

EKWB Test Report:

Test of effects of different cooling liquids and additives
on EK nickel plated blocks

Ljubljana, June 1st 2011



Goal:

To test EK nickel plated block (we chose EK-FB R3Gene) made in same batch under influence of different liquids commonly used in watercooling setups.

All loops consist of EK-DCP 2.2 pump, water block and EK-Coolstream 360XT radiator.

Tests were also divided among flushed and unflushed radiators with same loops to check possible flux influence on nickel plating.

Start time of running loops: April 6th 2011

All photos /latest observation taken on June 1st 2011

Block #1:

Unflushed radiator + distilled water



Observations: no change on nickel plating

Date of latest observation: June 1st

Block #2:

Unflushed radiator + Ekoolant (dye & anti-corrosion fluid) / 1:9 mixed with distilled water



Observations: no change on nickel plating.

Date of latest observation: June 1st

Block #3:

Unflushed radiator + Thermochill EC6 (100%)



Observations: no change on nickel plating

Date of latest observation: June 1st

Block #4:

Unflushed radiator + AT Protect UV Blue (100%)

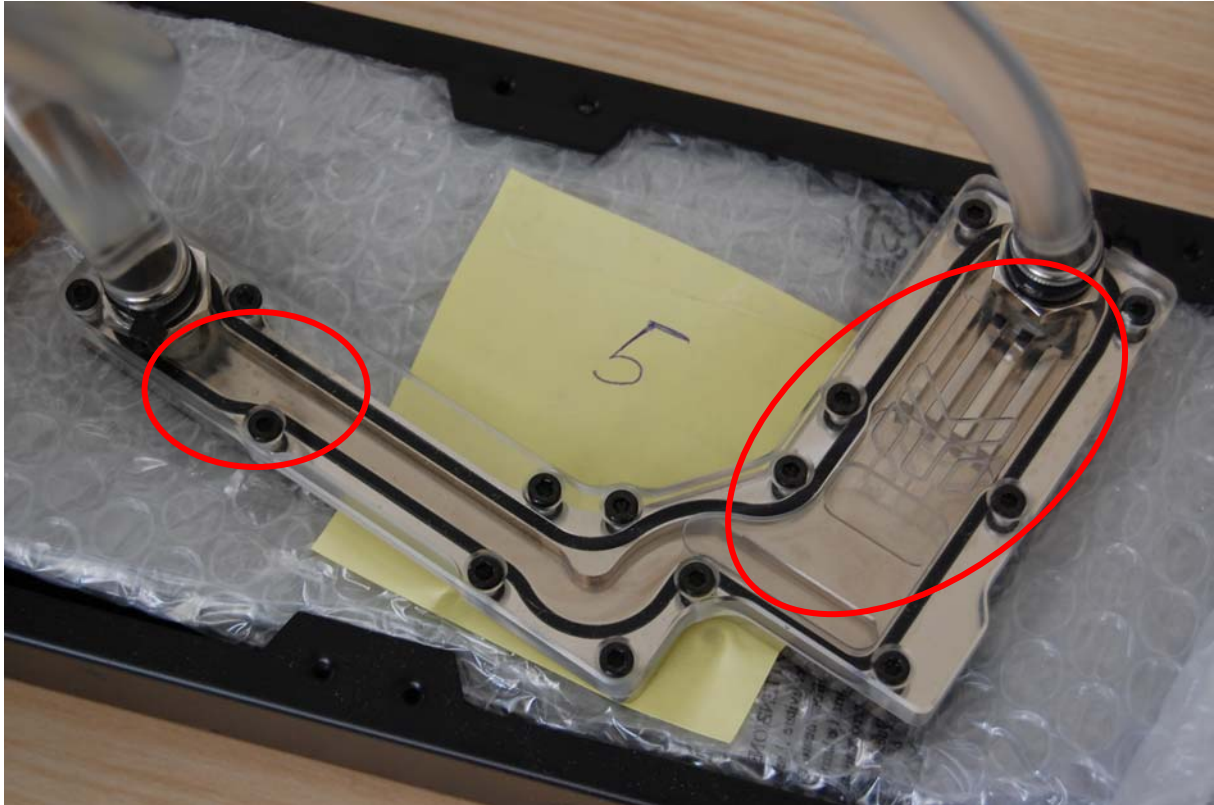


Observations: no change on nickel plating

Date of latest observation: June 1st

Block #5:

Unflushed radiator + Copper(II) sulfate pentahydrate 4.1% (2 drops) + distilled water



Observations: discoloration, visible staining in marked areas

Date of latest observation: June 1st

Block #6:

Unflushed radiator + copper sulfat 4,1 % (5 mL) + distilled water



Observations: corrosion of nickel plating (also pictures taken with microscope at the report of the institute)

Date of latest observation: June 1st

Block #7:

Flushed radiator + distilled water



Observations: no change on nickel plating

Date of latest observation: June 1st

Block #8:

Flushed radiator + Ekoolant (dye & anti-corrosion fluid) / 1:9 mixed with distilled water



Observations: no change on nickel plating

Date of latest observation: June 1st

Block #9:

Flushed radiator + AT Protect UV Blue (100%)



Observations: no change on nickel plating

Date of latest observation: June 1st

Block #10:

Flushed radiator + copper sulphate 4,1 % (2 drops) + distilled water



Observations: strong staining all over flow path on nickel plating, also start of corrosion in marked area

Date of latest observation: June 1st



Conclusion:

Up to this date only blocks exposed to copper sulphate, which primary function is algae inhibition, show wear and damage to nickel plating. Based on these tests and considering all blocks are from same batch, we can conclude that this liquid is only culprit so far.

We will continue testing current systems and adding more options and coolants to the list, including silver coil.

So until further notice we recommend customers with not just EK nickel plated products to use coolant with anticorrosion additive, and do not mix different additives together due to unknown incompatibilities and possible damages not only to nickel plated blocks but to whole watercooling system.

EKWB team

Ljubljana, June 1st 2011