energy, making it financially and environmentally sustainable.



3 Simplify complexity

Ex-Core creates a wide range of shapes with precision, handling sharp radii, intricate forms, and complex organic shapes in a single manufacturing cycle without compromising strength or tolerances.



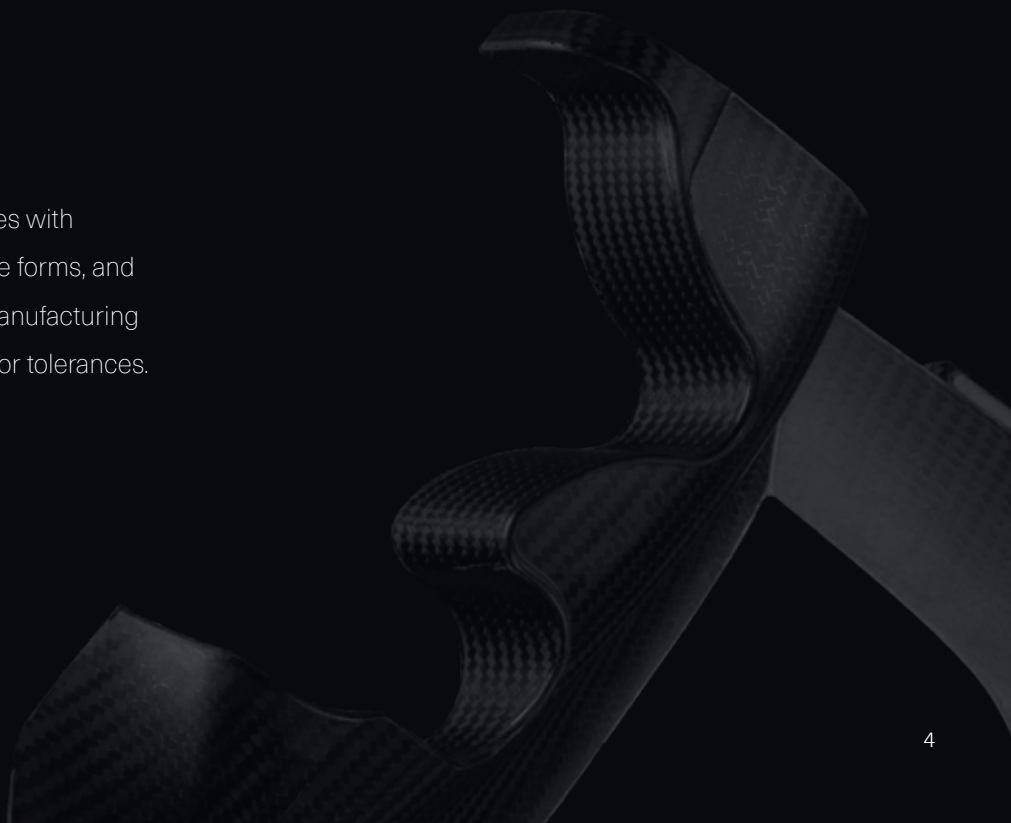
4 Light strength

Ex-Core provides both lightweight and robust components, achieving higher bending and torsional rigidity without adding weight, with customizable strength and weight characteristics.



5 Production flexibility

The Ex-Core method adapts to various production numbers and in-batch flexibility, from small batch runs to high volumes, maintaining quality and efficiency, offering versatile manufacturing capabilities.



Your safety matters

Safety is at the core of everything we do. We're committed to providing you with the knowledge and resources needed to handle Ex-Core materials responsibly. Your safety is our top priority, and we are here to support you every step of the way.

Key sections of this document

Ex-Core comprises two essential components: Component A, referred to as the Blowing Agent, and Component B, known as the Binding Agent. This document contains the Material Safety Data Sheet for:

COMPONENT A

Ex-Core Blowing Agent

Component A, known as the Blowing Agent, is a mixture of components designed to enable Ex-Core to precisely generate the required pressure at the optimal juncture during the curing process.

Both documents will provide you with the essential information required to evaluate or work with our materials safely and effectively.

Get in touch

For any questions, further information, or collaboration inquiries, please don't hesitate to reach out to our dedicated team. We're here to assist you.

Together, we'll shape the future of carbon-fibre engineering.

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Material Safety Data Sheet

Component A

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

1.1 Product identifier

Trade name

EX Component A

Registration number (REACH)

not relevant (mixture)

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

Relevant identified uses

Professional uses

1.3 Details of the supplier of the safety data sheet

Donkervoort Automobielen B.V.
 Pascallaan 96
 8218 NJ Lelystad
 Netherlands

Telephone: +31 320 267 050

Telefax: +31 320 267 051

e-mail: ex-core@donkervoort.com

Website: <https://www.excoretechnologies.com/>

e-mail (competent person)

ex-core@donkervoort.com

1.4 Emergency telephone number

Emergency information service

+31 320 267 050

This number is only available during the following office hours: Mon-Fri 08:00 - 17:30

Poison centre		
Country	Name	Telephone
United Kingdom	National Poisons Information Service (NPIS) (medical professionals only)	0344-8920111
United Kingdom	NHS (general public)	non-emergency: 111 or a doctor; emergency: 999

SECTION 2: Hazards identification

2.1 Classification of the substance or mixture

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

Section	Hazard class	Category	Hazard class and category	Hazard statement
2.7	flammable solid	1	Flam. Sol. 1	H228
4.1C	hazardous to the aquatic environment - chronic hazard	3	Aquatic Chronic 3	H412

Code	Supplemental hazard information
EUH066	repeated exposure may cause skin dryness or cracking

For full text of abbreviations: see SECTION 16.

The most important adverse physicochemical, human health and environmental effects

Spillage and fire water can cause pollution of watercourses.

2.2 Label elements

Labelling according to Regulation (EC) No 1272/2008 (CLP)

- signal word

Danger

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- pictograms

GHS02



- hazard statements

H228

Flammable solid.

H412

Harmful to aquatic life with long lasting effects.

- precautionary statements

P210

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

P240

Ground and bond container and receiving equipment.

P241

Use explosion-proof electrical/ventilating/lighting equipment.

P273

Avoid release to the environment.

P280

Wear protective gloves/protective clothing/eye protection/face protection.

P501

Dispose of contents/container in accordance with local/regional/national/international regulations.

- supplemental hazard information

EUH066 Repeated exposure may cause skin dryness or cracking.

2.3 Other hazards

Of no significance.

Results of PBT and vPvB assessment

This mixture does not contain any substances that are assessed to be a PBT or a vPvB.

SECTION 3: Composition/information on ingredients

3.1 Substances

Not relevant (mixture)

3.2 Mixtures

The product does not contain any other ingredients which are classified according to present knowledge of the supplier and contribute to the classification of the product and hence require reporting in this section.

Name of substance	Identifier	Wt%	Classification acc. to GHS	Pictograms	Notes
isopentane	CAS No 78-78-4 EC No 201-142-8 Index No 601-085-00-2 REACH Reg. No 01-2119475602-38-xxxx	10 – < 25	Flam. Liq. 1 / H224 STOT SE 3 / H336 Asp. Tox. 1 / H304 Aquatic Chronic 2 / H411 EUH066	 	GHS-HC IOELV
Isobutane	CAS No 75-28-5 EC No 200-857-2 Index No 601-004-00-0 REACH Reg. No 01-2119485395-27-xxxx	1 – < 5	Flam. Gas 1A / H220 Press. Gas C / H280	 	C(a) GHS-HC U(b)

Notes

C(a): Mixture of isomers

GHS-HC: Harmonised classification (the classification of the substance corresponds to the entry in the list according to 1272/2008/EC, Annex VI)

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Notes

IOELV: Substance with a community indicative occupational exposure limit value

U(b): The allocation to the group 'compressed gas' is based on the physical state in which the gas is packaged

Remarks

For full text of H-phrases: see SECTION 16. All the percentages given are percentages by weight unless stated otherwise.

SECTION 4: First aid measures

4.1 Description of first aid measures

General notes

Do not leave affected person unattended. Remove victim out of the danger area. In case of unconsciousness place person in the recovery position. Never give anything by mouth. Take off immediately all contaminated clothing. In all cases of doubt, or when symptoms persist, seek medical advice.

Following inhalation

Provide fresh air. If breathing is irregular or stopped, immediately seek medical assistance and start first aid actions. In case of respiratory tract irritation, consult a physician.

Following skin contact

Brush off loose particles from skin. Wash with plenty of soap and water. If skin irritation or rash occurs: Get medical advice/attention.

Following eye contact

Do not rub the eyes. Mechanical stress can cause damage to the cornea. Irrigate copiously with clean, fresh water for at least 15 minutes, holding the eyelids apart. Remove contact lenses, if present and easy to do. Continue rinsing. If eye irritation persists: Get medical advice/attention.

Following ingestion

Rinse mouth with water (only if the person is conscious). Call a POISON CENTER or doctor if you feel unwell.

4.2 Most important symptoms and effects, both acute and delayed

Symptoms and effects are not known to date.

4.3 Indication of any immediate medical attention and special treatment needed

For specialist advice physicians should contact the poison centre.

SECTION 5: Firefighting measures

5.1 Extinguishing media

Suitable extinguishing media

Water; Foam; Dry extinguishing powder; ABC-powder;
Co-ordinate firefighting measures to the fire surroundings.

Unsuitable extinguishing media

Water jet.

5.2 Special hazards arising from the substance or mixture

Hazardous combustion products

During fire hazardous fumes/smoke could be produced.

5.3 Advice for firefighters

In case of fire and/or explosion do not breathe fumes. Co-ordinate firefighting measures to the fire surroundings. Do not allow firefighting water to enter drains or water courses. Collect contaminated firefighting water separately. Fight fire with normal precautions from a reasonable distance.

Special protective equipment for firefighters

Self-contained breathing apparatus (EN 133). Standard protective clothing for firefighters.

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SECTION 6: Accidental release measures**6.1 Personal precautions, protective equipment and emergency procedures**

For non-emergency personnel

Remove persons to safety. Ventilate affected area.

For emergency responders

Wear breathing apparatus if exposed to vapours/dust/spray/gases. Use personal protective equipment as required.

6.2 Environmental precautions

Keep away from drains, surface and ground water. Retain contaminated washing water and dispose of it. If substance has entered a water course or sewer, inform the responsible authority.

6.3 Methods and material for containment and cleaning up

Advice on how to contain a spill

Covering of drains. Take up mechanically.

Advice on how to clean up a spill

Take up mechanically.

Other information relating to spills and releases

Place in appropriate containers for disposal. Ventilate affected area.

6.4 Reference to other sections

Hazardous combustion products: see section 5. Personal protective equipment: see section 8. Incompatible materials: see section 10. Disposal considerations: see section 13.

SECTION 7: Handling and storage**7.1 Precautions for safe handling**

Recommendations

- measures to prevent fire as well as aerosol and dust generation

Use local and general ventilation. Use only in well-ventilated areas. Ground/bond container and receiving equipment.

Advice on general occupational hygiene

Wash hands after use. Do not eat, drink and smoke in work areas. Remove contaminated clothing and protective equipment before entering eating areas. Never keep food or drink in the vicinity of chemicals. Never place chemicals in containers that are normally used for food or drink. Keep away from food, drink and animal feedingstuffs.

7.2 Conditions for safe storage, including any incompatibilities

Managing of associated risks

- flammability hazards

Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. Take precautionary measures against static discharge.

- incompatible substances or mixtures

Keep away from alkalis, oxidising substances, acids.

Control of effects

Protect against external exposure, such as

High temperatures. UV-radiation/sunlight.

Consideration of other advice

Store in a well-ventilated place. Keep container tightly closed.

- packaging compatibilities

Only packagings which are approved (e.g. acc. to ADR) may be used.

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7.3 Specific end use(s)

There is no additional information.

SECTION 8: Exposure controls/personal protection

8.1 Control parameters

National limit values

Occupational exposure limit values (Workplace Exposure Limits)									
Cou ntry	Name of agent	CAS No	Identi- fier	TWA [ppm]	TWA [mg/m³]	STEL [ppm]	STEL [mg/m³]	Nota- tion	Source
EU	isopentane	78-78-4	IOELV	1,000	3,000				2006/15/EC
GB	isopentane	78-78-4	WEL	600	1,800				EH40/2005

Notation

STEL short-term exposure limit: a limit value above which exposure should not occur and which is related to a 15-minute period (unless otherwise specified)

TWA time-weighted average (long-term exposure limit): measured or calculated in relation to a reference period of 8 hours time-weighted average (unless otherwise specified)

Relevant DNELs/DMELs/PNECs and other threshold levels

Relevant DNELs of components of the mixture						
Name of sub- stance	CAS No	End- point	Threshold level	Protection goal, route of expos- ure	Used in	Exposure time
isopentane	78-78-4	DNEL	3,000 mg/ m³	human, inhalatory	worker (industry)	chronic - systemic effects
isopentane	78-78-4	DNEL	432 mg/kg bw/day	human, dermal	worker (industry)	chronic - systemic effects
isopentane	78-78-4	DNEL	643 mg/m³	human, inhalatory	consumer (private households)	chronic - systemic effects
isopentane	78-78-4	DNEL	214 mg/kg bw/day	human, dermal	consumer (private households)	chronic - systemic effects
isopentane	78-78-4	DNEL	214 mg/kg bw/day	human, oral	consumer (private households)	chronic - systemic effects

8.2 Exposure controls

Appropriate engineering controls

General ventilation.

Individual protection measures (personal protective equipment)

Eye/face protection



Use safety goggle with side protection (EN 166).

Skin protection

Protective clothing (EN 340 & EN ISO 13688).

- hand protection



Wear suitable gloves. Chemical protection gloves are suitable, which are tested according to EN 374. The selection of the suitable gloves does not only depend on the material, but also on further marks of quality and varies from manufacturer to manufacturer. As the product is a preparation of several substances, the resistance of the glove material can not be calculated in advance and has therefore to be checked prior to the application.

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- type of material

Nitrile rubber

- material thicknessUse gloves with a minimum material thickness: $\geq 0,4$ mm.**- breakthrough times of the glove material**

Use gloves with a minimum breakthrough times of the glove material: >480 minutes (permeation: level 6).

- other protection measures

Take recovery periods for skin regeneration. Preventive skin protection (barrier creams/ointments) is recommended. Wash hands thoroughly after handling. Provide eyewash stations and safety showers at the workplace.

Respiratory protection

In case of inadequate ventilation wear respiratory protection. Type: AX (gas filters and combined filters against low-boiling point organic compounds, colour code: Brown).

Environmental exposure controls

Take appropriate precautions to avoid uncontrolled release into the environment. Keep away from drains, surface and ground water.

SECTION 9: Physical and chemical properties**9.1 Information on basic physical and chemical properties**

Physical state	solid (pellets)
Colour	white - black
Odour	characteristic
Melting point/freezing point	not determined
Boiling point or initial boiling point and boiling range	-161.5 °C at 1,013 hPa calculated value, referring to a component of the mixture
Flammability	flammable solid in accordance with GHS criteria
Lower and upper explosion limit	LEL: 1.4 vol% UEL: 15 vol% calculated value, referring to a component of the mixture
Flash point	-88.6 °C at 1,013 hPa calculated value, referring to a component of the mixture
Auto-ignition temperature	not determined
Decomposition temperature	no data available
pH (value)	not applicable
Kinematic viscosity	not relevant
Solubility(ies)	not determined

Partition coefficient n-octanol/water (log value)	this information is not available
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Vapour pressure	not determined
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Density	not determined
Relative vapour density	this information is not available

Particle characteristics	no data available
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9.2 Other information

Information with regard to physical hazard classes	there is no additional information
Other safety characteristics	there is no additional information

SECTION 10: Stability and reactivity**10.1 Reactivity**

The mixture contains reactive substance(s). Risk of ignition.

If heated:

Risk of ignition.

10.2 Chemical stability

The material is stable under normal ambient and anticipated storage and handling conditions of temperature and pressure.

10.3 Possibility of hazardous reactions

No known hazardous reactions.

10.4 Conditions to avoid

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

10.5 Incompatible materials

Oxidisers.

10.6 Hazardous decomposition products

Reasonably anticipated hazardous decomposition products produced as a result of use, storage, spill and heating are not known. Hazardous combustion products: see section 5.

SECTION 11: Toxicological information**11.1 Information on hazard classes as defined in Regulation (EC) No 1272/2008**

Test data are not available for the complete mixture.

Classification procedure

The method for classification of the mixture is based on ingredients of the mixture (additivity formula).

Classification according to GHS (1272/2008/EC, CLP)

Acute toxicity

Shall not be classified as acutely toxic.

- acute toxicity of components of the mixture

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Acute toxicity of components of the mixture					
Name of substance	CAS No	Exposure route	Endpoint	Value	Species
isopentane	78-78-4	oral	LD50	>2,000 mg/kg	rat
isopentane	78-78-4	inhalation: vapour	LC50	>25.3 mg/l/4h	rat

Skin corrosion/irritation

Shall not be classified as corrosive/irritant to skin.

Serious eye damage/eye irritation

Shall not be classified as seriously damaging to the eye or eye irritant.

Respiratory or skin sensitisation

Shall not be classified as a respiratory or skin sensitizer.

Germ cell mutagenicity

Shall not be classified as germ cell mutagenic.

Carcinogenicity

Shall not be classified as carcinogenic.

Reproductive toxicity

Shall not be classified as a reproductive toxicant.

Specific target organ toxicity - single exposure

Shall not be classified as a specific target organ toxicant (single exposure).

Specific target organ toxicity - repeated exposure

Shall not be classified as a specific target organ toxicant (repeated exposure).

Aspiration hazard

Shall not be classified as presenting an aspiration hazard.

11.2 Information on other hazards

There is no additional information.

SECTION 12: Ecological information

12.1 Toxicity

Harmful to aquatic life with long lasting effects.

Aquatic toxicity (acute) of components of the mixture					
Name of substance	CAS No	Endpoint	Value	Species	Exposure time
isopentane	78-78-4	LL50	34.05 mg/l	fish	96 h
isopentane	78-78-4	EL50	59.44 mg/l	aquatic invertebrates	48 h
Isobutane	75-28-5	LC50	49.9 mg/l	fish	96 h
Isobutane	75-28-5	EC50	19.37 mg/l	algae	96 h

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12.2 Persistence and degradability

Degradability of components of the mixture						
Name of substance	CAS No	Process	Degradation rate	Time	Method	Source
isopentane	78-78-4	oxygen depletion	71.43 %	28 d		ECHA

12.3 Bioaccumulative potential

Bioaccumulative potential of components of the mixture				
Name of substance	CAS No	BCF	Log KOW	BOD5/COD
isopentane	78-78-4	171	4 (pH value: 6.6, 25 °C)	
Isobutane	75-28-5		1.09 (pH value: 7, 20 °C)	

12.4 Mobility in soil

Data are not available.

12.5 Results of PBT and vPvB assessment

This mixture does not contain any substances that are assessed to be a PBT or a vPvB.

12.6 Endocrine disrupting properties

None of the ingredients are listed.

12.7 Other adverse effects

Data are not available.

SECTION 13: Disposal considerations

13.1 Waste treatment methods

Sewage disposal-relevant information

Do not empty into drains. Avoid release to the environment.

Waste treatment of containers/packagings

It is a dangerous waste; only packagings which are approved (e.g. acc. to ADR) may be used. Completely emptied packages can be recycled. Handle contaminated packages in the same way as the substance itself.

Remarks

Please consider the relevant national or regional provisions. Waste shall be separated into the categories that can be handled separately by the local or national waste management facilities.

SECTION 14: Transport information

14.1 UN number or ID number

ADR/RID/ADN	UN 3175
IMDG-Code	UN 3175
ICAO-TI	UN 3175

14.2 UN proper shipping name

ADR/RID/ADN	SOLIDS CONTAINING FLAMMABLE LIQUID, N.O.S.
IMDG-Code	SOLIDS CONTAINING FLAMMABLE LIQUID, N.O.S.
ICAO-TI	Solids containing flammable liquid, n.o.s.
Technical name (Hazardous ingredients)	isopentane, Isobutane

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14.3 Transport hazard class(es)

ADR/RID/ADN	4.1
IMDG-Code	4.1
ICAO-TI	4.1

14.4 Packing group

ADR/RID/ADN	II
IMDG-Code	II
ICAO-TI	II

14.5 Environmental hazards

non-environmentally hazardous acc. to the dangerous goods regulations

14.6 Special precautions for user

Provisions for dangerous goods (ADR) should be complied within the premises.

14.7 Maritime transport in bulk according to IMO instruments

No data available.

Information for each of the UN Model Regulations**Transport of dangerous goods by road, rail and inland waterway (ADR/RID/ADN) - additional information**

Classification code	F1
Danger label(s)	4.1



Special provisions (SP)	216, 274, 601, 800(ADN)
Excepted quantities (EQ)	E2
Limited quantities (LQ)	1 kg
Transport category (TC)	2
Tunnel restriction code (TRC)	E
Hazard identification No	40
Emergency Action Code	1Z

International Maritime Dangerous Goods Code (IMDG) - additional information

Marine pollutant	-
Danger label(s)	4.1



Special provisions (SP)	216, 274
Excepted quantities (EQ)	E2
Limited quantities (LQ)	1 kg
EmS	F-A, S-I
Stowage category	B

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International Civil Aviation Organization (ICAO-IATA/DGR) - additional information

Danger label(s)

4.1



Special provisions (SP)

A46

Excepted quantities (EQ)

E2

Limited quantities (LQ)

5 kg

SECTION 15: Regulatory information

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

Relevant provisions of the European Union (EU)

Restrictions according to REACH, Annex XVII

Name	Name acc. to inventory	Restriction	No
Isobutane	flammable / pyrophoric	R40	40
isopentane	this product meets the criteria for classification in accordance with Regulation No 1272/2008/EC	R3	3
isopentane	flammable / pyrophoric	R40	40

Legend

R3

- Shall not be used in:
 - ornamental articles intended to produce light or colour effects by means of different phases, for example in ornamental lamps and ash-trays,
 - tricks and jokes,
 - games for one or more participants, or any article intended to be used as such, even with ornamental aspects,
- Articles not complying with paragraph 1 shall not be placed on the market.
- Shall not be placed on the market if they contain a colouring agent, unless required for fiscal reasons, or perfume, or both, if they:
 - can be used as fuel in decorative oil lamps for supply to the general public, and
 - present an aspiration hazard and are labelled with H304.
- Decorative oil lamps for supply to the general public shall not be placed on the market unless they conform to the European Standard on Decorative oil lamps (EN 14059) adopted by the European Committee for Standardisation (CEN).
- Without prejudice to the implementation of other Union provisions relating to the classification, labelling and packaging of substances and mixtures, suppliers shall ensure, before the placing on the market, that the following requirements are met:
 - lamp oils, labelled with H304, intended for supply to the general public are visibly, legibly and indelibly marked as follows: "Keep lamps filled with this liquid out of the reach of children"; and, by 1 December 2010, "Just a sip of lamp oil – or even sucking the wick of lamps – may lead to life-threatening lung damage";
 - grill lighter fluids, labelled with H304, intended for supply to the general public are legibly and indelibly marked by 1 December 2010 as follows: "Just a sip of grill lighter fluid may lead to life threatening lung damage";
 - lamps oils and grill lighters, labelled with H304, intended for supply to the general public are packaged in black opaque containers not exceeding 1 litre by 1 December 2010.;

R40

- Shall not be used, as substance or as mixtures in aerosol dispensers where these aerosol dispensers are intended for supply to the general public for entertainment and decorative purposes such as the following:
 - metallic glitter intended mainly for decoration,
 - artificial snow and frost,
 - 'whoopie' cushions,
 - silly string aerosols,
 - imitation excrement,
 - horns for parties,
 - decorative flakes and foams,
 - artificial cobwebs,
 - stink bombs.
- Without prejudice to the application of other Community provisions on the classification, packaging and labelling of substances, suppliers shall ensure before the placing on the market that the packaging of aerosol dispensers referred to above is marked visibly, legibly and indelibly with:
 - 'For professional users only'.
- By way of derogation, paragraphs 1 and 2 shall not apply to the aerosol dispensers referred to Article 8 (1a) of Council Directive 75/324/EEC (2).
- The aerosol dispensers referred to in paragraphs 1 and 2 shall not be placed on the market unless they conform to the requirements indicated.

List of substances subject to authorisation (REACH, Annex XIV) / SVHC - candidate list

None of the ingredients are listed.

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Seveso Directive

2012/18/EU (Seveso III)			
No	Dangerous substance/hazard categories	Qualifying quantity (tonnes) for the application of lower and upper-tier requirements	Notes
	not assigned		

Regulation concerning the establishment of a European Pollutant Release and Transfer Register (PRTR)

None of the ingredients are listed.

Water Framework Directive (WFD)

None of the ingredients are listed.

Regulation (EU) 2019/1148 of the European Parliament and of the Council of 20 June 2019 on the marketing and use of explosives precursors, amending Regulation (EC) No 1907/2006 and repealing Regulation (EU) No 98/2013

None of the ingredients are listed.

Regulation on persistent organic pollutants (POP)

None of the ingredients are listed.

15.2 Chemical Safety Assessment

No Chemical Safety Assessment has been carried out for this mixture by the supplier.

SECTION 16: Other information

Abbreviations and acronyms

Abbr.	Descriptions of used abbreviations
2006/15/EC	Commission Directive establishing a second list of indicative occupational exposure limit values in implementation of Council Directive 98/24/EC and amending Directives 91/322/EEC and 2000/39/EC
ADN	Accord européen relatif au transport international des marchandises dangereuses par voies de navigation intérieures (European Agreement concerning the International Carriage of Dangerous Goods by Inland Waterways)
ADR	Accord européen relatif au transport international des marchandises dangereuses par route (European Agreement concerning the International Carriage of Dangerous Goods by Road)
ADR/RID/ADN	European Agreements concerning the International Carriage of Dangerous Goods by Road/Rail/Inland Waterways (ADR/RID/ADN)
Aquatic Chronic	Hazardous to the aquatic environment - chronic hazard
Asp. Tox.	Aspiration hazard
BCF	Bioconcentration factor
BOD	Biochemical Oxygen Demand
CAS	Chemical Abstracts Service (service that maintains the most comprehensive list of chemical substances)
CLP	Regulation (EC) No 1272/2008 on classification, labelling and packaging of substances and mixtures
COD	Chemical oxygen demand
DGR	Dangerous Goods Regulations (see IATA/DGR)
DMEL	Derived Minimal Effect Level
DNEL	Derived No-Effect Level
EC50	Effective Concentration 50 %. The EC50 corresponds to the concentration of a tested substance causing 50 % changes in response (e.g. on growth) during a specified time interval

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Abbr.	Descriptions of used abbreviations
EC No	The EC Inventory (EINECS, ELINCS and the NLP-list) is the source for the seven-digit EC number, an identifier of substances commercially available within the EU (European Union)
EH40/2005	EH40/2005 Workplace exposure limits (http://www.nationalarchives.gov.uk/doc/open-government-licence/)
EINECS	European Inventory of Existing Commercial Chemical Substances
EL50	Effective Loading 50 %: the EL50 corresponds to the loading rate required to produce a response in 50% of the test organisms
ELINCS	European List of Notified Chemical Substances
EmS	Emergency Schedule
Flam. Gas	Flammable gas
Flam. Liq.	Flammable liquid
GHS	"Globally Harmonized System of Classification and Labelling of Chemicals" developed by the United Nations
IATA	International Air Transport Association
IATA/DGR	Dangerous Goods Regulations (DGR) for the air transport (IATA)
ICAO	International Civil Aviation Organization
ICAO-TI	Technical instructions for the safe transport of dangerous goods by air
IMDG	International Maritime Dangerous Goods Code
IMDG-Code	International Maritime Dangerous Goods Code
index No	The Index number is the identification code given to the substance in Part 3 of Annex VI to Regulation (EC) No 1272/2008
IOELV	Indicative occupational exposure limit value
LC50	Lethal Concentration 50%: the LC50 corresponds to the concentration of a tested substance causing 50 % lethality during a specified time interval
LD50	Lethal Dose 50 %: the LD50 corresponds to the dose of a tested substance causing 50 % lethality during a specified time interval
LEL	Lower explosion limit (LEL)
LL50	Lethal Loading 50 %: the LL50 corresponds to the loading rate causing 50 % lethality
log KOW	n-Octanol/water
NLP	No-Longer Polymer
PBT	Persistent, Bioaccumulative and Toxic
PNEC	Predicted No-Effect Concentration
ppm	Parts per million
Press. Gas	Gas under pressure
REACH	Registration, Evaluation, Authorisation and Restriction of Chemicals
RID	Règlement concernant le transport International ferroviaire des marchandises Dangereuses (Regulations concerning the International carriage of Dangerous goods by Rail)
STEL	Short-term exposure limit
STOT SE	Specific target organ toxicity - single exposure
SVHC	Substance of Very High Concern
TWA	Time-weighted average
UEL	Upper explosion limit (UEL)

EX Component A

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Abbr.	Descriptions of used abbreviations
vPvB	Very Persistent and very Bioaccumulative
WEL	Workplace exposure limit

Key literature references and sources for data

Regulation (EC) No 1272/2008 on classification, labelling and packaging of substances and mixtures. Regulation (EC) No. 1907/2006 (REACH), amended by 2020/878/EU.

Transport of dangerous goods by road, rail and inland waterway (ADR/RID/ADN). International Maritime Dangerous Goods Code (IMDG). Dangerous Goods Regulations (DGR) for the air transport (IATA).

Classification procedure

Physical and chemical properties: The classification is based on tested mixture.

Health hazards, Environmental hazards: The method for classification of the mixture is based on ingredients of the mixture (additivity formula).

List of relevant phrases (code and full text as stated in chapter 2 and 3)

Code	Text
H220	Extremely flammable gas.
H224	Extremely flammable liquid and vapour.
H228	Flammable solid.
H280	Contains gas under pressure; may explode if heated.
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.

Disclaimer

This information is based upon the present state of our knowledge. This SDS has been compiled and is solely intended for this product.

Rethink the core of carbon-fibre production

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