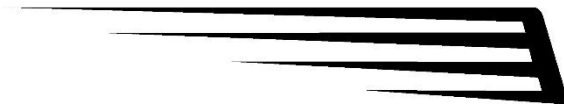




***Rathlin
Energy***



CHEMICAL INVENTORY

RE-EPRA-WNA-CI-008

Revision 0

July 2024

WNA Permit Variation

DOCUMENT TITLE	DOCUMENT REFERENCE
KEY APPLICATION DOCUMENTS	
Chemical Inventory	RE-EPRA-WNA-CI-008

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Product Name	UN No	Transport Class	Hazardous Chemical Composition (SDS Section 3)	Weight (%) If Classified	CAS Number	Product Hazard Statement	Results of PBT Assessment	Comments
Calcium Chloride	N/A	N/A	Calcium Chloride	60-100	10043-52-4	H319	Not classified as PBT/vPvB by current EU criteria	Weighting agent
Calcium Chloride Brine	N/A	N/A	Calcium Chloride	30-60	10043-52-4	H319	Not classified as PBT/vPvB by current EU criteria	Completion Brine
Caustic Soda	1823	8	Sodium Hydroxide	60-100	1310-73-2	H290 H314	Not classified as PBT/vPvB by current EU criteria	pH modifier
Citric Acid	N/A	N/A	Citric Acid, Monohydrate	100	5949-29-1	H319	Not classified as PBT/vPvB by current EU criteria	pH modifier
Conqor 404NS	N/A	N/A	Salts of Phosphate Esters in Water	60-100	-	Not Classified	Not classified as PBT/vPvB by current EU criteria	Corrosion Inhibitor
Defoam Plus NS	N/A	N/A	No Hazardous Materials	-	-	Not Classified	Not classified as PBT/vPvB by current EU criteria	De-Foamer
Drilling Starch	N/A	N/A	Cold Water Soluble Modified Potato Starch	-	9005-84-9	Not Classified	Not classified as PBT/vPvB by current EU criteria	Fluid Loss Mitigation
Duo-Vis	N/A	N/A	Glyoxal	<1	107-22-2	Not Classified	Not classified as PBT/vPvB by current EU criteria	Viscosifier
Dynared (All Grades)	N/A	N/A	No Hazardous Materials	-	-	Not Classified	Not classified as PBT/vPvB by current EU criteria	Loss Circulation Material
Form-A-Blok	N/A	N/A	Wollastonite (Ca(SiO3))	30-60	13983-17-0	Not Classified	Not classified as PBT/vPvB by current EU criteria	Loss Circulation Material
			Cellulose	10-30	9004-34-6			
			Kaolin	5-10	1332-58-7			
			Polyvinyl Alcohol	5-10	9002-89-5			
G-Seal Plus	N/A	N/A	Graphite (Natural)	5-10	7782-42-5	Not Classified	Not classified as PBT/vPvB by current EU criteria	Loss Circulation Material
			Crystalline Silica (Impurity)	<1	14808-60-7			
Kwik-Seal NS Regular	N/A	N/A	Wood, Wood Fibres, Ground Hulls or Shells	-	-	Not Classified	Not classified as PBT/vPvB by current EU criteria	Loss Circulation Material
			Mica	-	12001-26-2			
Lime	N/A	N/A	Calcium Hydroxide	60-100	1305-62-0	H315, H318, H335	Not classified as PBT/vPvB by current EU criteria.	pH modifier
M-I Gel	N/A	N/A	Bentonite	60-100	1302-78-9	Not Classified	Not classified as PBT/vPvB by current EU criteria	Viscosifier
			Crystalline Silica (Impurity)	1-5	14808-60-7			
M-I Pac (All Grades)	N/A	N/A	No Hazardous Materials	-	-	Not Classified	Not classified as PBT/vPvB by current EU criteria	Fluid Loss Mitigation & Viscosifier
M-I Wate (All Grades)	N/A	N/A	Crystalline Silica (Impurity)	1-5	14808-60-7	Not Classified	Not classified as PBT/vPvB by current EU criteria	Weighting Agent
Nuosept 78	2810	6.1	2,2',2''-(Hexahydro-1,3, 5-triazine-1,3,5-triyl) Triethanol	78	4719-04-4	H302, H317, H319, H330	Not classified as PBT/vPvB by current EU criteria	Preservative
Nut Shells	N/A	N/A	Crystalline Silica (Impurity)	<1	14808-60-7	Not Classified	Not classified as PBT/vPvB by current EU criteria	Loss Circulation Material
PDV Salt	N/A	N/A	Sodium Chloride	100	007647-14-5	Not Classified	Not classified as PBT/vPvB by current EU criteria	Drilling/Completion Fluid Additive
Polypac(All Grades)	N/A	N/A	Polyanionic Cellulose	60-100	-	Not Classified	Not classified as PBT/vPvB by current EU criteria.	Fluid Loss Mitigation & Viscosifier
Potassium Chloride	N/A	N/A	Potassium Chloride	60-100	7447-40-7	Not Classified	Not classified as PBT/vPvB by current EU criteria.	Drilling/Completion Fluid Additive
Potassium Chloride Brine	N/A	N/A	Potassium Chloride	5-30	7447-40-7	Not Classified	Not classified as PBT/vPvB by current EU criteria	Drilling/Completion Fluid Additive
Pure Bore	N/A	N/A	No Hazardous Materials	-	-	Not Classified	Not classified as PBT/vPvB by current EU criteria	Biodegradable Drilling Fluid
Safe Carb (All Grades)	N/A	N/A	Calcium Carbonate	60-100	-	Not Classified	Not classified as PBT/vPvB by current EU criteria	Lost Circulation Material. Weighting agent. Bridging Material
			Crystalline Silica (Impurity)	<1	14808-60-7			
Safe-Cide	2810	6.1	2,2',2''-(Hexahydro-1,3, 5-triazine-1,3,5-triyl) Triethanol	60-100	4719-04-4	H302 H315 H317 H318 H330 H372	Not classified as PBT/vPvB by current EU criteria.	Biocide
			Tetrasodium Ethylenediaminetetraacetiv	1-5	64-02-8			
			2-aminoethanol	1-5	141-43-5			
Safe Cor*	N/A	N/A	Ethanol, 2,2-oxybis-, Reaction Products with Ammonia, Morpholine Derivatives Residues	30-60	68909-77-3	H319, H412	Not classified as PBT/vPvB by current EU criteria	Corrosion inhibitor
Safe-Cor* EN	N/A	N/A	Formaldehyde, Reaction Products with Ethanolamine	10-30	85186-27-2	H302, H315, H317, H319	Not classified as PBT/vPvB by current EU criteria	Corrosion inhibitor
Safe Scav* CA	N/A	N/A	No Hazardous Materials	-	-	Not Classified	Not classified as PBT/vPvB by current EU criteria	Oxygen Scavenger
Safe-Scav NA	N/A	N/A	Ammonium Bisulphate	30-60	10192-30-0	H319 EUH031	Not classified as PBT/vPvB by current EU criteria	Oxygen Scavenger
			Sulphur Dioxide	<1	7446-09-5			
Safe Scav* HSN	2810	6.1	Hexahydro-1,3,5-tris(2-hydroxyethyl)-sym-triazine	30-60	4719-04-4	H302, H317, H319, H330, H372	Not classified as PBT/vPvB by current EU criteria	Hydrogen Sulphide Scavenger
			Ethanolamine (Impurity)	<2	141-43-5			
			Formaldehyde (Impurity)	<1	50-00-0			
SAPP	N/A	N/A	Disodium Dihydrogen Diphosphate	60-100	7758-16-9	H319	Not classified as PBT/vPvB by current EU criteria	SAPP dispersant. Thinner.
SI-414N	N/A	N/A	Sodium Allylsulfonate Copolymer	60-100	68715-83-3	Not Classified	Not classified as PBT/vPvB by current EU criteria	Scale Inhibitor
Soda Ash	N/A	N/A	Sodium Carbonate	60-100	497-19-8	H319	Not classified as PBT/vPvB by current EU criteria	pH Modifier
Sodium Bicarbonate	N/A	N/A	Sodium Bicarbonate	60-100	144-55-8	Not Classified	Not classified as PBT/vPvB by current EU criteria	Drilling/Completion Fluid Additive
Sodium Chloride	N/A	N/A	Sodium Chloride	60-100	7647-14-5	Not Classified	Not classified as PBT/vPvB by current EU criteria	Drilling/Completion Fluid Additive
Sodium Chloride Brine	N/A	N/A	Sodium Chloride	30-60	7647-14-5	Not Classified	Not classified as PBT/vPvB by current EU criteria	Weighting agent. Completion brine
Sugar	N/A	N/A	Sucrose	60-100	57-50-1	Not Classified	Not classified as PBT/vPvB by current EU criteria	Additives
			Crystalline Silica (Impurity)	<1	14808-60-7			

Product Name	UN No	Transport Class	Hazardous Chemical Composition (SDS Section 3)	Weight (%) If Classified	CAS Number	Product Hazard Statement	Results of PBT Assessment	Comments
Butanol	1120	3	n-Butanol	100	71-36-6	H226 H302 H315 H318 H335 H336	Not classified as PBT/vPvB by current EU criteria.	Solvent Treatment
Dissolvine StimWell DDH-P	3267	8	Diethylenetriaminepentaacetic acid, pentapotassium salt	40-50	7216-95-7	H290, H319, H332, H361d, H373	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.	Chelating Agent / Well Treatment
Hydrochloric Acid	1789	8	Hydrochloric Acid	15	7647-01-0	H290 H315 H319 H335	Not classified as PBT/vPvB by current EU criteria	Acid Wash / Squeeze
Methanol	1230	3	Methanol	100	67-56-1	H225 H301 H311 H331 H370	Not classified as PBT/vPvB by current EU criteria	Solvent Treatment
Nitrogen	1977	2	Nitrogen	100	7727-37-9	H281	Not classified as PBT/vPvB by current EU criteria	Nitrogen Lift
Potassium Chloride	N/A	N/A	Potassium Chloride	60-100	7447-40-7	Not Classified	Not classified as PBT/vPvB by current EU criteria.	Drilling/Completion Fluid Additive
PROTEKT 7 Plus	1789	8	Hydrogen Chloride	6.5-7.5	7647-01-0	H302 H314 H318 H371 H402	Not classified as PBT/vPvB by current EU criteria	Acid Wash / Squeeze
			Citric Acid	4-8	77-92-9			
			Acetic Acid	1.5-3	64-19-7			
			Tallowalkylamine Ethoxylates	0.8-1	68213-26-2			
			Formaldehyde reaction products, oleylamine	0.8-1	91728-72-3			
			Prop-2-yn-ol	0.7-1	107-19-7			
			Formaldehyde	0.02-0.05	50-00-0			
			Proprietary antifoam silicone	0.5-1	-			
Proprietary Dispersants (Protekt 318)	1-2	-						
PROTEKT-14 Acetic Acid	2790	8	Acetic Acid	10-18	64-19-7	H226 H304 H314 H318	Not classified as PBT/vPvB by current EU criteria	Acid Wash / Squeeze
			Water	75-85	7732-18-5			
			1H-Imidazole-1-ethanol, 4,5-dihydro-, 2-nortall-oil alkyl	2-4	61791-39-7			
PROTEKT 15 Plus	1789	8	Hydrogen Chloride	14-16	7647-01-0	H302 H314 H318 H371 H402	Not classified as PBT/vPvB by current EU criteria	Acid Wash / Squeeze
			Citric Acid	7-9	77-92-9			
			Acetic Acid	2-4	64-19-7			
			Tallowalkylamine Ethoxylates	1-3	68213-26-3			
			Formaldehyde reaction products, oleylamine	1-3	91728-72-3			
			Proprietary Antifoam	0.5-1	-			
			Proprietary Dispersants (Protekt 318)	1-2	-			
SMS-01	N/A	N/A	2-Butoxy ethanol	50-100	111-76-2	H332, H302, H312, H319, H316	No components within the mixture are identified as a PBT/vPvB substance.	Mutual Solvent
Sobos Gold 08	N/A	N/A	Tetrapotassium pyrophosphate (tkpp)	1-5	7320-34-5	H318	Not classified as PBT/vPvB by current EU criteria	Cleaning Additive
			Alkylpolyglucoside	5-10	132778-08-06			
Xylene	1307	3	Xylene	60-100	1330-20-7	H226 H304 H312 H315 H319 H335 H336 H360 H373	Not classified as PBT/vPvB by current EU criteria.	Solvent Treatment
			Ethyl benzene	10-30	100-41-4			
			Toluene	0.1-1	108-88-3			

Product Name	UN No	Transport Class	Hazardous Chemical Composition (SDS Section 3)	Weight %	CAS Number	Product Hazard Statements	Results of PBT/vPvB Assessment	Comments
Reservoir Stimulation - Proppant Carrier Products (Halliburton Products)								
MO-IV BREAKER	N/A	N/A	This chemical is not considered hazardous by the 2012 OSHA Hazard Communication Standard (29 CFR 1910.1200). The product contains no substances which at their given concentration, are considered to be hazardous to health.	100	N/A	N/A	Persistence : No information available. Bioaccumulation: No information available. Toxicity: The environmental impact of this product has not been fully investigated.	
MO-85M Gelling Agent	3265	8	Alkyl Esters	60-100	Proprietary	H314, H318	Persistence : No information available. Bioaccumulation: No information available. Toxicity: No information available.	
MO-86M Gelling Agent	2922	8	Ferric Sulfate	30-60	10028-22-5	H302, H315, H318	Persistence : Partial information available. Bioaccumulation: Partial information available. Toxicity: Partial information available.	
			Ethanolamine	5-10	Proprietary	H226, H302, H312, H314, H318, H331, H335, H402		
			Dibutylaminoethanol	5-10	102-81-2	H227, H302, H312, H314, H318, H335, H402		
			n-Polyethoxylated oleyl amine	1-5	26635-93-8	H302, H315, H318, H400		
			Ethoxylated alkyl amines	1-5	Proprietary	H302, H315, H318, H401, H411		
EDC 95-11	N/A	N/A	Hydrocarbons, C15-C20, nalkanes, isoalkanes, cyclics, < 0.03% aromatics	100	64742-46-7	H304	Not Classified	
EDC 99-DW	N/A	N/A	Hydrocarbons, C13-C16, nalkanes, isoalkanes, cyclics, <0.03% aromatics	100	64742-46-7	H304	Not Classified	
ESCAID 110	9003	9	Hydrocarbons, C11-C14, nalkanes, isoalkanes, cyclics, <2% aromatics	100	N/A	H227, H304, EUH066	Material does not meet the Reach Annex XIII criteria for PBT or vPvB.	
SARALINE 185V	N/A	N/A	Distillates (Fischer-Tropsch), C8-26 - Branched and Linear	≤100	848301-67-7	H304, EUH066	The substance does not fulfill all screening criteria for persistence, bioaccumulation and toxicity and hence is not considered to be PBT or vPvB.	
XP-07	N/A	N/A	Hydrocarbons, C11-C14, n-alkanes, <2% aromatics	60-100	N/A	H304, EUH066	This substance is not considered to be persistent, bioaccumulating nor toxic (PBT). This substance is not considered to be very persistent nor very bioaccumulating (vPvB).	
EDC 170 SE	N/A	N/A	Hydrocarbons, C11-C14, nalkanes, isoalkanes, cyclics, <2% aromatics	100	64742-47-8	H304, EUH066	Not Classified	
Diesel	1202	3	Fuels diesel	>90	68334-30-5	H2236, H304, H315, H332, H351, H373, H411	Anthracene is not present in this substance at greater than 0.1% (CONCAWE 2010). No other representative hydrocarbon structure were found to meet the PBT/vPvB criteria. This preparation contains no substance considered to be persistent, bioaccumulating nor toxic (PBT).	
Mesh Fracturing Sand	N/A	N/A	Quartz	60-100	14808-60-7	H373	Not classified as PBT/vPvB by current EU criteria.	