CLEANING LABORATORY EVALUATION SUMMARY

SCL #:	2008
DateRun:	12/17/2008
Experimenters:	Jason Marshall
ClientType:	Cleaner Manufacturer
ProjectNumber:	Project #1
Substrates:	Liquid
PartType:	Coupon
Contaminants:	Oil
Cleaning Methods:	Mechanical Agitation
Analytical Methods:	Performance Test
Purpose:	To evaluate products for oil-water separation following GS 34.

Experimental Procedure:

The first supplied product was used at full strength and at a 5 percent dilution. The second supplied product was tested at the 34:1 dilution ratio. The standard calls for 720 ml of the dilution to be used and 80 ml of oil. However, due to available equipment; this volume was not able to be used. Instead, 360 mL of the diluted aqueous degreaser solution was placed into the volumetric cylinder and then 40 ml of oil was added. The initial total height of the liquids was measured in the cylinder (A = initial height). The mixture was stirred for 30 minutes with a magnetic stirrer at the highest setting that does not result in any of the mixture spilling from the container.

Upon completion of the 30-minute stirring time, the stirrer was turned off. The mixture was allowed to sit for 20 minutes allowing the liquid mixture separate. As the mixture sits, three phases will form. The top phase will be the oil, the middle phase will be the dispersed phase, which consists of both the oil and the cleaning solution, and the bottom phase will consist only of the cleaning solution and water. After the 20 minutes has elapsed, measure the height of the dispersed, or middle, phase (B = final height).

The separation ability was calculated using the following formula: [(A-B)/A]100 = percent separation.

If the percent separation exceeds 95% in two out of three tests, the degreaser meets the performance standard for separation.

Results:

Only one product, Injection Mold Cleaner, was found to achieve the 95% separation after 30 minutes of mixing and 20 minutes of separation for two of three attempts. The other product at both dilutions were only able to achieve the separation level after 24 hours of separation. The table lists the initial height, final height and calculated percent separation for each of the three products for each trial.

Trial 1

Trial	Initial Height (A)	Middle Section (B)	A-B	(A-B/ A)100	exceeds 95%
STC 300 5%	24.0	2.2	21.8	90.83	-
STC 300 100%	22.9	4.1	18.8	82.10	-
IMC 2.9%	23.8	1.1	22.7	95.38	+

Trial 2

Trial	Initial Height (A)	Middle Section (B)	A-B	(A-B/ A)100	exceeds 95%
STC 300 5%	25.6	2.3	23.3	91.02	-
STC 300 100%	24.8	2.1	22.7	91.53	-
IMC 2.9%	24.9	1.6	23.3	93.57	-

Trial 3

Trial			A-B	(A-B/ A)100	exceeds 95%

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	Initial Height (A)	Middle Section (B)			
STC 300 5%	25.3	1.8	23.5	92.89	-
STC 300 100%	24.3	2.8	21.5	88.48	-
IMC 2.9%	24.8	1.2	23.6	95.16	+

Summary:

Substrates:	Liquid				
Contaminants:	Oil				
Company Name:	**Product Name:**	**Conc.:**	**Efficiency:**	**Effective:**	**Observations:**
Safe-Tee Chemical	STC 300 Degreaser	100	91.95	☐	
Safe-Tee Chemical	STC 300 Degreaser	5	90.00	☐	
Safe-Tee Chemical	Safe Tee Injection Mold Cleaner	2.9	95.27	☑	

Conclusion: The Safe Tee Injection Mold Cleaner met the requirements for GS 34 oil-water separation on two of the three attempts. The other product, STC 300 Degreaser did not meet the standard's requirement.