

Dyes for specialized chemical industry (household chemicals, automotive chemicals, lubricants, coolants (antifreezes), washers, etc.)

This abstract is intended to clearly show the advantages of the exclusive range of dyes of the Chromatech brand over the nearest competitors in terms of market volume.

Tested products:

To do this, we took 11 of the company's most popular liquid dyes, listed in the table below, which were tested in two different antifreeze compositions.

Chromatech	Color and characteristic
CHROMATINT® YELLOW 1960	Yellow fluorescent
CHROMATINT® YELLOW 2611	Yellow light-resistant
CHROMATINT® GREEN 2207	Green fluorescent
CHROMATINT® GREEN 2579	Green light-resistant
CHROMATINT® RED 1887	Pink fluorescent
CHROMATINT® BLUE 408	Blue light-resistant
CHROMATINT® VIOLET 1689	Violet fluorescent
CHROMATINT® VIOLET 2190	Violet light-resistant
CHROMATINT® ORANGE 2701	Red fluorescent
CHROMATINT® RED 2629	Red lightfast
CHROMATINT® RED 3331	Red light-resistant (for base)

**Chromatech dyes are more saturated and bright colors compared to all its competitors (with the same input rate per unit volume).

**Also, fluorescence indicators prevail in comparison with competitors by orders of magnitude, which is an important indicator for narrow special industries (including production cooling agents, including automotive antifreezes).



General information

Test dye concentration:

- 0,01% for all liquid dyes

The dyes and concentrations mentioned above were added to two different coolant formulations and tested using the following test procedure.

Test procedure:

After mixing, all samples were poured into small glass bottles, closed and tested as follows:

1. After 3 months in the dark
2. After 3 months in daylight in front of the window
3. After 3 months at 45°C in the oven
4. After 3 months at 45°C in the oven + 1 month at 90°C in the oven

Evaluation:

The samples were evaluated visually, in particular, changes in color. If precipitation was observed, it was noted separately and rated as very bad.

Gradation looked like this:

- ++ very good, no differences are visible
- + small changes in color are visible
- o acceptable changes are visible
- strong changes are visible (bad)
- very bad, very strong changes are visible (this includes precipitation)

The results

- All dyes tested are stable when stored in the dark at room temperature.
- The vast majority of competitors' dyes change color after being stored in daylight outside windows, unlike the Chromatech line. These results are valid under the condition of using transparent commercial packaging.
- No change was observed for the vast majority of dyes after 3 months of storage at 45°C in the dark.
- After additional exposure to a temperature of 90°C, dyes do not show significant color changes and precipitation.
- These results should help as an indication. Results may vary with other formulations or testing methods
- Also, it should be noted that with longterm exposure to both temperature and solar radiation, none of the declared fluorescent dyes of the Cromatech company lost their properties, on the contrary, the emission of dyes produced by other companies in most cases either significantly decreased or disappeared altogether.

Resume

Name	Stability in the mixture of ant. (1+2)	3 months in the dark	3 months before light	3 months @45 C	3 months @45 C +@90 C	pH
CHROMATINT® YELLOW 1960	++	++	+	++	++	2-13
CHROMATINT® YELLOW 2611	++	++	++	++	++	2-13
CHROMATINT® GREEN 2207	++	++	+	++	++	2-13
CHROMATINT® GREEN 2579	++	++	++	++	++	2-13
CHROMATINT® RED 1887	++	++	++	++	++	2-13
CHROMATINT® BLUE 408	++	++	++	++	++	2-13
CHROMATINT® VIOLET 1689	++	++	++	++	++	2-13
CHROMATINT® VIOLET 2190	++	++	++	++	++	2-13
CHROMATINT® ORANGE 2701	++	++	++	++	++	2-13
CHROMATINT® RED 2629	++	++	++	++	++	2-13
CHROMATINT® RED 3331	++	++	++	++	++	5-14