INSTYTUT TECHNICZNY WOJSK LOTNICZYCH
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PCA Polskie Centrum Akredytacji
BADANIA
AB 098

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ZAKŁAD MPS

Test Report No. WK-4363-55-417-15

Date reported:

Customer:	**AUTOLAND** **ul. Mickiewicza 28** **43-250 Pawłowice**
Item tested (by customer data):	**Dynagel 2000 Coolant concentrate**
Type of test:	**PN-C-40007:2000**
Date of receipt:	**17-06-2015 r.**
Date of performance of test:	**24-08-2015 r.**
Contract:	**letter dated 15-06-2015 r.**
Sample ID:	**as above**
Code work ITWL:	**4363-55-1-00**
Sample ID ITWL:	**WK-4363-55-417-15**

Test results

Lp.	Property	Test method	Requirements PN-C-40007:2000	Test result
1	Colour	PN-C-40007:2000 p. 3.5 (A)	any clear	pink
2	Appearance	PN-C-40007:2000 p. 3.5 (A)	without sediments	liquid homogeneous, without sediments
3	Density at 20 °C, g/cm^3 - concentrate - concentrate dilution 1+1	PN-92/C-04504 (A)	manufacturer sets	 1,121 1,072
4	Storage stability: - volume sediment, ml - appearance of liquid	PN-C-40008/13:2000 (A)	 does not contain allowed light opalescent	 does not contain unchanged when compared with standard liquid
5	Ash content % (m/m)	PN-92/C-40008/02 (A)	max 5	1,8
6	Boiling Point, °C - concentrate - concentrate dilution 1+1	PN-92/C-40008/03 (A)	 manufacturer sets min 107,5	 165,0 110,0
7	pH dilution 1+1	PN-93/C-40008/04 (A)	7,5 ÷ 11,0	8,5
8	Reserve alkalinity (RA), ml 0,1n HCl/10 ml	PN-93/C-40008/05 (A)	manufacturer sets	8,8

Test results *Continued*

Lp.	Property	Test method	Requirements PN-C-40007:2000	Test result
9	Tendency to foam: - foam volume, ml - foam decay time, s	PN-93/C-40008/06/Az1:2000 (A)	 max 150 max 5	 25 2,3
10	Corrosion in glassware. Weight loss plates after test, mg/specimen - copper - solder - brass - steel - cast iron - aluminum Rating tile the surface	PN-93/C-40008/07/Az1:2000 (A)	max: 10 30 10 10 10 30 not allowed corrosion pitting	 -1,0 -2,3 -2,0 -1,8 -1,8 -3,6 lack of corrosion pitting
11	Corrosion of cast aluminum alloys at heat-rejecting surfaces, Weight loss after 168 hours, mg/cm^2	PN-93/C-40008/08/Az1:2000 (A)	max 1,0	0,7
12	Simulated service test. Weight loss, mg/specimen - copper - solder - brass - steel - cast iron - aluminum Rating tile surface Change reserve alkalinity pH fluid after test Rating internal surfaces of the water pump in contact with the fluid	PN-93/C-40008/09/Az1:2000 (A)	max: 20 60 20 20 20 60 not allowed corrosion pitting max 3 7,5 ÷ 11,0 not allowed corrosion pitting and gouges erosion and cavitation	 -2,8 -3,0 -2,8 -4,7 -17,3 -1,9 lack of corrosion pitting 0,2 8,3 lack of corrosion pitting and gouges erosion and cavitation
13	Freezing point dilution 1+1, °C	PN-93/C-40008/10 (A)	max -35	-37,4
14	Water content, % (m/m)	PN-C-40008-11:1994 (A)	max 5	3,8
15	Miscibility with hard water - appearance of liquid - sediment volume, ml	PN-C-40008-12:2000 (A)	 allowed light cloudiness max 0,10	 no changes in relation to the fluid output 0,00

(A) Method accredited by Polish Centre for Accreditation (AB 098)

Rating packaging unit by PN-C-40007:2000 4.1 (A)

Dynagel 2000 Coolant concentrate coolers delivered to the research in packages of plastic 5 liters, closed caps with locking ring, the tear during opening. Containers with the labels provided replacements.	
Property	Test result
Tightness of packaging	With the container inverted cap down on previously backed by paper during 24 hours, leakage of fluid did not occur.
Labels	not evaluated.
(A) Method accredited by Polish Centre for Accreditation (AB 098)	

Testing results presented in the tables above apply only to the sample being tested.
Sample has retrieved and delivered by the customer.

Assessment: Dynagel 2000 Coolant concentrate meets the requirements of PN-C-40007:2000

Drawn up

mgr Halina GIELO-KLEPACZ

Authorized
Head of Research Laboratory

mgr inż. Grażyna KARP

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ZAKŁAD MPS

Test Report No. WK-4363-55-418-15

Date reported:

Customer:	**AUTOLAND** **ul. Mickiewicza 28** **43-250 Pawłowice**
Item tested (by customer data):	**Dynagel 2000 Coolant -37 °C**
Type of test:	**An identification test in relation to the Concentrate Dynagel 2000**
Date of receipt:	**17-06-2015 r.**
Date of performance of test:	**24-08-2015 r.**
Contract:	**letter dated 15-06-2015 r.**
Sample ID:	**as above**
Code work ITWL:	**4363-55-1-00**
Sample ID ITWL:	**WK-4363-55-418-15**

Test results

Lp.	Property	Test method	Requirements PN-C-40007:2000	Test result	
				WK-4363-55-417-15	WK-4363-55-418-15
1	Colour	PN-C-40007:2000 p. 3.5 (A)	any clear	pink	pink
2	Appearance	PN-C-40007:2000 p. 3.5 (A)	without sediment	liquid homogeneous, without sediments	liquid homogeneous, without sediments
3	Density at 20 °C, g/cm^3	PN-92/C-04504 (A)	manufacturer sets	1,072*)	1,072
4	Ash content % (m/m)	PN-92/C-40008/02 (A)	max 5	1,8	1,0
5	pH	PN-93/C-40008/04 (A)	7,5 ÷ 11,0	8,5*)	8,5
6	Reserve alkalinity (RA), ml 0,1n HCl/20 ml	PN-93/C-40008/05 (A)	manufacturer sets	8,8**)	8,8
7	Freezing point, °C	PN-93/C-40008/10 (A)	max -35	-37,4*)	-37,8

(A) Method accredited by Polish Centre for Accreditation (AB 098)
*) dilution 1+1
**) ml 0,1n HCl/10 ml

Rating packaging unit by PN-C-40007:2000 4.1 (A)

Dynagel 2000 Coolant -37 °C delivered to the research in packages of plastic 5 liters, closed caps with locking ring, the tear during opening. Containers with the labels provided replacements.	
Property	Test result
Tightness of packaging	With the container inverted cap down on previously backed by paper during 24 hours, leakage of fluid did not occur.
Labels	not evaluated.
(A) Method accredited by Polish Centre for Accreditation (AB 098)	

Testing results presented in the tables above apply only to the sample being tested.
Samples has retrieved and delivered by the customer.

Assessment: Dynagel 2000 Coolant -37 °C meets the requirements of PN-C-40007:2000

Drawn up

mgr Halina GIELO-KLEPACZ

Authorized
Head of Research Laboratory

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