Safety data sheet
according to 1907/2006/EC, Article 31

Printing date 25.09.2022 *Version number 4 (replaces version 3)* *Revision: 25.09.2022*

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

1.1 Product identifier

Trade name: Monocell FP.1

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

Sector of Use:
SU12 Manufacture of plastics products, including compounding and conversion
SU19 Building and construction work

Product category: PC32 Polymer preparations and compounds

Environmental release category:
ERC5 Use at industrial site leading to inclusion into/onto article
ERC11a Widespread use of articles with low release (indoor)
ERC12a Processing of articles at industrial sites with low release

Article category: AC13 Plastic articles
Application of the substance / the mixture:
Used mainly as raw material for the manufacturing of foamed thermal insulation and for an extensive range of cushioning and insulation packaging. The finished goods are produced with a molding process combined with the use of steam.

1.3 Details of the supplier of the safety data sheet

Manufacturer/Supplier:
MONOTEZ S.A.
Headquarters:
Neratziotissis 115, 15124 Maroussi, Athens, Greece
Tel .: (+30) 214 40 08 400 | Fax: (+30) 214 40 08 404
E-mail: info@monotez.com | Website: www.monotez.com

Factory:
Industrial Area, 320 11 Inofyta
Viotia, Greece
Tel.: (+30) 2262031257 | Fax: (+30) 2262031258

1.4 Emergency telephone number
Security/Transport phone number: +30 698 684 52 89

European Emergency Tel.: 112

SECTION 2: Hazards identification

2.1 Classification of the substance or mixture

Classification according to Regulation (EC) No 1272/2008:
The product is not classified, according to the CLP regulation.

2.2 Label elements
Labelling according to Regulation (EC) No 1272/2008: Void
Hazard pictograms: Void
Signal word: Void
Hazard statements: Void
Precautionary statements:
P210 Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.
P243 Take action to prevent static discharges.
P273 Avoid release to the environment.
P403+P233 Store in a well-ventilated place. Keep container tightly closed.
Additional information:
EUH018 In use may form flammable/explosive vapour-air mixture.

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2.3 Other hazards
Results of PBT and vPvB assessment:
PBT: Not applicable.
vPvB: Not applicable.

SECTION 3: Composition/information on ingredients

3.2 Mixtures
Description:
Polystyrene (CAS N° 9003-53-6), containing pentane isomers as blowing agent and flame retardant.

Dangerous components:

CAS: 109-66-0 EINECS: 203-692-4 Index number: 601-006-00-1 Reg.nr.: 01-2119459286-30-xxxx	pentane Flam. Liq. 2, H225 Asp. Tox. 1, H304 Aquatic Chronic 2, H411 STOT SE 3, H336 EUH066	<5%
CAS: 78-78-4 EINECS: 201-142-8 Index number: 601-006-00-1 Reg.nr.: 01-2119475602-38-xxxx	isopentane Flam. Liq. 1, H224 Asp. Tox. 1, H304 Aquatic Chronic 2, H411 STOT SE 3, H336 EUH066	<2%

Additional information: For the wording of the listed hazard phrases refer to section 16.

SECTION 4: First aid measures

4.1 Description of first aid measures
General information: Take affected persons out into the fresh air.

After inhalation:
Take affected persons into fresh air and keep quiet.
Seek medical treatment in case of complaints.
Symptom: dizziness, vertigo, dizziness, headache, incoordination.

After skin contact:
Symptom: Irritation.
If skin irritation continues, consult a doctor.

After eye contact: Symptom: Irritation.

After swallowing:
Rinse out mouth and then drink plenty of water.
Never give anything by mouth to an unconscious person.

4.2 Most important symptoms and effects, both acute and delayed
No further relevant information available.

4.3 Indication of any immediate medical attention and special treatment needed
No further relevant information available.

SECTION 5: Firefighting measures

5.1 Extinguishing media

Suitable extinguishing agents:
CO2, powder or water spray. Fight larger fires with water spray or alcohol resistant foam.

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5.2 Special hazards arising from the substance or mixture
In case of fire, the following can be released:
Carbon monoxide (CO)
carbon dioxide (CO2)
Can form explosive gas-air mixtures.

5.3 Advice for firefighters
Remove all persons from the incident.
Do not attempt to fight the fire without proper protective equipment:
- Self-contained breathing apparatus.
- Independent respirators.
Protective equipment: Wear a fully protective suit.
Additional information
Collect contaminated fire fighting water separately. It must not enter the sewage system.

SECTION 6: Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures
Keep people at a distance and stay on the windward side.
Keep away from ignition sources.
Particular danger of slipping on leaked/spilled product.
Wear appropriate footwear.
Pentane vapour leaks into the air can cause explosive atmospheres, heavier than air vapours.

6.2 Environmental precautions
Do not allow product to reach sewage system or any water course.
Inform respective authorities in case of seepage into water course or sewage system.
Do not allow to enter drains / surface or ground water.

6.3 Methods and material for containment and cleaning up
It is collected mechanically using anti-explosive equipment and placed in containers suitable for disposal.

6.4 Reference to other sections
See Section 7 for information on safe handling.
See Section 8 for information on personal protection equipment.
See Section 13 for disposal information.

SECTION 7: Handling and storage

7.1 Precautions for safe handling Thorough dedusting.
Information about fire - and explosion protection:
Use explosion-proof apparatus / fittings and spark-proof tools.
The equipment should be grounded.
Protect against electrostatic charges.

7.2 Conditions for safe storage, including any incompatibilities
Storage:
Requirements to be met by storerooms and receptacles:
Ground penetration is strictly prohibited.
Store away from heat, ignition sources, sunlight and incompatible substances.
The use of explosive atmosphere detectors is recommended.
Information about storage in one common storage facility: Do not store near flammable materials.
Further information about storage conditions: Store only outside or in explosion proof rooms.

7.3 Specific end use(s) No further relevant information available.

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SECTION 8: Exposure controls/personal protection

8.1 Control parameters

Ingredients with limit values that require monitoring at the workplace:

109-66-0 pentane

OEL Long-term value: 3000 mg/m³, 1000 ppm
IOELV

78-78-4 isopentane

OEL Long-term value: 3000 mg/m³, 1000 ppm
IOELV

DNELs

DNELs values

1,1 '-(isopropylidene) bis[3,5-dibromo-4-(2,3-dibromo-2-methylpropoxy) benzene] (CAS 97416-84-7):
- Worker exposure:
Acute inhalation toxicity, long-term, systemic effects: 7.05 mg/m³
Acute dermal toxicity, long-term, systemic effects: 1 mg/kg bw/day

Pentane (CAS 109-66-0):
- Worker exposure:
Acute inhalation toxicity, long-term, systemic effects: 3000 mg/m³
Acute dermal toxicity, long-term, systemic effects: 432 mg/kg bw/day

- General population exposure:
Acute toxicity, inhalation, long-term, systemic effects: 643 mg/m³
Acute dermal toxicity, long-term, systemic effects: 214 mg/kg bw/day
Acute oral toxicity, long-term, systemic effects: 214 mg/kg bw/day

Methyl butane (CAS 78-78-4):
- Worker exposure:
Acute inhalation toxicity, long-term, systemic effects: 3000 mg/m³
Acute dermal toxicity, long-term, systemic effects: 432 mg/kg bw/day

- General population exposure:
Acute toxicity, inhalation, long-term, systemic effects: 643 mg/m³
Acute toxicity dermal, long-term, systemic effects: 214 mg/kg bw/day
Acute oral toxicity, long-term, systemic effects: 214 mg/kg bw/day

PNECs

1,1 '-(isopropylidene) bis[3,5-dibromo-4-(2,3-dibromo-2-methylpropoxy) benzene] (CAS 97416-84-7)
PNEC Sediment, fresh water: 381 mg/kg
PNEC Sediment, seawater: 38,1 mg/kg
PNEC Soil: 76,1 mg/kg
PNEC Waste water treatment plants: 100 mg/lt

Pentane (CAS 109-66-0)
PNEC fresh water: 230 µg/lt
PNEC seawater: 230 µg/lt
PNEC Sediment, fresh water: 1,2 mg/kg
PNEC Sediment, seawater: 1,2 mg/kg
PNEC Soil: 0,55 mg/kg
PNEC Waste water treatment plants: 3600 µg/lt
Additional information: The lists valid during the making were used as basis.

8.2 Exposure controls

Appropriate engineering controls No further data; see item 7.

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Individual protection measures, such as personal protective equipment
General protective and hygienic measures: Wash hands before breaks and at the end of work.
Respiratory protection:
Suitable respiratory protective device recommended.
Filter AX
Hand protection:
(EN ISO 374)


Protective gloves

The glove material has to be impermeable and resistant to the product/ the substance/ the preparation.
Selection of the glove material on consideration of the penetration times, rates of diffusion and the degradation
Material of gloves:
Permeability time: 8 h
Fluoro carbon rubber - FKM
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.
Penetration time of glove material:
The determined penetration times according to EN 16523-1:2015 are not performed under practical conditions. Therefore a maximum wearing time, which corresponds to 50% of the penetration time, is recommended.
The exact break through time has to be found out by the manufacturer of the protective gloves and has to be observed.
Eye/face protection:


It is recommended to use protective goggles with sidewalls, either completely fitting.

Body protection:


Protective workwear with antistatic properties (EN ISO 1149-5).

Use of non-slip (EN ISO 13287), anti-static safety footwear.

SECTION 9: Physical and chemical properties

9.1 Information on basic physical and chemical properties
General Information

Physical state:	Solid
Colour:	White
Odour:	Characteristic
Odour threshold:	Not determined.
Melting point/freezing point:	Undetermined.
Boiling point or initial boiling point and boiling range:	Undetermined.
Flammability:	Not determined.
Lower and upper explosion limit	
Lower:	1.4 Vol %
Upper:	7.8 Vol %
Flash point:	< 50 °C
Ignition temperature:	285 °C

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Decomposition temperature:	Not determined.
pH:	Not applicable.
Viscosity:	
Kinematic viscosity	Not applicable.
Dynamic:	Not applicable.
Solubility	
water:	Insoluble.
Partition coefficient n-octanol/water (log value):	Not determined.
Vapour pressure:	Not applicable.
Density and/or relative density	
Density:	Not determined.
Relative density at 20 °C:	1020-1050 kg/m³
Bulk density:	600 kg/m³
Vapour density:	2.5 (air=1)
Particle characteristics:	See item 3.

9.2 Other information

Appearance:	
Form:	Granulate
Important information on protection of health and environment, and on safety	
Auto-ignition temperature:	Product is not selfigniting.
Explosive properties:	Product does not present an explosion hazard. In use, may form flammable/explosive vapour-air mixture.
Change in condition	
Evaporation rate:	Not applicable.

Information with regard to physical hazard classes

Explosives:	Void
Flammable gases:	Void
Aerosols:	Void
Oxidising gases:	Void
Gases under pressure:	Void
Flammable liquids:	Void
Flammable solids:	Void
Self-reactive substances and mixtures:	Void
Pyrophoric liquids:	Void
Pyrophoric solids:	Void
Self-heating substances and mixtures:	Void
Substances and mixtures, which emit flammable gases in contact with water:	Void
Oxidising liquids:	Void
Oxidising solids:	Void
Organic peroxides:	Void
Corrosive to metals:	Void
Desensitised explosives:	Void

SECTION 10: Stability and reactivity

10.1 Reactivity No further relevant information available.

10.2 Chemical stability Under normal conditions of use and storage, it is stable.
Thermal decomposition / conditions to be avoided: No decomposition if used according to specifications.

10.3 Possibility of hazardous reactions
Polymerisation.
Forms explosive gas mixture with air.

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10.4 Conditions to avoid Heat.

10.5 Incompatible materials No further relevant information available.

10.6 Hazardous decomposition products
The release rate of pentane increases with temperature. The pellets expand with the rapid evolution of pentane at 70-75 °C.
The product decomposes above 200 °C.
Hydrocarbons
Combustion produces carbon monoxide, carbon dioxide along with smoke.

SECTION 11: Toxicological information

11.1 Information on hazard classes as defined in Regulation (EC) No 1272/2008
Acute toxicity Based on available data, the classification criteria are not met.
Skin corrosion/irritation: Based on available data, the classification criteria are not met.
Serious eye damage/irritation: Based on available data, the classification criteria are not met.
Respiratory or skin sensitisation: Based on available data, the classification criteria are not met.
Germ cell mutagenicity: Based on available data, the classification criteria are not met.
Carcinogenicity: Based on available data, the classification criteria are not met.
Reproductive toxicity: Based on available data, the classification criteria are not met.
STOT-single exposure: Based on available data, the classification criteria are not met.
STOT-repeated exposure: Based on available data, the classification criteria are not met.
Aspiration hazard: Based on available data, the classification criteria are not met.

11.2 Information on other hazards
Endocrine disrupting properties:
None of the ingredients is listed.

SECTION 12: Ecological information

12.1 Toxicity
Aquatic toxicity: No further relevant information available.

12.2 Persistence and degradability No further relevant information available.

12.3 Bioaccumulative potential No further relevant information available.

12.4 Mobility in soil No further relevant information available.
12.5 Results of PBT and vPvB assessment
PBT: Not applicable.
vPvB: Not applicable.

12.6 Endocrine disrupting properties
The product does not contain substances with endocrine disrupting properties.

12.7 Other adverse effects
Additional ecological information:
General notes:
Do not allow product to reach ground water, water course or sewage system, even in small quantities.
Danger to drinking water if even extremely small quantities leak into the ground.

SECTION 13: Disposal considerations

13.1 Waste treatment methods
Recommendation:
Must not be disposed together with household garbage. Do not allow product to reach sewage system.

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European waste catalogue:

07 02 13 waste plastic

Uncleaned packaging:
Recommendation:
Contaminated casings should be emptied as best as possible, otherwise you can use them again after appropriate cleaning.
Deposition is carried out in accordance with official instructions.
Once cleaned, the container can be reused or the material can be recycled.
Alternatively, incineration at a time of 2 seconds and a temperature above 1200 °C, dispatch to wet scrubbing facilities or authorised landfills are appropriate disposal methods.

SECTION 14: Transport information

14.1 UN number or ID number	
ADR, IMDG, IATA	UN2211
14.2 UN proper shipping name	
ADR	2211 POLYMERIC BEADS, EXPANDABLE mixture
IMDG	POLYMERIC BEADS, EXPANDABLE mixture
IATA	Polymeric beads, expandable mixture
14.3 Transport hazard class(es)	
ADR, IMDG, IATA	
Class	9 Miscellaneous dangerous substances and articles.
Label	-
14.4 Packing group	
ADR, IMDG, IATA	III
14.5 Environmental hazards:	Not applicable.
14.6 Special precautions for user	Warning: Miscellaneous dangerous substances and articles.
Hazard identification number (Kemler code):	90
EMS Number:	F-A,S-I
Stowage Category:	E
Stowage Code:	SW1 Protected from sources of heat. SW6 When stowed under-deck, mechanical ventilation shall be in accordance with SOLAS regulation II-2/19 (II-2/54) for flammable liquids with flashpoint below 23°C c.c.
Segregation Code:	SG5 Segregation as for class 3 SG14 Stow "separated from" class 1 except for division 1.4S
14.7 Maritime transport in bulk according to IMO instruments	Not applicable.

Transport/Additional information:

ADR	
Limited quantities (LQ):	5 kg
Excepted quantities (EQ):	Code: E1 Maximum net quantity per inner packaging: 30 g Maximum net quantity per outer packaging: 1000 g
Transport category:	3
Tunnel restriction code:	D/E

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IMDG

Limited quantities (LQ):	5 kg
Excepted quantities (EQ):	Code: E1 Maximum net quantity per inner packaging: 30 g Maximum net quantity per outer packaging: 1000 g

IATA

Remarks:	Special Provison 965
UN "Model Regulation":	UN 2211 POLYMERIC BEADS, EXPANDABLE MIXTURE, III

SECTION 15: Regulatory information

15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture
CLP Regulation (EC) No 1272/2008.
REACH Regulation 1907/2006/EC.
Council Directive 98/24/EC of 7 April 1998 on the protection of the health and safety of workers from risks related to chemical agents at work
Directive 94/33/EC on the protection of young people at work, as amended and in force.
Directive 92/85/EEC on the introduction of measures to encourage improvements in the safety and health at work of pregnant workers and workers who have recently given birth or are breastfeeding, as amended and in force.

Directive 2012/18/EU
Named dangerous substances - ANNEX I None of the ingredients is listed.
Directive 2011/65/EU on the restriction of the use of certain hazardous substances in electrical and electronic equipment – Annex II
None of the ingredients is listed.
Regulation (EU) 2019/1148
Annex I - RESTRICTED EXPLOSIVES PRECURSORS (Upper limit value for the purpose of licensing under Article 5(3))
None of the ingredients is listed.
Annex II - REPORTABLE EXPLOSIVES PRECURSORS
None of the ingredients is listed.
Regulation (EC) No 273/2004 on drug precursors
None of the ingredients is listed.
Regulation (EC) No 111/2005 laying down rules for the monitoring of trade between the Community and third countries in drug precursors
None of the ingredients is listed.

15.2 Chemical safety assessment A Chemical Safety Assessment has not been carried out.

SECTION 16: Other information

This information is based on our present knowledge. However, this shall not constitute a guarantee for any specific product features and shall not establish a legally valid contractual relationship.

Relevant phrases:
H224 Extremely flammable liquid and vapour.
H225 Highly flammable liquid and vapour.
H304 May be fatal if swallowed and enters airways.
H336 May cause drowsiness or dizziness.
H411 Toxic to aquatic life with long lasting effects.
EUH066 Repeated exposure may cause skin dryness or cracking.
Version number of previous version: 3
Abbreviations and acronyms:
ADR: Accord relatif au transport international des marchandises dangereuses par route (European Agreement Concerning the International Carriage of Dangerous Goods by Road)

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IMDG: International Maritime Code for Dangerous Goods
IATA: International Air Transport Association
GHS: Globally Harmonised System of Classification and Labelling of Chemicals
EINECS: European Inventory of Existing Commercial Chemical Substances
ELINCS: European List of Notified Chemical Substances
CAS: Chemical Abstracts Service (division of the American Chemical Society)
DNEL: Derived No-Effect Level (REACH)
PNEC: Predicted No-Effect Concentration (REACH)
PBT: Persistent, Bioaccumulative and Toxic
vPvB: very Persistent and very Bioaccumulative
Flam. Liq. 1: Flammable liquids – Category 1
Flam. Liq. 2: Flammable liquids – Category 2
STOT SE 3: Specific target organ toxicity (single exposure) – Category 3
Asp. Tox. 1: Aspiration hazard – Category 1
Aquatic Chronic 2: Hazardous to the aquatic environment - long-term aquatic hazard – Category 2