



ONDEO Nalco Energy Services

Post Office Box 87 Sugar Land, Texas 77487-0087

Analytical Report

ONDEO Nalco Energy Services
Yankie, Chris R
Sample Marked: EC1304A
Sample Description

Sample Number: TM0202935
Date Sampled: 29-May-2002
Date Received: 31-May-2002
Date Completed: 25-Jun-2002

Materials Compatibility Report

(One Week Immersion at 130 ° F.)

Sample Description:

Clear Amber Liquid

Polymer	% Change	Appearance	Status
Alfax O-Rings	0.87	No Change.	PASS
Buna N O-Rings	5.8	No Change.	PASS
EPDM/EPT O-Ring	3.0	No Change.	PASS
Ethylene Propylene O-Rings	1.3	No Change.	PASS
HDPE Wedge 625 / Blue Drum	0.81e-1	No Change.	PASS
Hypalon O-Rings	8.6	Material was swollen.	FAIL
Kalrez O-Ring	2.0	No Change.	PASS
Neoprene O-Rings	71	Material was swollen.	FAIL
Plexiglass Wedge	0.97	No Change.	PASS

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	% Change	Appearance	Status
Polyethylene Tubing	0.37	No Change.	PASS
Polypropylene Screw	0.16	No Change.	PASS
Polyurethane O-Rings	3.7	No Change.	PASS
PVC Washer	0.96	Material was stained.	FAIL
Rubber O-Rings	5.2	No Change.	PASS
Teflon O-Rings	0.17e-1	No Change.	PASS
Viton A O-Rings	28	Material was swollen.	FAIL

Drum Liners	Appearance	Status
EHD0045 (C668/C927)	Rusted in vapor phase.	FAIL
HXG0008 (C605/C996)	Rusted in vapor phase.	FAIL

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Metal	Appearance	MPY	Status
304 SS	No Change.	<0.001	PASS
316L SS	No Change.	0.012	PASS
Alloy 20	No Change.	0.057	PASS
Aluminum	Coupon was dull in appearance.	3.61	FAIL
Copper	Coupon was discolored and dull in appearance.	1.14	FAIL
Hastelloy C-276	No Change.	<0.001	PASS
Mild Steel (C600)	Coupon was dull in appearance.	2.06	FAIL
Yellow Brass	Coupon was discolored and dull in appearance.	0.546	FAIL

Items marked "Pass" are considered compatible with this material.