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

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Trade Name:	IBS Activator
Product Description:	Activator for IBS Compound
Supplier:	KCI Energy Services Ltd
Address:	Units 6 & 7, 1 Kirkhill Place, Dyce, Aberdeen, AB21 0GU, UK
Name of Contact:	Roy MacKenzie
Emergency Tel No (UK):	+44 (0) 1224 255480 (only available during office hours)
Emergency Tel No (Europe):	+44 (0) 7876 656870 (only available during office hours)
Use of Substance/Preparation:	SU2b: Offshore Industries PC1: Sealants PC32: Polymer preparations and compounds

SECTION 2: HAZARDS IDENTIFICATION

2.1. Classification of the Mixture

2.1.1. Classification according to Regulation (EC) No 1272/2008 [CLP]

- Skin Corrosive 1B: H314

2.1.2. Classification according to Directive 1999/45/EC

- Corrosive; C; R34

2.2. Label Elements

2.2.1. Label Elements according to Regulation (EC) No 1272/2008 [CLP]

Hazard Pictograms

GHS05: Corrosion

Signal Word: Danger

Hazard Statements:
H314: Causes severe skin burns and eye damage.

Precautionary Statements:
P262: Do not get in eyes, on skin, or on clothing.
P280: Wear protective gloves/protective clothing/eye protection/face protection.
P305+P351+P338: IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P301+P330+P331: IF SWALLOWED: rinse mouth. Do NOT induce vomiting.
P303+P361+P353: IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower.
P403+P235: Store in a well-ventilated place. Keep cool.

2.2.2. Label Elements according to Directive 1999/45/EC

Hazard Pictograms

Corrosive

Signal Word: Harmful

Risk Phrases:
R34: Causes burns

Safety Phrases:
S26: in case of contact with eyes, rinse immediately with plenty of water and seek medical advice
S28.1: After contact with skin, wash immediately with plenty of water

S36/39: wear suitable protective clothing and eye/face protection
S45: in case of accident or if you feel unwell, seek medical advice immediately (show the label where possible)

2.3. Other Hazards
PBT: This substance is not defined as a PBT substance.

SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS

Name	CAS No	EC No.	Conc % (w/w)	REACH Reg. †	Classification according to 1999/45/EC	Classification according to Regulation (EC) No 1272/2008
Phosphoric acid, 2-ethylhexyl ester	12645-31-7	235-741-0	100	05-2114102603-66-0000	C; R34	Skin Corr. 1B; H314

† *- Pre-registration number, registration by supplier due in 2018.*

SECTION 4: FIRST AID MEASURES

4.1. Description of First Aid Measures

Skin contact: Immediately wash with plenty of soap and water. If symptoms develop, seek medical advice.

Eye contact: Immediately flush eye with water for at least 15 minutes while holding eyelids open. Get medical attention. Eye bathing equipment should be available on the premises.

Ingestion: If conscious, washout mouth and give water to drink. Get medical attention.

Inhalation: Remove to fresh air, treat symptomatically. If symptoms develop, seek medical advice.

4.2. Most important symptoms and effects, both acute and delayed

Skin contact: Corrosivity

Eye contact: Corrosivity

Ingestion: Corrosivity

Inhalation: Corrosivity

SECTION 5: FIRE FIGHTING MEASURES

5.1. Extinguishing Media

Extinguishing Media: Extinguishing Media: Foam, Carbon dioxide, Dry powder, Other extinguishing agent suitable for Class B fires. For large fires, use water spray or fog, thoroughly drenching the burning material. Water mist may be used to cool closed containers.
Unsuitable Extinguishing Media: Do not use water unless flooding amounts are available.

5.2. Special Hazards Arising from the Substance or Mixture

Exposure Hazards: Combustible Liquid; may form combustible mixtures at or above the flash point. Empty substance containers may contain product residue. Do not pressurize, cut, heat, weld, or expose containers to flame or other sources of ignition. May evolve oxides of carbon (CO_x) under fire conditions. May evolve oxides of phosphorus (PO_x) under fire conditions.

5.3. Advice for Firefighters

Advice for Firefighters: In case of fire, wear a full-face positive-pressure self-contained breathing apparatus and protective suit.

SECTION 6: ACCIDENTAL RELEASE MEASURES/SPILLS & LEAKS

6.1. Personal Precautions, Protective Equipment and Emergency Procedures

Personal Precautions: Restrict access to area as appropriate until clean-up operations are complete. Use personal protective equipment. Stop or reduce any leaks if it is safe to do so. Ventilate spill area if possible. Remove sources of ignition. Ensure clean up is conducted by trained personnel only. Do not touch spilled material. Have emergency equipment (for fires, spills, leaks, etc.) readily available. Notify appropriate government, occupational health and safety and environmental authorities.

6.2. Environmental Precautions

Environmental Precautions: Prevent material from entering sewers or waterways.

6.3. Methods and Material for Containment and Cleaning Up

Clean-up Procedures: Small Spills: Soak up spill with absorbent material. Place residues in a suitable, covered, properly labelled container. Wash affected area.
Large Spills: Contain liquid using absorbent material, by digging trenches or by diking. Reclaim into recovery or salvage drums or tank truck for proper disposal. Clean contaminated surfaces with water or

aqueous cleaning agents. Contact an approved waste hauler for disposal of contaminated recovered material. Dispose of material in compliance with regulations.

SECTION 7: HANDLING AND STORAGE

7.1. Precautions for Safe Handling

Handling Requirements: Do not get in eyes, on skin, on clothing. Do not take internally. Use with adequate ventilation. Do not breathe aerosols. Keep the containers closed when not in use. Have emergency equipment (for fires, spills, leaks, etc.) readily available. Ensure all containers are labelled. Do not use, store, spill or pour near heat, sparks or open flame.

7.2. Conditions for Safe Storage Including any Incompatibilities

Storage Conditions: Store in suitable labelled containers. Store the containers tightly closed. Store away from heat and sources of ignition. Have appropriate fire extinguishers available in and near the storage area. Connections must be grounded to avoid electrical charges. Store separately from oxidisers.

Suitable Packaging: Carbon Steel C1018, Stainless Steel 304, Stainless Steel 316L, Surface-modified HDPE (high density polyethylene), Perfluoroelastomer, TFE, FEP (encapsulated), Compatibility with Plastic Materials can vary; it is recommended that compatibility is tested prior to use.
Unsuitable Packaging: Neoprene, Nitrile, EPDM.

7.3. Specific End Use(s)

Recommendations: SU2b: Offshore Industries
PC1: Sealants
PC32: Polymer preparations and compounds

SECTION 8: EXPOSURE CONTROLS & PERSONAL PROTECTION

8.1. Control Parameters

Occupational Exposure Limit Values

This product does not contain any substances with established exposure limit values.

Derived No-Effect Levels and Predicted No-Effect Concentrations

Phosphoric acid, 2-ethylhexyl ester (CAS No. 12645-31-7)

Worker DNELs				
Route of Exposure	**Acute Effects Local †**	**Acute Effects Systemic †**	**Chronic Effects Local †**	**Chronic Effects Systemic**
Inhalation	-	-	-	36.73 mg/m^3
Dermal	-	-	-	10.42 mg/kg bw/d

† *The substance is corrosive with no threshold of effect; therefore a qualitative approach to risk management is adopted.*

Environmental PNECs	**PNEC**
PNEC aqua (freshwater)	0.049 mg/L
PNEC aqua (marine)	0.0015 mg/L
PNEC STP	15 mg/L
PNEC Sediment (freshwater)	-
PNEC Sediment (marine)	0.35 mg/kg
PNEC Soil	-

8.2. Exposure Controls

Appropriate Engineering Controls: General ventilation is recommended. The use of local exhaust ventilation is recommended to control emissions near the source. Laboratory samples should be handled in a fume hood. Provide mechanical ventilation of confined spaces.

Personal Protection Equipment

Eye and Face Protection: When handling this substance, the use of face-shield and splash chemical goggles is recommended. The applicable European standard can be found in EN 166.
Keep an eye wash fountain available.

Skin Protection: When handling this substance, the use of chemical gauntlets is recommended. The choice of work

	glove depends on work conditions and what chemicals are handled, for light handling conditions consider using gloves made from PVC. Gloves should be replaced immediately if signs of degradation are observed. The applicable European standard can be found in EN 374. When handling this substance, the use of overalls, a chemical resistant apron and rubber boots is recommended. The applicable European standard can be found in EN ISO 20345. Keep a safety shower available. If clothing is contaminated, remove clothing and thoroughly wash the affected area. Launder contaminated clothing before reuse.
Respiratory Protection:	At ambient temperature none needed for vapour. If the substance is heated or if aerosol generation is likely, use of a half face filter mask. A suitable filter material depends on the amount and type of chemicals being handled. Consider the use of filter type: A-P. The applicable European standard can be found in EN 140, EN 137, EN 143 and EN 14387. In event of emergency or planned entry into unknown concentrations a positive pressure, full-face piece SCBA should be used. If respiratory protection is required, institute a complete respiratory protection program including selection, fit testing, training, maintenance and inspection.
Thermal Hazards:	No known thermal hazards.
Environmental Exposure Controls:	Consider the provision of containment around storage vessels.

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

Property	Phosphoric acid, 2-ethylhexyl ester
Form:	Liquid
Colour:	Transparent amber
Odour:	Slight
pH:	2.5
Boiling Point:	240 °C (101.3 kPa)
Flash Point:	44 °C (101.3 kPa)
Flammability:	Non flammable
Explosive Properties:	Non explosive
Oxidising Properties:	Not oxidising
Vapour Pressure:	0.085 Pa (25 °C)
Relative Density:	1.01 (20°C)
Water Solubility:	5.95 mg/L (20 °C)
Log Pow	2.18
Viscosity:	206 mm²/s (static) (20°C)
Vapour Density:	-
Evaporation Rate:	-
Other Information:	-

Data obtained from the ECHA Substance Information database (http://echa.europa.eu)

SECTION 10: STABILITY & REACTIVITY

Stability:	Stable under normal conditions. Thermal decomposition can occur under certain processing conditions.
Conditions to avoid:	Heat and sources of ignition including static discharges.
Materials to avoid:	Contact with strong oxidizers (e.g. chlorine, peroxides, chromates, nitric acid, perchlorate, concentrated oxygen, permanganate) may generate heat, fires, explosions and/or toxic vapours.
Hazardous decomposition products:	Under fire conditions: Oxides of carbon, Oxides of phosphorus

SECTION 11 TOXICOLOGICAL INFORMATION

Phosphoric acid, 2-ethylhexyl ester (CAS No. 12645-31-7)

Acute Toxicity	
Oral (OECD 423)	LD50 = 2,500 mg/kg bw

Skin Corrosion/Irritation	
Skin irritation (EU B.4.)	Corrosive
Serious Eye Damage/Irritation	
In vivo Eye Irritation	Corrosive (study not required as the substance is corrosive to skin)
Germ Cell Mutagenicity	
In vitro Bacterial Reverse Mutation Assay (OECD 471)	Negative
In vitro Mammalian Cell Gene Mutation Test (OECD 476)	Negative
In vitro Mammalian Chromosome Aberration Test (OECD 473)	Negative
Repeated Dose Toxicity	
Combined Repeated Dose Toxicity Study with the Reproduction / Developmental Toxicity Screening Test (OECD 422)	NOAEL = 250 mg/kg bw/day
Repeated Dose 90-Day Oral Toxicity in Rodents (OECD 408)	NOAEL = 250 mg/kg bw/day
Reproductive Toxicity	
Combined Repeated Dose Toxicity Study with the Reproduction / Developmental Toxicity Screening Test (OECD 422)	NOAEL = 250 mg/kg bw/day (reproductive/developmental)

Data obtained from the ECHA Substance Information database (http://echa.europa.eu)

SECTION 12: ECOLOGICAL INFORMATION

2-butoxyethanol (CAS No. 111-76-2)

Toxicity	
Acute Toxicity to Fish (OECD 203)	96h LL50 = >100 mg/L
Acute Toxicity to *Daphnia* (OECD 202)	48h EL50 = >100 mg/L
Toxicity to Algae/Aquatic Plants (OECD 201)	72h EL50 (growth rate) = 49 mg/L
Chronic Toxicity to Fish (OECD 204)	-
Chronic Toxicity to Crustacea (OECD 211)	-
Chronic Toxicity to Algae/Aquatic Plants (OECD 201)	72h NOELr (growth rate) = 25 mg/L
Persistence and Degradability	
Abiotic Degradation	Hydrolytic half-life = >1 year (25°C, pH = 4, 7, 9)
Physical- and Photo-chemical Elimination	-
Biodegradation (OECD 301B)	Readily biodegradable (but failing 10-day window)
Bioaccumulation	
Partition Coefficient n-octanol/water (Log Kow)	2.18
Bioconcentration Factor (BCF)	-
Mobility in Soil	
Known or Predicted Distribution to Environmental Compartments	-
Surface Tension (ring method)	44.4 mN/m (20°C; 1.01 g/L)
Adsorption/Desorption	Log Koc at 20°C = 1.25
Results of PBT and vP/vB Assessment	
Substance does not meet the screening criteria for persistency, bioaccumulation nor toxicity so is neither PBT nor vPvB.	
Other Adverse Effects	
No further information available.	

Additional Information

No further information available.

Data obtained from the ECHA Substance Information database (http://echa.europa.eu)

SECTION 13: DISPOSAL CONSIDERATIONS

Product: Use only authorized contractors. Ensure compliance with EC, national and local regulations. Dispose of wastes in an approved incinerator or waste treatment/disposal site, in accordance with all applicable regulations. Do not dispose of wastes in local sewer or with normal garbage. This substance is ashless and can be burned directly in appropriate equipment. Any chemical waste is a potential environmental pollutant and is NOT suitable for disposal via ground, municipal sewers, drains, natural streams or rivers.

Packaging: Empty drums should be taken for recycling, recovery, or disposal through a suitably qualified or licensed contractor.

SECTION 14: TRANSPORT & LABELLING INFORMATION

Road/Rail (ADR/RID):
UN Number: 2922
Proper Shipping Name and Description: Corrosive Liquid, Toxic, NOS
Class: 8
Classification Code: CF1
Packaging Group: II
Label: 8

Sea Transport (IMDG):
UN Number: 2922
Proper Shipping Name and Description: Corrosive Liquid, Toxic, NOS
Class: 8
Packaging Group: II
EmS Number: S-C
Labels: 8
Marine Pollutant: No

Air Transport (ICAO/IATA):
UN Number: 2922
Proper Shipping Name and Description: Corrosive Liquid, Toxic, NOS
Class: 8
Packaging Group: II
Labels: 8

SECTION 15: REGULATORY INFORMATION

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

This safety data sheet is compiled in accordance with Regulation (EC) No 1907/2006 (REACH), Directive 67/458/EEC (DSD), Directive 1999/45/EC (DPD) and Regulation (EC) No 1272/2008 (CLP)

No further Regulatory information is necessary for this mixture.

15.2. Chemical Safety Assessment

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

SECTION 16: OTHER INFORMATION

The data contained herein does not constitute the user's own assessment or workplace risk as required by other health and safety legislation (e.g. COSHH 1988). The data does not signify any warranty with regard to the product's properties.