

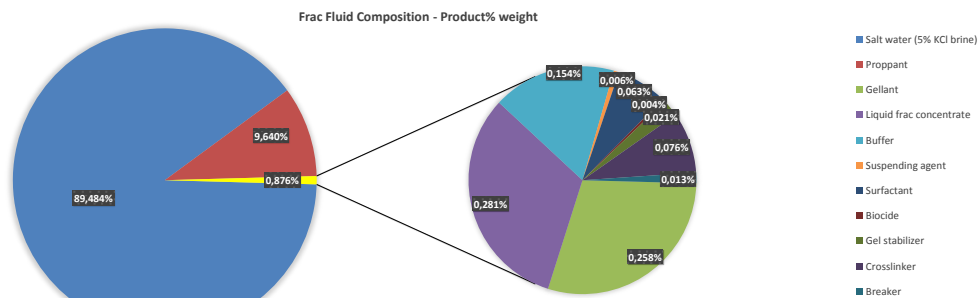
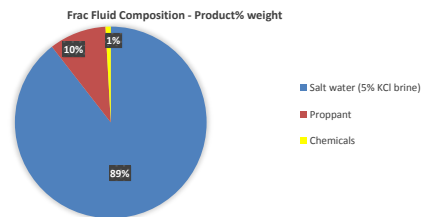
OVERVIEW USED PRODUCTS, Kielwindeweer (KWR-1), 21 Nov 2012

Final list (with used products and actual weights/percentages)

Products	Use	Product Weight (kg)	Product Weight (%)	Ingredient	Ingredient CAS number	Ingredient % *	Product Classification [#]
Salt water (5% KCl brine)	Carrier	666421,40	89,484				none
Optipro G2	Proppant	71794,00	9,640	Non-hazardous ingredients		100	none
GW-4AFG	Gellant	1922,00	0,258	Non-hazardous ingredients		100	none
BioBase 637	Liquid frac concentrate component	2089,90	0,281	Guar Gum	9000-30-0/232-536-8	100	Xn;R65,R66
BF-1	Buffer	72,00	0,010	Paraffins (petroleum), normal C5-C20	64771-72-8/265-233-4	100	none
PSA-3	Suspending Agent	48,00	0,006	Alkenes C>8	68411-00-7/270-095-3	5	none
D-4G	Surfactant	16,00	0,002	Non-hazardous ingredients		100	Xn;R22, Xi;R41
XC82448	Biocide	29,40	0,004	3,6,9,12,15,18,21,24-octaooxatetracontan-1-ol	24233-81-6	100	Rep Cat 2;R61, T;R23, Xn;R22, Xi;R41, R43, N;R50/53
				Tetrakis(hydroxymethyl) Phosphonium Sulfate	55566-30-8/259-709-0	60	
				1,2-Ethanediamine, N,N,N',N'-tetramethyl-, polymer with 1,1'-oxybis(2-chloroethane)	31075-24-8	1	
GS-1	Gel Stabilizer	155,00	0,021	Non-hazardous ingredients		100	none
BF-7L	Buffer	1071,80	0,144	Potassium Carbonate	584-08-7/209-529-3	60	Xi;R36/37/38
Fracal Ultra	Crosslinker	566,80	0,076	Non-hazardous ingredients		100	none
GBW-24	Breaker	75,00	0,010	Non-hazardous ingredients		100	O;R8, Xi;R38, R41
				Calcium Peroxide	1305-79-9/215-139-4	100	
				Calcium Hydroxide	1305-62-0/215-137-3	30	
				Calcium Carbonate	1317-65-3/207-439-9	10	
GBW-5	Breaker	23,00	0,003	Non-hazardous ingredients		100	O;R8, Xn;R22, Xi;R36/37/38, R42/43
				Diammonium Peroxodisulphate	7727-54-0/231-786-5	100	
Flo-Back 30	Surfactant	455,80	0,061	Non-hazardous ingredients		100	Xi;R36
				1-Propanaminium, 3-amino-N-(carboxymethyl)-N,N-dimethyl-, N- coco acyl derivs., hydroxides, inner salts	61789-40-0/263-058-8	100	
TOTALS		744740,1	100,000				

Contingency chemicals	Use	Contingency product Weight (kg)	Contingency product Weight (%)	Ingredient	Ingredient CAS number	Ingredient % *	Product Classification [#]
Ferrotrol 300	Iron Control contingency	1,00	0,000				Xi;R36
Xanvis L(X)	Viscosifier contingency	0,00	0,000	Citric acid	77-92-9/201-069-1	100	none
				Non-hazardous ingredients		100	none
				Ethanol	64-17-5/200-578-6	10	
FP-16LG	Defoamer	0,00	0,000	Non-hazardous ingredients		100	Xn;R65
				Paraffins (petroleum) normal C5-20	64771-72-8/265-233-4	100	
				Alkenes C>8	68411-00-7/270-095-3	10	
				2-(2-butoxyethoxy)ethanol	112-34-5/203-961-6	5	
				Non-hazardous ingredients		30	
Liquid Nitrogen	Stored nitrogen gas	202241,80	99,892	Non-hazardous ingredients		100	none
HEC	Viscosifier contingency	11,00	0,005	Non-hazardous ingredients		100	none
Sodium Carbonate (Soda Ash)	pH control	2,00	0,001	Non-hazardous ingredients		100	Xi;R36
Nitrogen Gas	Liquid lifting	5,00	0,002	Sodium Carbonate	497-19-8/207-838-8	100	none
100 mesh sand	Frac sand	200,00	0,099	Non-hazardous ingredients		100	Xn;R48/20, Carc cat 1;R49
				Quartz (SiO2)	14808-60-7/238-878-4	100	
TOTALS		202460,80	100,000				

Summary	Product Weight (kg)	Product Weight (%)
Salt water (5% KCl brine)	666421,40	89,484
Proppant	71794,00	9,640
Chemicals specified below:	6524,70	0,876
Gellant	0,258	
Liquid frac concentrate	0,281	
Buffer	0,154	
Suspending agent	0,006	
Surfactant	0,063	
Biocide	0,004	
Gel stabilizer	0,021	
Crosslinker	0,076	
Breaker	0,013	
Total	744740,10	100,000



* Total percentage of composition might not equal 100% - exceedance of 100% is possible because maximum concentrations of hazardous chemicals are included if ranges are given in MSDS, totals lower than 100% are possible because non-hazardous solvents (i.e. water) are not included in the composition
[#] Classification according to Dutch law at time of execution, explanation about the danger symbols or the R-sentences can be found on Wikipedia (https://en.wikipedia.org/wiki/European_hazard_symbols), https://en.wikipedia.org/wiki/List_of_R-phrases)