



University of Brighton

REPORT ID: TR-2012-001

SHEET 1 OF 1

CUSTOMER: Kalimex Ltd		COMPANY LOGO (if Applicable): 	
SUBJECT: Testing of K-Seal Leak Sealing Capability by ASTM D3147 Standard			
COMPILED/TESTED BY: Mr N.Applin BEng(Hons) DIS AMIMechE		CHECKED/APPROVED BY: Dr N.Miché BSc Mphil PhD & Mr M.Schlup	
FIRST ISSUE DATE: 25/01/2012		REVISION DATE: NA	
VERSION: 1		PRODUCT TESTED: K-Seal (236mL)	

Test Method: K-Seal leak sealing capability tested in accordance with ASTM D3147 - 06 "Standard Test Method for Testing Stop-Leak Additives for Engine Coolants". Also all preparation and sampling of test solutions for the above test were carried out in accordance with practices detailed within ASTM D1176 – 98 "Standard Practice for Sampling and Preparing Aqueous Solutions of Engine Coolants or Antirusts for Testing Purposes".

Test Results: K-Seal[®] has successfully completed 2 entire test sequences in succession in accordance with test methods set out in ASTM D3147. See Tables 1 and 2 below for the final test results.

Table 1 – K-Seal[®] ASTM D3147 final leak test results

Test run	Plate type	Hole diameter / slot width		Quality of the seal	Cumulative fluid loss (mL)	Total fluid loss (mL)
		Inches	Millimetres			
1	Slot	0.010	0.254	Sealed ^A	55±5	345±10
	Hole	0.025	0.635	Sealed ^A	290±5	
2	Slot	0.010	0.254	Sealed ^A	75±5	225±10
	Hole	0.025	0.635	Sealed ^A	150±5	
					Average	285±10

^A ASTM terminology for describing quality of seal formed. The term "Sealed" in ASTM D3147 [1] is defined as "completely plugged with no leaking or seeping".

Table 2 – K-Seal[®] ASTM D3147 particle examination results

Test run	Presence of Particles		Presence of Gumming/gelling	
	Before	After	Before	After
1	NO	NO	NO	NO
2	NO	NO	NO	NO

Conclusion: The above test data shows that K-Seal[®] is capable of sealing 0.025in (0.635mm) diameter holes and 0.010in (0.254mm) wide by 0.5in (12.7mm) long slots satisfactory in accordance with ASTM D3147 test method.

1. American Society Testing and Materials. ASTM D3147 -06 Standard test method for testing stop-leak additives for engine coolants. West Conshohocken, USA: ASTM. 2006. section 3. p. 1.