

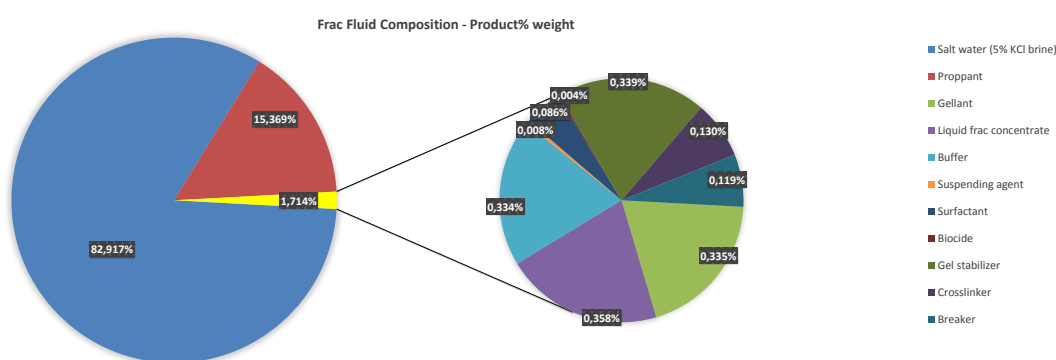
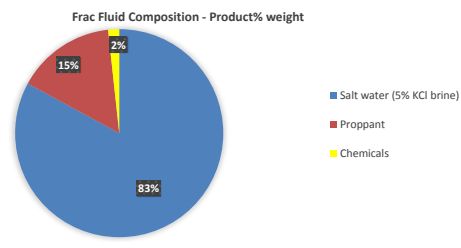
**OVERVIEW USED PRODUCTS, Gaag-Coldenhove (GAG-6), 22 Feb 2015**

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

Products	Use	Product Weight (kg)	Product Weight (%)	Ingredient	Ingredient CAS number	Ingredient % *	Product Classification <sup>†</sup>
Salt water (5% KCl brine)	Carrier	618450,00	82,917	Non-hazardous ingredients		100	none
Resin coated ceramic proppant	Proppant	114629,00	15,369	Non-hazardous ingredients		100	none
GW-4AFG	Gellant	2500,00	0,335	Non-hazardous ingredients		100	none
BioBase 637	Liquid frac concentrate component	2672,00	0,358	Hydrocarbons C14-C17, n-alkanes, <2% aromatics	917-828-1	70	Xn;R65,R66
				Hydrocarbons C10-C14, n-alkanes, <2% aromatics	920-274-3	30	
BF-1	Buffer	94,00	0,013	Non-hazardous ingredients		100	none
PSA-3	Suspending Agent	63,00	0,008	Crystalline Silica Quartz	14808-60-7/238-878-4	5	Carc cat 1A;R49
				Non-hazardous ingredients		100	
D-4G	Surfactant	21,00	0,003	Alcohols, C9-11-iso-, C-10-rich, ethoxylated	78330-20-8	100	Xn;R22, Xi;R41
Grotan OX	Biocide	31,10	0,004	3,3'-Methylenebis[5-methoxyazolidine]	66204-44-2/266-235-8	100	R20/22, C;R34, R52
GS-1	Gel Stabilizer	2525,00	0,339	Non-hazardous ingredients		100	none
BF-7L	Buffer	2396,10	0,321	Non-hazardous ingredients		100	Xi;R36/37/38
XLW-30G	Crosslinker	972,70	0,130	Potassium Carbonate	584-08-7/209-529-3	60	Xn;R22, Xi;R36/37/38
				Non-hazardous ingredients		100	
				Sodium Bisulphate	7681-38-1/231-665-7	0,1	
				Sodium Chloride	7647-14-5/231-598-3	0,1	
				Crystalline Silica Quartz	14808-60-7/238-878-4	0,1	
Enzyme G-I	Breaker	880,00	0,118	Non-hazardous ingredients		100	none
GBW-5	Breaker	8,00	0,001	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	621,30	0,083	1-Propanaminium, 3-amino-N-(carboxymethyl)-N,N-dimethyl-, N-coco acyl derivs., hydroxides, inner salts	61789-40-0/263-058-8	100	Xi;R36/38
<b>TOTALS</b>		<b>745863,2</b>	<b>100,000</b>				

Contingency chemicals	Use	Contingency product Weight (kg)	Contingency product Weight (%)	Ingredient	Ingredient CAS number	Ingredient % *	Product Classification <sup>†</sup>
Xanvis L(X)	Viscosifier contingency	0,00	0,000	Non-hazardous ingredients		100	none
FP-16LG	Defoamer	0,00	0,000	Ethanol	64-17-5/200-578-6	10	Xn;R65/66, Xi;R36
				Hydrocarbons C14-C17, n-alkanes, <2% aromatics	917-828-1	60	
				Hydrocarbons C10-C14, n-alkanes, <2% aromatics	920-274-3	30	
				2-(2-butoxyethoxy)ethanol	112-34-5/203-961-6	5	
Liquid Nitrogen	Stored nitrogen gas	17433,00	99,954	Nitrogen		100	none
Citric Acid	pH control	8,00	0,046	Citric acid	77-92-9/201-069-1	100	Xi;R36
Sodium Carbonate (Soda Ash)	pH control	0,00	0,000	Sodium Carbonate	497-19-8/207-838-8	100	Xi;R36
Nitrogen Gas	Liquid lifting	0,00	0,000	Non-hazardous ingredients		100	none
Methanol	Solvent	0,00	0,000	Methanol	67-56-1/200-659-6	100	F;R11, T;R23/24/25, R39
Propane	Liquid lifting	0,00	0,000	Non-hazardous ingredients		100	none
<b>TOTALS</b>		<b>17441</b>	<b>100,000</b>				

Summary	Product Weight (kg)	Product Weight (%)
Salt water (5% KCl brine)	618450,00	82,917
Proppant	114629,00	15,369
Chemicals	12784,20	1,714
specified below:		
Gellant	0,335	
Liquid frac concentrate	0,358	
Buffer	0,334	
Suspending agent	0,008	
Surfactant	0,086	
Biocide	0,004	
Gel stabilizer	0,339	
Crosslinker	0,130	
Breaker	0,119	
<b>Total</b>	<b>745863,20</b>	<b>100,000</b>



\* 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  
<sup>†</sup> 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/European_hazard_symbols) resp. [https://en.wikipedia.org/wiki/List\\_of\\_R-phrases](https://en.wikipedia.org/wiki/List_of_R-phrases))