

HARP[®] 365mfc/227ea (87/13)

Revision: 1
Revision date: December 2020

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

1.1 Product identifier

Product name	R365mfc/R227ea (Pentafluorobutane/Heptafluoropropane)
REACH registration number	See section 3: Composition/information on ingredients
CAS No.	See section 3: Composition/information on ingredients
EC No.	See section 3: Composition/information on ingredients

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

Product use	Foaming agent
Restricted use	Consumer uses: Private households (= general public = consumers)
Description	Liquid

1.3 Details of the supplier of the safety data sheet

Company	Harp International Limited
Address	Gellihirion Industrial Estate Pontypridd Rhondda Cynon Taff CF37 5SX UK
Web	www.harpintl.com
Telephone	+44 (0) 1443 842 255
Fax	+44 (0) 1443 841 805
Email	harp@harpintl.com
Email of competent person	safety@harpintl.com

1.4 Emergency telephone number

Emergency telephone number	+44 (0) 1270 502 891 24 hours
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SECTION 2: Hazards identification

2.1 Classification of the substance or mixture

Classification – EC 1272/2008	Not classified as hazardous
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2.2 Label elements

Hazard pictograms	Not labelled as hazardous
Signal word	Not labelled as hazardous
Hazard statement	Not labelled as hazardous
Precautionary statement	Not labelled as hazardous

2.3 Other hazards

Other hazards	Can become flammable in use
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SECTION 3: Composition/information on ingredients

3.1 Substances

EC 1272/2008

Chemical name	CAS No.	EC No.	REACH registration number	Concentration (%w/w)	Classification
1,1,1,3,3-Pentafluorobutane	406-58-6	430-250-1	01-0000017653-68	>80 - <90%	Flam. Liq. 2: H225
1,1,1,2,3,3,3-Heptafluoropropane	431-89-0	207-079-2	01-2119485489-18	>10 - <15%	Compressed gas: H280

The purity of the substance in this section is used for classification only and does not represent the actual purity of the substance as supplied.

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SECTION 4: First aid measures

4.1 Description of first aid measures

Inhalation	Move the exposed person to fresh air. Oxygen or artificial respiration if needed.
Eye contact	Rinse immediately with plenty of water
Skin contact	Wash off with soap and water
Ingestion	Clean mouth with water and afterwards drink plenty of water

4.2 Most important symptoms and effects, both acute and delayed

Inhalation	Narcosis. At high concentrations: asphyxiation
Eye contact	Slight irritation
Skin contact	Prolonged skin contact may defat the skin and produce dermatitis
Ingestion	May cause gastrointestinal irritation, nausea, vomiting and diarrhoea

4.3 Indication of any immediate medical attention and special treatment needed

Inhalation	When symptoms persist, or in all cases of doubt, seek medical advice
Eye contact	When symptoms persist, or in all cases of doubt, seek medical advice
Skin contact	When symptoms persist, or in all cases of doubt, seek medical advice
Ingestion	When symptoms persist, or in all cases of doubt, seek medical advice

SECTION 5: Firefighting measures

5.1 Extinguishing media

	Powder, foam, aqueous film forming foam (AFFF), carbon dioxide
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5.2 Special hazards arising from the substance or mixture

	This product is not flammable. Vapours are heavier than air and may spread along floors. Vapours may form explosive mixtures with air. May ignite in the presence of high energy source of ignition. Hazardous decomposition products formed under fire conditions.
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5.3 Advice for firefighters

	Wear self-contained breathing apparatus and protective clothing. Full protective flameproof clothing. Wear chemical resistant oversuit. In case of fire, use water spray. Keep product and empty container away from heat and sources of ignition.
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SECTION 6: Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures

	Prevent further leakage or spillage if safe to do so. Keep away from incompatible products. Evacuate personnel to a safe area. Keep people away from and upwind of spill/leak. Remove all sources of ignition. Wear self-contained breathing apparatus and protective suit. Cover the spreading liquid with foam in order to slow down evaporation. Ventilate the area.
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6.2 Environmental precautions

	Should not be released into the environment. If the product contaminates rivers and lakes or drains, inform respective authorities.
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6.3 Methods and material for containment and clean up

	Dam up. Soak up with inert absorbant material. Prevent product from entering sewage system. Keep in properly labelled containers. Keep in suitable closed containers for disposal.
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6.4 Reference to other sections

	See section 8 Exposure controls / personal protection See section 13 Disposal considerations
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SECTION 7: Handling and storage

7.1 Precautions for safe handling

	Use in closed system. Use only in well-ventilated areas. Keep away from heat and sources of ignition. Heating can release vapours which can be ignited. To avoid ignition of vapours by static electricity discharge, all metal parts of the equipment must be grounded. When transferring from one container to another, apply earthing measures and use conductive hose material. Preferably transfer by pump or gravity. Do not use sparking tools. Keep away from incompatible products.
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7.2 Conditions for safe storage, including any incompatibilities

	Store in original container. Keep container closed. Keep in a cool, well-ventilated place. Keep in a bunded area. Keep away from heat/sparks/open flames/hot surfaces. No smoking. Ensure all equipment is electrically grounded before beginning transfer operations. Take measures to prevent the build-up of electrostatic charge. Keep away from incompatible products.
Suitable packaging	Steel drum

7.3 Specific end use(s)

	See section 1.2 Relevant identified uses of the substance or mixture and uses advised against for further information.
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SECTION 8: Exposure controls/personal protection

8.1 Control parameters – exposure limit values

Component	CAS No.	Value type (form of exposure)	Exposure limit values	Source
Pentafluorobutane	406-58-6		Not listed in EH40	
Heptafluoropropane	431-89-0		Not listed in EH40	

8.2 Exposure controls

Appropriate engineering controls	Provide appropriate exhaust ventilation at machinery. Apply technical measures to comply with the occupational exposure limits.
Individual protection measures	In case of insufficient ventilation, wear suitable respiratory equipment. When workers are facing concentrations above the exposure limit they must use appropriate certified respirators. Self-contained breathing apparatus (EN 133). Respirator with a vapour filter (EN 141). Wear suitable gloves. Take note of the information given by the producer concerning permeability and break through times and of special workplace conditions (mechanical strain, duration of contact). Suitable material: Neoprene.
Eye/face protection	Chemical resistant goggles must be worn. If splashes are likely to occur wear face shield.
Skin & body protection	Flame resistant clothing. If splashes are likely to occur, wear apron, boots, neoprene.
Environmental exposure controls	Dispose of rinse water in accordance with local and national regulations.

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SECTION 9: Physical and chemical properties

9.1 Information on basic physical and chemical properties

Appearance - Physical state	Liquid
Appearance - Form	Volatile
Colour	Colourless
Odour	Ether-like
Odour threshold	No data available
pH	6
Melting point	No data available
Boiling point / range	24°C
Flash point	Does not flash
Evaporation rate	No data available
Flammability	This product is not flammable [May become flammable if there is a possibility for the enrichment of the flammable component. No data available.]
Vapour pressure	930 hPa (20°C)
Vapour density	6.5
Relative density	1.29
Solubility(ies) Water solubility	Miscible with most organic solvents 5 g/l (20°C)
Partition coefficient: n-octanol/water	1.6 log Pow
Auto-ignition temperature	580°C
Decomposition temperature	>=200°C
Viscosity Viscosity, dynamic	0.4 mPa.s (25°C)

9.2 Other information

	No data available
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SECTION 10: Stability and reactivity

10.1 Reactivity

	Risk of violent reaction. Risk of explosion.
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10.2 Chemical stability

	Stable under recommended storage conditions
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10.3 Possibility of hazardous reactions

	Strong oxidizers, alkali metals and alkaline earth metals may cause fires or explosions.
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10.4 Conditions to avoid

	Heat
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10.5 Incompatible materials

	Powdered metals, light and/or alkaline metals, alkaline earth metals.
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10.6 Hazardous decomposition products

	Gaseous hydrogen fluoride (HF), Carbon Monoxide.
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SECTION 11: Toxicological information

11.1 Information on toxicological effects

Acute toxicity	Not classified as hazardous for acute oral, dermal and inhalation toxicity according to GHS criteria
Skin corrosion/irritation	No evidence of skin irritation
Serious eye damage/irritation	No evidence of eye irritation
Respiratory or skin sensitisation	No evidence of skin sensitisation
Germ cell mutagenicity	No evidence of mutagenic effects
Carcinogenicity	No data available
Reproductive toxicity	No data available
STOT single exposure	Not classified as specific target organ toxicant according to GHS criteria
STOT repeated exposure	Not classified as specific target organ toxicant according to GHS criteria
Aspiration hazard	No data available
Repeated or prolonged exposure	No data available

SECTION 12: Ecological information

12.1 Toxicity

	No data available
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12.2 Persistence and degradability

	No data available
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12.3 Bioaccumulative potential

	Does not bioaccumulate
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12.4 Mobility in soil

	No data available
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12.5 Results of PBT and vPvB assessment

	Not considered to be PBT or vPvB
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12.6 Other adverse effects

	Contains fluorinated greenhouse gases. Global warming potential: 1170 No effect on stratospheric ozone. Ozone depleting potential: 0 No acute environmental hazard identified No chronic environmental hazard identified
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SECTION 13: Disposal considerations

13.1 Waste treatment methods

	In accordance with local and national regulations. Refer to manufacturer/supplier for information on recovery/recycling. Must be incinerated in a permitted plant equipped with a system for neutralizing or recovery of HF. EWC code: 14 06 01* Chlorofluorocarbons, HCFC, HFC
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SECTION 14: Transport information

Hazard pictograms

	Not regulated
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14.1 UN number

	Not regulated
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14.2 UN proper shipping name

	Not regulated
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14.3 Transport hazard class(es)

ADR/RID	Not regulated
IMDG	Not regulated
IATA	Not regulated

14.4 Packing group

	Not regulated
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14.5 Environmental hazards

Environmental hazards	Not regulated
Marine pollutant	Not regulated

14.6 Special precautions for user

	Ensure containers are firmly secured. Ensure compliance with applicable regulations.
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14.7 Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code

	Not applicable
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SECTION 15: Regulatory information

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

Regulations	REGULATION (EC) No 1907/2006 OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL of 18 December 2006 concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH), establishing a European Chemicals Agency, amending Directive 1999/45/EC and repealing Council Regulation (EEC) No 793/93 and Commission Regulation (EC) No 1488/94 as well as Council Directive 76/769/EEC and Commission Directives 91/155/EEC, 93/67/EEC, 93/105/EC and 2000/21/EC.
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15.2 Chemical safety assessment

	A CSA does not need to be carried out for this product
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SECTION 16: Other information

Other information

Text of Hazard Statements in Section 3	H225: Highly flammable liquid and vapour H280: Contains gas under pressure; may explode if heated.
Reference materials	HSE publication EH40/2005 Workplace exposure limits (latest edition)
Changes from previous versions	-

Further information

	The information supplied in this safety data sheet is designed only as guidance for the safe use, storage and handling of the product. This information is correct to the best of our knowledge and belief at the date of publication however no guarantee is made of its accuracy. This information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any other process. Material users should review the information and recommendations in the specific context of their intended manner of handling, use, processing and storage, including an assessment of the appropriateness of the material in the user's end product, if applicable.
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