ACCORDING TO EC-REGULATIONS 1907/2006 (REACH), 1272/2008 (CLP) & 2015/830

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

1.1 Product identifier

Product Name	Pentane
CAS No.	109-66-0
EC No.	203-692-4
REACH Registration No.	

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

Identified Use(s)	PC21 Laboratory chemicals
Uses Advised Against	Not known.

1.3 Details of the supplier of the safety data sheet

Manufacturer	
Company Identification	Rathburn Chemicals Ltd
Address of Manufacturer	6 Caberston Road Walkerburn Peeblesshire Scotland
Postal code	EH43 6AU
Telephone:	00 (44) (0) 1 896 870 651
E-mail	sales@rathburn.co.uk
Office hours	09:00 – 17:00
Supplier	
Company Identification	Rathburn Chemicals Ltd
Address of Supplier	6 Caberston Road Walkerburn Peeblesshire Scotland
Postal code	EH43 6AU
Telephone:	00 (44) (0) 1 896 870 651
E-mail	sales@rathburn.co.uk
Office hours	09:00 – 17:00

1.4 Emergency telephone number

Emergency Phone No.	00 (44) (0) 1 896 870 651 or 00 (44)(0) 7807 520501
Contact	Roddy Stoddart

2. SECTION 2: HAZARDS IDENTIFICATION

2.1 Classification of the substance or mixture

2.1.1 Regulation (EC) No. 1272/2008 (CLP)	Flam. Liq. 2 :Highly flammable liquid and vapour. Asp. Tox. 1 :May be fatal if swallowed and enters airways. STOT SE 3 :May cause drowsiness or dizziness. Aquatic Chronic 2 :Toxic to aquatic life with long lasting effects.

2.2 Label elements

According to Regulation (EC) No. 1272/2008 (CLP)

Product Name: Pentane

Hazard Pictogram(s):

GHS02 GHS08 GHS07 GHS09

Signal Word(s): Danger

Hazard Statement(s):

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.

Precautionary Statement(s):

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

P273: Avoid release to the environment.
P301+P310: IF SWALLOWED: Immediately call a POISON CENTER/doctor.
P331: Do NOT induce vomiting.
P370+P378: In case of fire: Use to extinguish.
P391: Collect spillage.

2.3 Other hazards

None known.

2.4 Additional Information

For full text of H/P Statements see section 16.

3. SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS

3.1 Substances

HAZARDOUS INGREDIENT(S)	CAS No.	EC No. / REACH Registration No.	%W/W	Hazard Statement(s)	Hazard Pictogram(s)
pentane	109-66-0	203-692-4	100	Flam. Liq. 1 H224 Asp. Tox. 1 H304 STOT SE 3 H336 Aquatic Chronic 2 H411	GHS02 GHS08 GHS07 GHS09

3.2 Mixtures

Not applicable.

4. SECTION 4: FIRST AID MEASURES

4.1 Description of first aid measures

Inhalation: Remove person to fresh air and keep comfortable for breathing. Call a POISON CENTER/doctor if you feel unwell.
Skin Contact: Take off immediately all contaminated clothing. Rinse skin with water.
Eye Contact: Treat symptomatically.
Ingestion: Do NOT induce vomiting. Immediately call a POISON CENTER/doctor.

4.2 Most important symptoms and effects, both acute and delayed

Treat symptomatically.

4.3 Indication of any immediate medical attention and special treatment needed

Call a POISON CENTER/doctor if you feel unwell. Treat symptomatically.

5. SECTION 5: FIREFIGHTING MEASURES

5.1 Extinguishing media

Suitable Extinguishing media: Use to extinguish.
Unsuitable extinguishing media: Water jet spray

5.2 Special hazards arising from the substance or mixture

Highly flammable liquid and vapour. May decompose in a fire giving off toxic fumes.

5.3 Advice for firefighters

Fire fighters should wear complete protective clothing including self-contained breathing apparatus. If it is safe to do so, containers should be removed from fire area because they are likely to rupture under fire conditions.

6. SECTION 6: ACCIDENTAL RELEASE MEASURES

6.1 Personal precautions, protective equipment and emergency procedures

Ensure adequate ventilation. Use non-sparking ventilation systems, approved explosion-proof equipment, and intrinsically safe electrical systems. Ensure full personal protection (including respiratory protection) during removal of spillages.

6.2 Environmental precautions

Spillages or uncontrolled discharges into watercourses must be alerted to the appropriate regulatory body.

6.3 Methods and material for containment and cleaning up

Adsorb spillages onto sand, earth or any suitable adsorbent material. Contain spillages with sand, earth or any suitable adsorbent material. Earth may be shovelled to contain spillage and to avoid contamination of sewers and watercourses.

6.4 Reference to other sections

See Also Section 8, 13.

7. SECTION 7: HANDLING AND STORAGE

7.1 Precautions for safe handling

Avoid breathing dust/fume/gas/mist/vapours/spray. Use only outdoors or in a well-ventilated area. Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. Keep container tightly closed. Use explosion-proof electrical/ventilating/lighting/equipment. Use non-sparking tools. Take action to prevent static discharges. Wear protective gloves/protective clothing/eye protection/face protection.

7.2 Conditions for safe storage, including any incompatibilities

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

Storage temperature	Ambient.
Storage life	Stable under normal conditions.
Incompatible materials	None known.

7.3 Specific end use(s)

Not known.

8. SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1 Control parameters

8.1.1 Occupational Exposure Limits

Occupational Exposure Limits						
SUBSTANCE.	CAS No.	LTEL (8 hr TWA ppm)	LTEL (8 hr TWA mg/m³)	STEL (ppm)	STEL (mg/m³)	Note
Pentane	109-66-0	600	1800			
Pentane	109-66-0	1000	3000	0	0	IOELV

Region	Source
EU	EU Occupational Exposure Limits
United Kingdom	UK Workplace Exposure Limits EH40/2005 (Third edition, published 2018)

Remark	Notes
IOELV	Indicative Occupational Exposure Limit Values.

8.2 Exposure controls

8.2.1. Appropriate engineering controls: Use non-sparking ventilation systems, approved explosion-proof equipment, and intrinsically safe electrical systems. Use with ventilation, local exhaust ventilation or breathing protection.

8.2.2. Personal protection equipment

Eye Protection: Wear eye protection with side protection (EN166).

Skin protection: Wear protective clothing and gloves: Impervious gloves (EN 374).

Respiratory protection: A suitable mask with filter type A (EN14387 or EN405) may be appropriate.

Thermal hazards	None known.
8.2.3. Environmental Exposure Controls	Spillages or uncontrolled discharges into watercourses must be alerted to the appropriate regulatory body.

9. SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

9.1 Information on basic physical and chemical properties

Appearance	Liquid. Colour : Colourless
Odour	Not known.
Odour threshold	Not known.
pH	Not known.
Melting point/freezing point	Not known.
Initial boiling point and boiling range	Not known.
Flash Point	-49C

Evaporation rate	Not known.
Flammability (solid, gas)	Not known.
Upper/lower flammability or explosive limits	Not known.
Vapour pressure	Not known.
Vapour density	Not known.
Density (g/ml)	Not known.
Relative density	Not known.
Solubility(ies)	Solubility (Water) : Not known. Solubility (Other) : Not known.
Partition coefficient: n-octanol/water	Not known.
Auto-ignition temperature	Not known.
Decomposition Temperature (°C)	Not known.
Viscosity	Not known.
Explosive properties	Not known.
Oxidising properties	Not known.

9.2 Other information

None.

10. SECTION 10: STABILITY AND REACTIVITY

10.1 Reactivity	None anticipated.
10.2 Chemical Stability	Stable under normal conditions.
10.3 Possibility of hazardous reactions	No hazardous reactions known if used for its intended purpose.
10.4 Conditions to avoid	Avoid friction, sparks, or other means of ignition.
10.5 Incompatible materials	Not known.
10.6 Hazardous decomposition products	No hazardous decomposition products known.

11. SECTION 11: TOXICOLOGICAL INFORMATION

11.1 Information on toxicological effects

Acute toxicity - Ingestion	Low acute toxicity
Acute toxicity - Skin Contact	Low acute toxicity
Acute toxicity - Inhalation	Low acute toxicity
Skin corrosion/irritation	Non-irritant
Serious eye damage/irritation	Non-irritant
Skin sensitization data	Not classified
Respiratory sensitization data	Not classified
Germ cell mutagenicity	There is no evidence of mutagenic potential.
Carcinogenicity	No evidence of carcinogenicity.
Reproductive toxicity	Not classified
Lactation	Not classified
STOT - single exposure	May cause drowsiness or dizziness.
STOT - repeated exposure	Not classified
Aspiration hazard	May be fatal if swallowed and enters airways.

11.2 Other information

Not known.

12. SECTION 12: ECOLOGICAL INFORMATION

Toxic to aquatic life with long lasting effects.

Toxicity - Aquatic invertebrates	Not known.
Toxicity - Fish	Not known.
Toxicity - Algae	Not known.
Toxicity - Sediment Compartment	Not classified.
Toxicity - Terrestrial Compartment	Not classified.
12.2. Persistence and Degradation	Not known.
12.3. Bioaccumulative potential	Not known.
12.4. Mobility in soil	Not known.
12.5. Results of PBT and vPvB assessment	Not known.

12.6 Other adverse effects

Not known.

13. SECTION 13: DISPOSAL CONSIDERATIONS

13.1 Waste treatment methods

Dispose of contents in accordance with local, state or national legislation. Recycle only completely emptied packaging. Containers must not be punctured or destroyed by burning, even when empty. Do not allow to enter drains, sewers or

RATHBURN

watercourses. Do NOT landfill. Normal disposal is via incineration operated by an accredited disposal contractor. Send to a licensed recycler, reclaimer or incinerator. Dispose of this material and its container to hazardous or special waste collection point. Dispose at suitable refuse site.

13.2 Additional Information

Disposal should be in accordance with local, state or national legislation.

14. SECTION 14: TRANSPORT INFORMATION

14.1 UN number

UN No.	1265

14.2 UN proper shipping name

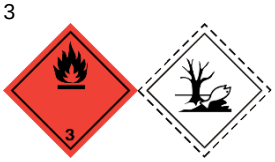
UN proper shipping name	PENTANES

14.3 Transport hazard class(es)

ADR/RID Class	3
IMDG Class	3
IMDG EMS	F-E, S-D
ICAO/IATA	
Excepted Quantities	E2
Passenger and Cargo Aircraft Limited Quantities Packing Instructions	Y341
Passenger and Cargo Aircraft Limited Quantities Max net Qty	1L
Passenger and Cargo Aircraft Packing Instructions	353
Passenger and Cargo Aircraft Max net Qty	5L
Cargo Aircraft Packing Instructions	364
Cargo Aircraft Max net Qty	60L
Special Provisions	
Emergency Response Guidebook (ERG) Code	3H
ADR Classification Code	F1
ADR HIN	33
ADR Transport Category	2
Tunnel Restriction Code	D/E
Emergency Action Code	3YE
APP Advice on Additional Personal Protection (APP)	

14.4 Packing group

Packing group	II
Labels	3



Special Provisions	
Limited Quantities	1 L
Excepted Quantities	E2
Mixed Packing Instructions for Packages	P001 IBC02
Special Packing Provisions for Packages	B8
Mixed Packing Instructions for Packages	MP19

14.5 Environmental hazards

Environmental hazards	Classified as a Marine Pollutant.

14.6 Special precautions for user

Special precautions for user	Not known.

14.7 Transport in bulk according to Annex II of Marpol and the IBC Code

Packing Instructions for Portable Tanks	T4
Special Provisions for Portable Tanks	TP1
Tank Code for Tanks	L1.5BN
Special Provisions for Tanks	
Vehicle for Tank Carriage	FL
Special Provisions for Carriage - Packages	
Special Provisions for Carriage - Bulk	

Special Provisions for Carriage - Loading, Unloading and Handling	
Special Provisions for Carriage - Operation	S2 S20

15. SECTION 15: REGULATORY INFORMATION

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

European Regulations - Authorisations and/or Restrictions On Use

Candidate List of Substances of Very High Concern for Authorisation	Not listed
REACH: ANNEX XIV list of substances subject to authorisation	Not listed
REACH: Annex XVII Restrictions on the manufacture, placing on the market and use of certain dangerous substances, mixtures and articles	pentane (109-66-0)
Community Rolling Action Plan (CoRAP)	Not listed
Regulation (EC) N° 850/2004 of the European Parliament and of the Council on persistent organic pollutants	Not listed
Regulation (EC) N° 1005/2009 on substances that deplete the ozone layer	Not listed
Regulation (EU) N° 649/2012 of the European Parliament and of the Council concerning the export and import of hazardous chemicals	Not listed
National regulations	
Other	Not known.

15.2 Chemical Safety Assessment

A REACH chemical safety assessment has not been carried out.

16. SECTION 16: OTHER INFORMATION

The following sections contain revisions or new statements:

LEGEND

Hazard Pictogram(s)

GHS02

GHS07

GHS08

GHS09

Hazard Statement(s)	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.
Precautionary Statement(s)	P210: Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. P233: Keep container tightly closed. P240: Ground and bond container and receiving equipment. P241: Use explosion-proof electrical/ventilating/lighting/equipment. P242: Use non-sparking tools. P243: Take action to prevent static discharges. P261: Avoid breathing dust/fume/gas/mist/vapours/spray. P271: Use only outdoors or in a well-ventilated area. P273: Avoid release to the environment. P280: Wear protective gloves/protective clothing/eye protection/face protection. P301+P310: IF SWALLOWED: Immediately call a POISON CENTER/doctor.

P303+P361+P353: IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water.
P304+P340: IF INHALED: Remove person to fresh air and keep comfortable for breathing.
P312: Call a POISON CENTER/doctor if you feel unwell.
P331: Do NOT induce vomiting.
P370+P378: In case of fire: Use to extinguish.
P391: Collect spillage.
P403+P233: Store in a well-ventilated place. Keep container tightly closed.
P403+P235: Store in a well-ventilated place. Keep cool.
P405: Store locked up.
P501: Dispose of contents in accordance with local, state or national legislation.

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