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

1.1 Product identifier

Trade name : Petram

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

Use of the Substance/Mixture : Casting Resin

1.3 Details of the supplier of the safety data sheet

Company : CFSNET LTD
CFS Works
United Down Ind. Park
St Day, Redruth,UK, TR16 5HY

Telephone : (+44)1209 821028

E-mail address : sales@cfsnet.co.uk

1.4 Emergency telephone number

(+44)1209 821028

SECTION 2: Hazards identification

2.1 Classification of the substance or mixture

Classification (REGULATION (EC) No 1272/2008)

Skin irritation , Category 2	H315: Causes skin irritation.
Eye irritation , Category 2	H319: Causes serious eye irritation.
Skin sensitisation , Category 1	H317: May cause an allergic skin reaction.
Chronic aquatic toxicity , Category 2	H411: Toxic to aquatic life with long lasting effects.

2.2 Label elements

Labelling (REGULATION (EC) No 1272/2008)

Hazard pictograms :

Signal word : Warning

Hazard statements : H315 Causes skin irritation.
H317 May cause an allergic skin reaction.
H319 Causes serious eye irritation.

		H411	Toxic to aquatic life with long lasting effects.
Precautionary statements	:	**Prevention:**	
		P261	Avoid breathing dust/ fume/ gas/ mist/ vapours/ spray.
		P273	Avoid release to the environment.
		P280	Wear eye protection/ face protection.
		P280	Wear protective gloves.
		Response:	
		P333 + P313	If skin irritation or rash occurs: Get medical advice/ attention.
		P337 + P313	If eye irritation persists: Get medical advice/ attention.

Hazardous components which must be listed on the label:

reaction product: bisphenol-A-(epichlorhydrin); epoxy resin (number average molecular weight =< 700)

1,3-Propanediol, 2-ethyl-2-(hydroxymethyl)-, polymer with (chloromethyl)oxirane

bisphenol-F-epichlorohydrin resin, MM=<700

oxirane, mono[(C12-14-alkyloxy)methyl]derivs

2.3 Other hazards

This substance/mixture contains no components considered to be either persistent, bioaccumulative and toxic (PBT), or very persistent and very bioaccumulative (vPvB) at levels of 0.1% or higher.

SECTION 3: Composition/information on ingredients

3.2 Mixtures

Chemical nature : Modified epoxy resin

Hazardous components

Chemical Name	CAS-No. EC-No. Registration number	Classification (REGULATION (EC) No 1272/2008)	Concentration (%)
reaction product: bisphenol-A-(epichlorhydrin); epoxy resin (number average molecular weight =< 700)	25068-38-6 01-2119456619-26	Eye Irrit.2; H319 Skin Irrit.2; H315 Skin Sens.1; H317 Aquatic Chronic2; H411	>= 50 - <= 100
1,3-Propanediol, 2-ethyl-2-(hydroxymethyl)-, polymer with (chloromethyl)oxirane	30499-70-8	Skin Irrit.2; H315 Eye Irrit.2; H319 Skin Sens.1; H317	>= 12,5 - < 20
bisphenol-F-epichlorohydrin resin, MM=<700	9003-36-5	Skin Irrit.2; H315 Eye Irrit.2; H319 Skin Sens.1; H317 Aquatic Chronic2;	>= 10 - < 12,5

		H411	
oxirane, mono[(C12-14-alkyloxy)methyl]derivs	Not Assigned 271-846-8 01-2119485289-22	Skin Irrit.2; H315 Skin Sens.1; H317	>= 3 - < 5

For explanation of abbreviations see section 16.

SECTION 4: First aid measures

4.1 Description of first aid measures

General advice : Keep warm and in a quiet place.
Show this safety data sheet to the doctor in attendance.
Take off all contaminated clothing immediately.

If inhaled : Move to fresh air.
Keep patient warm and at rest.
If unconscious place in recovery position and seek medical advice.
If symptoms persist, call a physician.
If breathing is irregular or stopped, administer artificial respiration.

In case of skin contact : Wash off immediately with soap and plenty of water.
Do NOT use solvents or thinners.
If on clothes, remove clothes.
If skin irritation persists, call a physician.

In case of eye contact : Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes.
If eye irritation persists, consult a specialist.
If easy to do, remove contact lens, if worn.

If swallowed : Keep at rest.
Do not induce vomiting without medical advice.
Keep respiratory tract clear.
If symptoms persist, call a physician.

4.2 Most important symptoms and effects, both acute and delayed

Symptoms : irritant effects
Redness
sensitising effects

4.3 Indication of any immediate medical attention and special treatment needed

Treatment : The first aid procedure should be established in consultation with the doctor responsible for industrial medicine.

SECTION 5: Firefighting measures

5.1 Extinguishing media

Suitable extinguishing media	:	Foam Sand Carbon dioxide (CO2) Water mist
Unsuitable extinguishing media	:	Water spray jet

5.2 Special hazards arising from the substance or mixture

Specific hazards during firefighting	:	The pressure in sealed containers can increase under the influence of heat. Cool closed containers exposed to fire with water spray.

5.3 Advice for firefighters

Special protective equipment for firefighters	:	In the event of fire, wear self-contained breathing apparatus. Use personal protective equipment.
Further information	:	In the event of fire and/or explosion do not breathe fumes. Use extinguishing measures that are appropriate to local circumstances and the surrounding environment. Immediately evacuate personnel to safe areas. Prevent fire extinguishing water from contaminating surface water or the ground water system. Fire residues and contaminated fire extinguishing water must be disposed of in accordance with local regulations.

SECTION 6: Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures

Personal precautions	:	Refer to protective measures listed in sections 7 and 8. Evacuate personnel to safe areas. Use personal protective equipment. Ensure adequate ventilation. Inform the responsible authorities in case of gas leakage, or of entry into waterways, soil or drains.

6.2 Environmental precautions

Environmental precautions	:	Do not allow uncontrolled discharge of product into the environment. Try to prevent the material from entering drains or water courses. Local authorities should be advised if significant spillages cannot be contained.

6.3 Methods and material for containment and cleaning up

Methods for cleaning up	:	Soak up with inert absorbent material (e.g. sand, silica gel,

acid binder, universal binder, sawdust).
Contain spillage, and then collect with non-combustible absorbent material, (e.g. sand, earth, diatomaceous earth, vermiculite) and place in container for disposal according to local / national regulations (see section 13).
Pick up and transfer to properly labelled containers.

6.4 Reference to other sections

For personal protection see section 8.

SECTION 7: Handling and storage

7.1 Precautions for safe handling

Advice on safe handling	:	Provide sufficient air exchange and/or exhaust in work rooms. Avoid inhalation, ingestion and contact with skin and eyes. Wear personal protective equipment. Persons with a history of skin sensitisation problems or asthma, allergies, chronic or recurrent respiratory disease should not be employed in any process in which this mixture is being used.
Advice on protection against fire and explosion	:	Keep away from open flames, hot surfaces and sources of ignition.
Hygiene measures	:	Provide adequate ventilation. Wash hands and face before breaks and immediately after handling the product.

7.2 Conditions for safe storage, including any incompatibilities

Requirements for storage areas and containers	:	Keep containers tightly closed in a dry, cool and well-ventilated place. Keep in properly labelled containers.
Advice on common storage	:	Keep away from oxidizing agents, strongly acid or alkaline materials and amines. Keep product and empty container away from heat and sources of ignition. Keep away from food and drink.
Other data	:	Stable at normal ambient temperature and pressure.

7.3 Specific end use(s)

Specific use(s)	:	Consult the technical guidelines for the use of this substance/mixture.

SECTION 8: Exposure controls/personal protection

8.1 Control parameters

Contains no substances with occupational exposure limit values.

Derived No Effect Level (DNEL) according to Regulation (EC) No. 1907/2006:

reaction product: bisphenol-A-	:	End Use: Workers

(epichlorhydrin); epoxy resin (number average molecular weight =< 700)		Exposure routes: Skin contact Potential health effects: Acute systemic effects, Long-term systemic effects Value: 8,33 mg/kg End Use: Workers Exposure routes: Inhalation Potential health effects: Acute systemic effects, Long-term local effects Value: 12,25 mg/m3 End Use: Consumers Exposure routes: Skin contact Potential health effects: Acute systemic effects, Long-term systemic effects Value: 3,571 mg/kg End Use: Consumers Exposure routes: Ingestion Potential health effects: Acute systemic effects, Long-term systemic effects Value: 0,75 mg/kg
oxirane, mono[(C12-14-alkyloxy)methyl]derivs	:	End Use: Workers Exposure routes: Skin contact Potential health effects: Long-term systemic effects Value: 3,9 mg/kg End Use: Workers Exposure routes: Inhalation Potential health effects: Long-term systemic effects Value: 13,8 mg/m3

Predicted No Effect Concentration (PNEC) according to Regulation (EC) No. 1907/2006:

reaction product: bisphenol-A-(epichlorhydrin); epoxy resin (number average molecular weight =< 700)	:	Fresh water Value: 0,006 mg/l Marine water Value: 0,0006 mg/l Intermittent releases Value: 0,018 mg/l Sewage treatment plant Value: 10 mg/l Fresh water sediment Value: 0,996 mg/kg Marine sediment Value: 0,0996 mg/kg Soil Value: 0,196 mg/kg
oxirane, mono[(C12-14-alkyloxy)methyl]derivs	:	Sewage treatment plant Value: 10 mg/l Fresh water Value: 0,0072 mg/l Marine water Value: 0,00072 mg/l Fresh water sediment Value: 66,77 mg/kg Marine sediment Value: 6,677 mg/kg Soil

Value: 80,12 mg/kg

8.2 Exposure controls

Engineering measures

Effective exhaust ventilation system
effective ventilation in all processing areas

Personal protective equipment

Eye protection	:	Do not wear contact lenses. Safety glasses with side-shields conforming to EN166 Ensure that eyewash stations and safety showers are close to the workstation location.
Hand protection Material	:	Chemical resistant gloves made of butyl rubber or nitrile rubber category III according to EN 374.
Skin and body protection	:	Protective suit
Respiratory protection	:	Use respiratory protection unless adequate local exhaust ventilation is provided or exposure assessment demonstrates that exposures are within recommended exposure guidelines. In the case of vapour formation use a respirator with an approved filter. Respirator with a vapour filter (EN 141) Apply technical measures to comply with the occupational exposure limits. This should be achieved by a good general extraction and -if practically feasible- by the use of a local exhaust ventilation.
Protective measures	:	Avoid contact with skin. Wear suitable protective equipment.

SECTION 9: Physical and chemical properties

9.1 Information on basic physical and chemical properties

Appearance	:	liquid
Colour	:	light yellow
Odour	:	slight
Odour Threshold	:	not determined
pH	:	not determined
Melting point/freezing point	:	Not applicable
Boiling point/boiling range	:	> 200 °C
Flash point	:	150 °C
Evaporation rate	:	not determined

Upper explosion limit	:	Not applicable
Lower explosion limit	:	Not applicable
Vapour pressure	:	Not applicable
Relative vapour density	:	not determined
Density	:	1,15 g/cm3 (25 °C)
Bulk density	:	not determined
Solubility(ies)		
Solubility in other solvents	:	not determined
Partition coefficient: n-octanol/water	:	No data available
Auto-ignition temperature	:	Not applicable
Thermal decomposition	:	Method: No data available
Viscosity		
Viscosity, dynamic	:	1.200 - 1.800 mPa.s (25 °C)
Viscosity, kinematic	:	not determined
Explosive properties	:	Not applicable
Oxidizing properties	:	Not applicable

9.2 Other information

Surface tension	:	not determined
Sublimation point	:	Not applicable

SECTION 10: Stability and reactivity

10.1 Reactivity

Stable under recommended storage conditions.

10.2 Chemical stability

No decomposition if stored and applied as directed.

10.3 Possibility of hazardous reactions

Hazardous reactions : Reacts with the following substances:
Bases
Strong oxidizing agents

Avoid amines.

10.4 Conditions to avoid

Conditions to avoid : No decomposition if used as directed.

10.5 Incompatible materials

Materials to avoid : Incompatible with oxidizing agents.

10.6 Hazardous decomposition products

Hazardous decomposition products : This product may release the following:
Carbon monoxide, carbon dioxide and unburned hydrocarbons (smoke).

SECTION 11: Toxicological information

11.1 Information on toxicological effects

Acute toxicity

Product:

Acute oral toxicity : Remarks: No data available

Components:

reaction product: bisphenol-A-(epichlorhydrin); epoxy resin (number average molecular weight =< 700):

Acute oral toxicity : LD50 (Rat, female): > 2.000 mg/kg
Method: OECD Test Guideline 420
GLP: yes

Acute dermal toxicity : LD50 (Rat, male and female): > 2.000 mg/kg
Method: OECD Test Guideline 402
GLP: yes

Skin corrosion/irritation

Product:

Remarks: No data available

Components:

reaction product: bisphenol-A-(epichlorhydrin); epoxy resin (number average molecular weight =< 700):
Species: Rabbit
Exposure time: 4 h
Method: OECD Test Guideline 404
Result: Skin irritation
GLP: yes

Serious eye damage/eye irritation

Product:
Remarks: No data available

Respiratory or skin sensitisation

Product:
Remarks: No data available

Components:
reaction product: bisphenol-A-(epichlorhydrin); epoxy resin (number average molecular weight =< 700):
Test Type: Mouse Local Lymph Node assay (LLNA)
Species: Mouse
Method: OECD Test Guideline 429
Result: May cause sensitisation by skin contact.
GLP: yes

Germ cell mutagenicity

Carcinogenicity

Reproductive toxicity

STOT - single exposure

Product:
Remarks: Not applicable

STOT - repeated exposure

Repeated dose toxicity

Product:
Remarks: No data available

Aspiration toxicity

Components:
reaction product: bisphenol-A-(epichlorhydrin); epoxy resin (number average molecular weight =< 700):
No aspiration toxicity classification

Further information

Product:
Remarks: No data available

SECTION 12: Ecological information

12.1 Toxicity

Product:

Toxicity to fish	:	Remarks: No data available
Toxicity to daphnia and other aquatic invertebrates	:	Remarks: No data available

Components:

reaction product: bisphenol-A-(epichlorhydrin); epoxy resin (number average molecular weight =< 700):

Toxicity to daphnia and other aquatic invertebrates	:	EC50 (Daphnia (water flea)): 1,7 mg/l Exposure time: 48 h Test Type: static test Method: OECD Test Guideline 202 GLP: yes
Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity)	:	NOEC: 0,3 mg/l Exposure time: 21 d Species: Daphnia magna (Water flea) Test Type: semi-static test Method: OECD Test Guideline 211 GLP: yes

12.2 Persistence and degradability

Product:

Biodegradability	:	Remarks: No data available

Components:

reaction product: bisphenol-A-(epichlorhydrin); epoxy resin (number average molecular weight =< 700):

Biodegradability	:	Result: Not readily biodegradable. Method: OECD Test Guideline 301F GLP: yes

12.3 Bioaccumulative potential

Product:

Bioaccumulation	:	Remarks: No data available

Components:

reaction product: bisphenol-A-(epichlorhydrin); epoxy resin (number average molecular weight =< 700):

Partition coefficient: n-octanol/water	:	log Pow: 3,242 (25 °C) pH: 7,1 Method: OECD Test Guideline 117 GLP: yes

12.4 Mobility in soil

No data available

12.5 Results of PBT and vPvB assessment

Product:

Assessment	:	This substance/mixture contains no components considered to be either persistent, bioaccumulative and toxic (PBT), or very persistent and very bioaccumulative (vPvB) at levels of 0.1% or higher..

12.6 Other adverse effects

Product:

Additional ecological information	:	Remarks: An environmental hazard cannot be excluded in the event of unprofessional handling or disposal.

SECTION 13: Disposal considerations

13.1 Waste treatment methods

Product	:	In accordance with local and national regulations. Container hazardous when empty. Do not dispose of with domestic refuse. Do not mix waste streams during collection.
Contaminated packaging	:	Empty containers should be taken to an approved waste handling site for recycling or disposal.

SECTION 14: Transport information

14.1 UN number

ADR/RID/ADN	:	UN 3082
IMDG	:	UN 3082
IATA	:	UN 3082

14.2 UN proper shipping name

ADR/RID/ADN	:	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (Epoxy resin)
IMDG	:	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (Epoxy resin)
IATA	:	Environmentally hazardous substance, liquid, n.o.s. (Epoxy resin)

14.3 Transport hazard class(es)

ADR/RID/ADN	:	9
IMDG	:	9
IATA	:	9

14.4 Packing group

ADR/RID/ADN

Packing group	:	III
Classification Code	:	M6
Hazard Identification Number	:	90
Labels	:	9
Remarks	:	ADR: These substances when carried in single or combination packagings containing a net quantity per single or inner packaging of 5 l or less for liquids or having a net mass per single or inner packaging of 5 kg or less for solids, are not subject to any other provisions of ADR provided the packagings meet the general provisions of 4.1.1.1, 4.1.1.2 and 4.1.1.4 to 4.1.1.8.

IMDG

Packing group	:	III
Labels	:	9
EmS Code	:	F-A, S-F
Remarks	:	IMDG: Marine pollutants packaged in single or combination packagings containing a net quantity per single or inner packaging of 5 l or less for liquids or having a net mass per single or inner packaging of 5 kg or less for solids are not subject to any other provisions of this Code relevant to marine pollutants provided the packagings meet the general provisions of 4.1.1.1, 4.1.1.2 and 4.1.1.4 to 4.1.1.8. In thecase of marine pollutants also meeting the criteria for inclusion in another hazard class all provisions of this Code relevant to any additional hazards continue to apply.

IATA

Packing instruction (cargo aircraft)	:	964
Packing instruction (passenger aircraft)	:	964
Packing group	:	III
Labels	:	9
Remarks	:	IATA: These substances when transported in single or combination packagings containing a net quantity per single or inner packaging of 5 L or less far liquids or having a net mass of 5 kg or less for solids, are not subject to any other provisions of these Regulations provided the packagings meet the general provisions of 5.0.2.4.1, 5.0.2.6.1.1 and 5.0.2.8.

14.5 Environmental hazards

ADR/RID/ADN

Environmentally hazardous : yes

IMDG
Marine pollutant : yes

14.6 Special precautions for user

Not applicable

14.7 Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code

Not applicable for product as supplied.

SECTION 15: Regulatory information

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

REACH - Restrictions on the manufacture, placing on the market and use of certain dangerous substances, preparations and articles (Annex XVII) : Not applicable

REACH - Candidate List of Substances of Very High Concern for Authorisation (Article 59). : This product does not contain substances of very high concern (Regulation (EC) No 1907/2006 (REACH), Article 57).

REACH - List of substances subject to authorisation (Annex XIV) : Not applicable

Seveso III: Directive 2012/18/EU of the European Parliament and of the Council on the control of major-accident hazards involving dangerous substances.

		Quantity 1	Quantity 2
E2	ENVIRONMENTAL HAZARDS	200 t	500 t

15.2 Chemical Safety Assessment

Not applicable

SECTION 16: Other information

Full text of H-Statements

H315 : Causes skin irritation.
H317 : May cause an allergic skin reaction.
H319 : Causes serious eye irritation.
H411 : Toxic to aquatic life with long lasting effects.

Full text of other abbreviations

Aquatic Chronic : Chronic aquatic toxicity
Eye Irrit. : Eye irritation
Skin Irrit. : Skin irritation
Skin Sens. : Skin sensitisation

Further information

Training advice	:	Provide adequate information, instruction and training for operators.

The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The 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 process, unless specified in the text.