

## Fuel a homogenizer TRGA.

**Question** - how long keeps effect dispergation and homogenization heavy boiler fuel, HFO M-100?

**Answer** - partially 6 years. Some proofs on photo and rag test (capillary fluidity fractional composition).

( <http://www.afuelsystems.com/ru/trga/s203.html> )

In July 2009, we have made a lot of samples of different fuel mixtures based on heavy fuel oil M-100. These samples are stored. The starting oil, fuel oil after dispersion and homogenization without additional additives and watered heavy oil with the water content 10-15-20% and some other mixtures. All old photos are available here under a [microscope](#).

These samples survived 3 years in storage in unheated garage - freezing in winter, heating to 30 in summer. Then, some of them have been moved to our balcony office, where the winter temperature nearly "-2", and the summer more the "+40". Last Visit us colleagues asked the question - " **how long keeps effect dispergation and homogenization heavy boiler fuel, HFO M-100 ?** " and suggested to make the "test on substance" to see the difference in flow.

It is clear that in 6 years had to go through the process of polymerisation or gumming. It is clear that the remaining water were aggregated, it is clear that the fragmented and dissolved resins and asphaltenes could crystallize. It is clear that mazut should essentially lose its properties obtained after homogenization. Question by how much?

Armed with a rag and a microscope, check whether there is a difference.

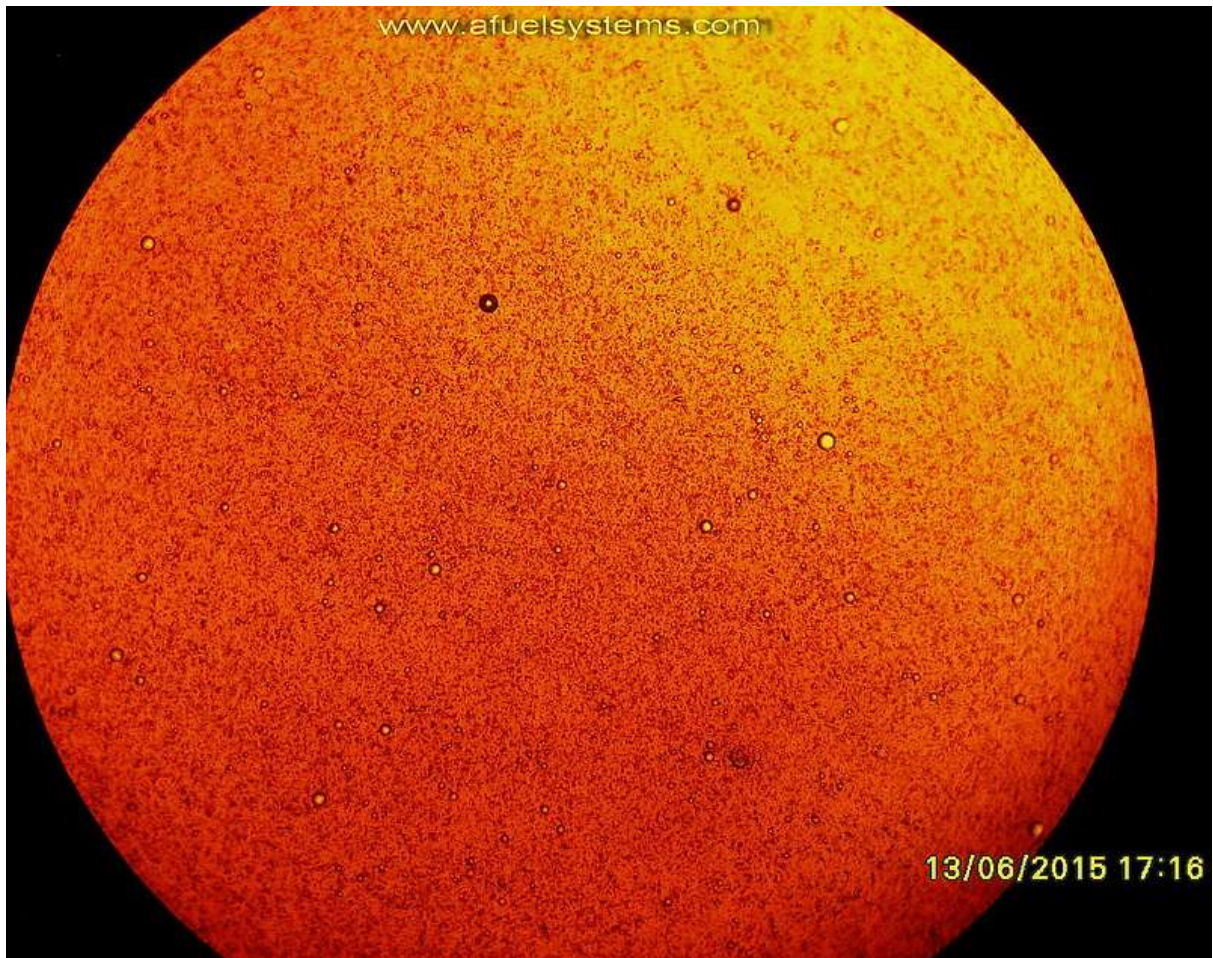


**Below - a sample of the original fuel oil.**

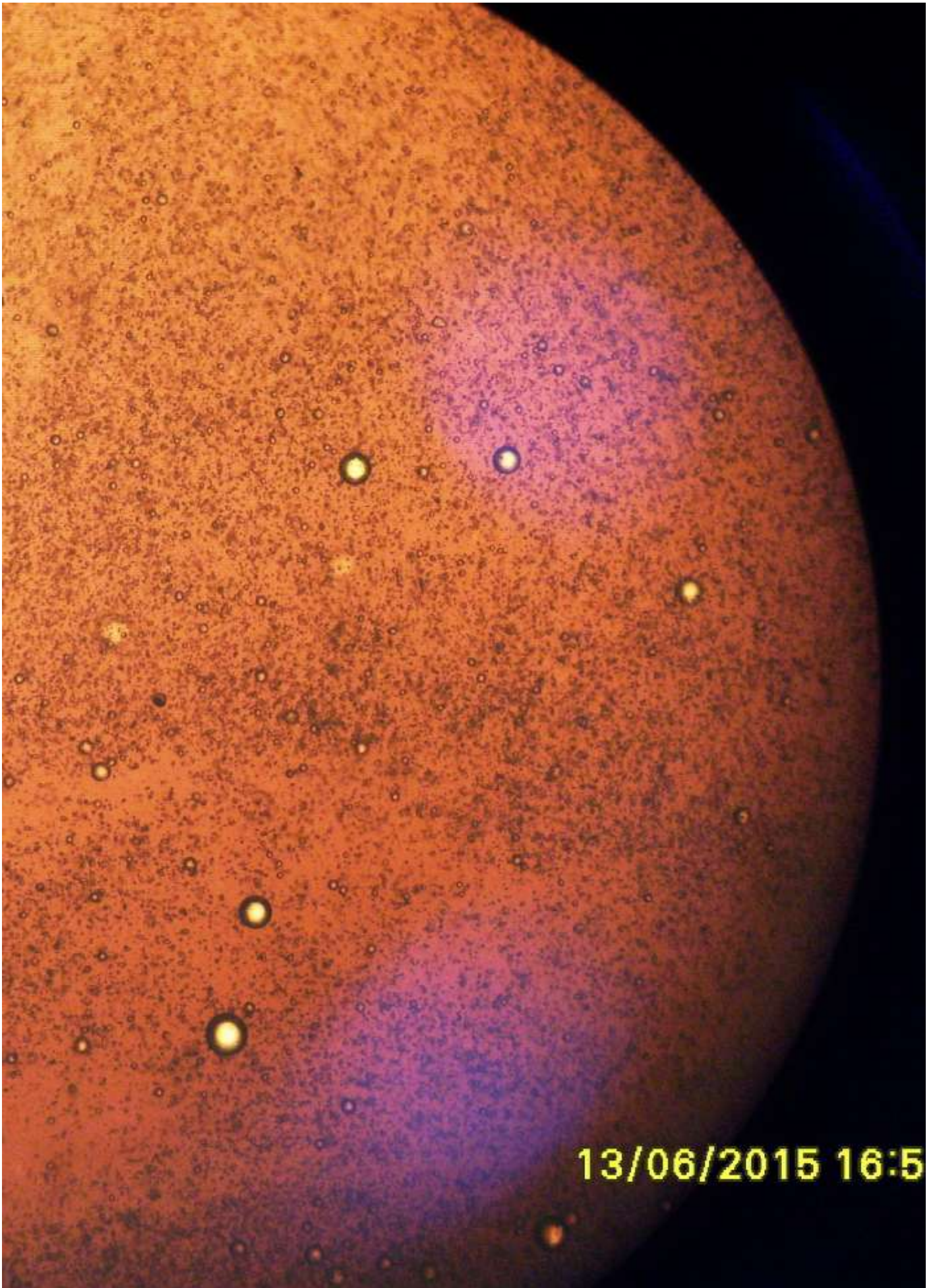
It has been previously heated and mixed in a container with a shovel, then poured into a jar called "mazut source" Yesterday, mazut was put under a microscope and made this picture. It was taken the top layer of fuel oil.



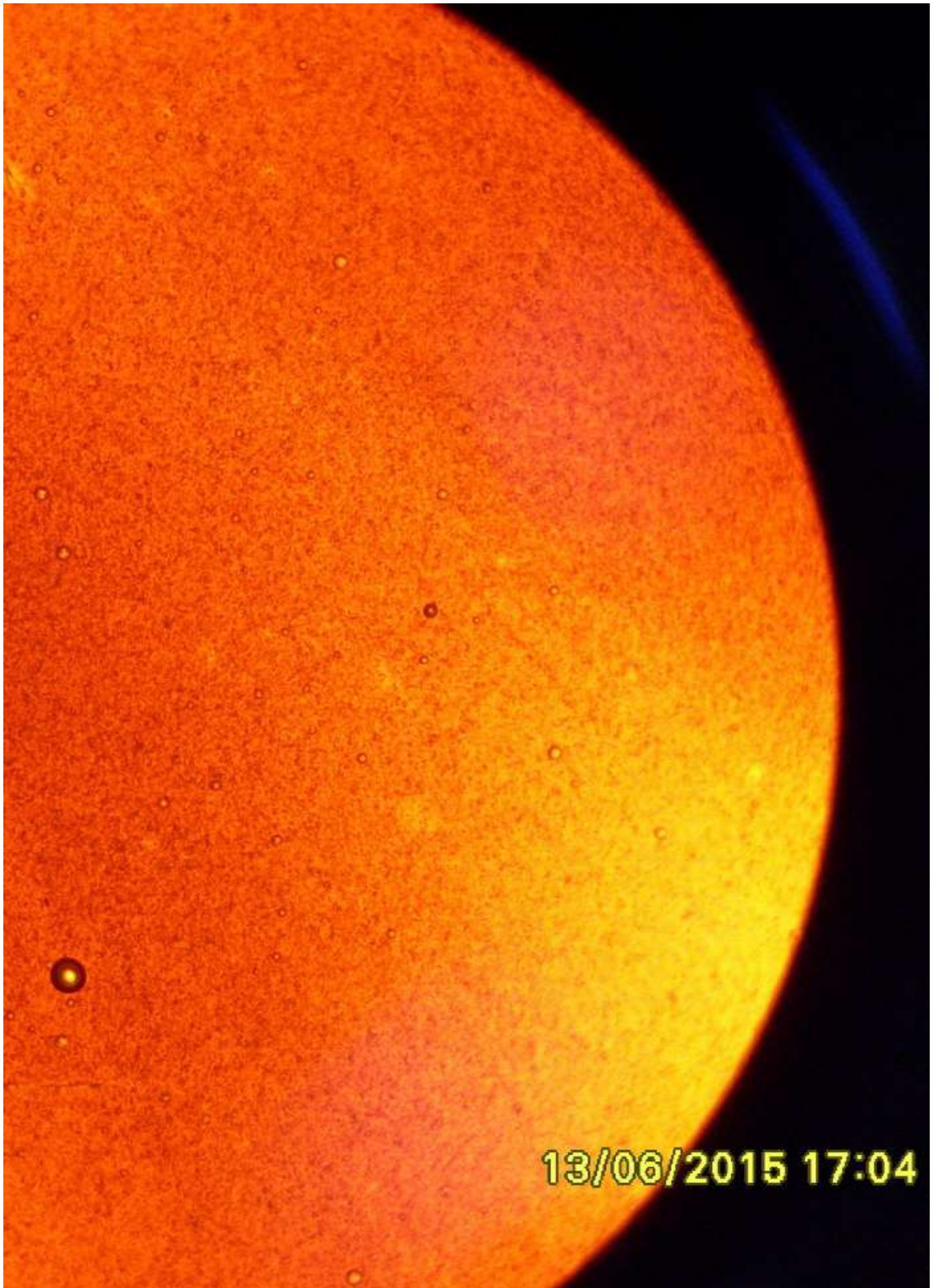
**Top - black oil M-100 original. Bottom - mazut M-100 homogenized on TRGA-10. Samples of 2009. Upper layer. Samples opened in 2015. Difference.**



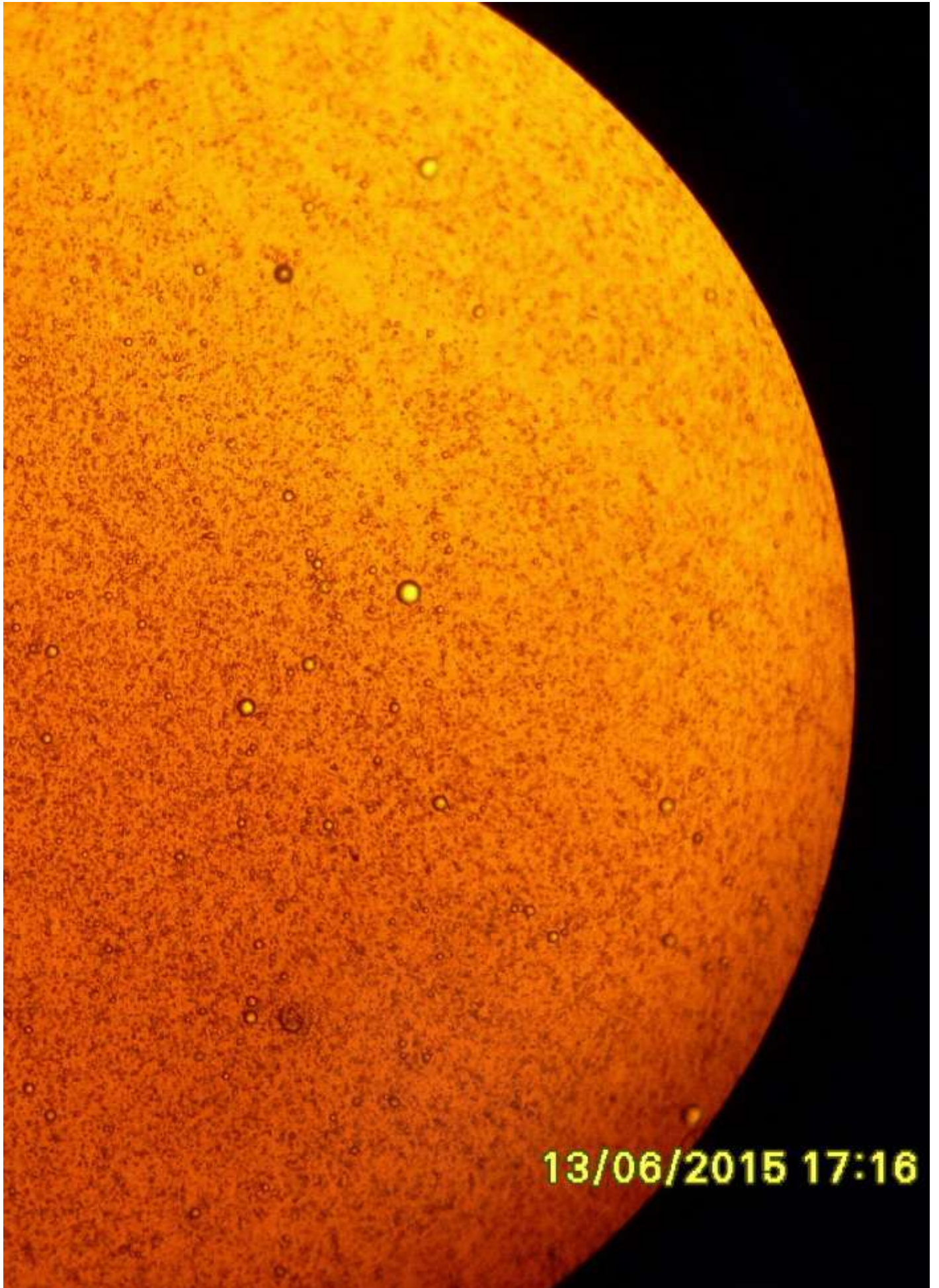
black oil M-100 original.



Heavy fuel oil M-100, homogenized by TRGA in 2009.  
June 2015 Typical photo.



**Heavy fuel oil M-100, homogenized by TRGA in 2009.  
June 2015. Photos with the largest grit particles.**



The first 2 years all HFO samples were stored in an unheated garage – i.e. freezing in winter.

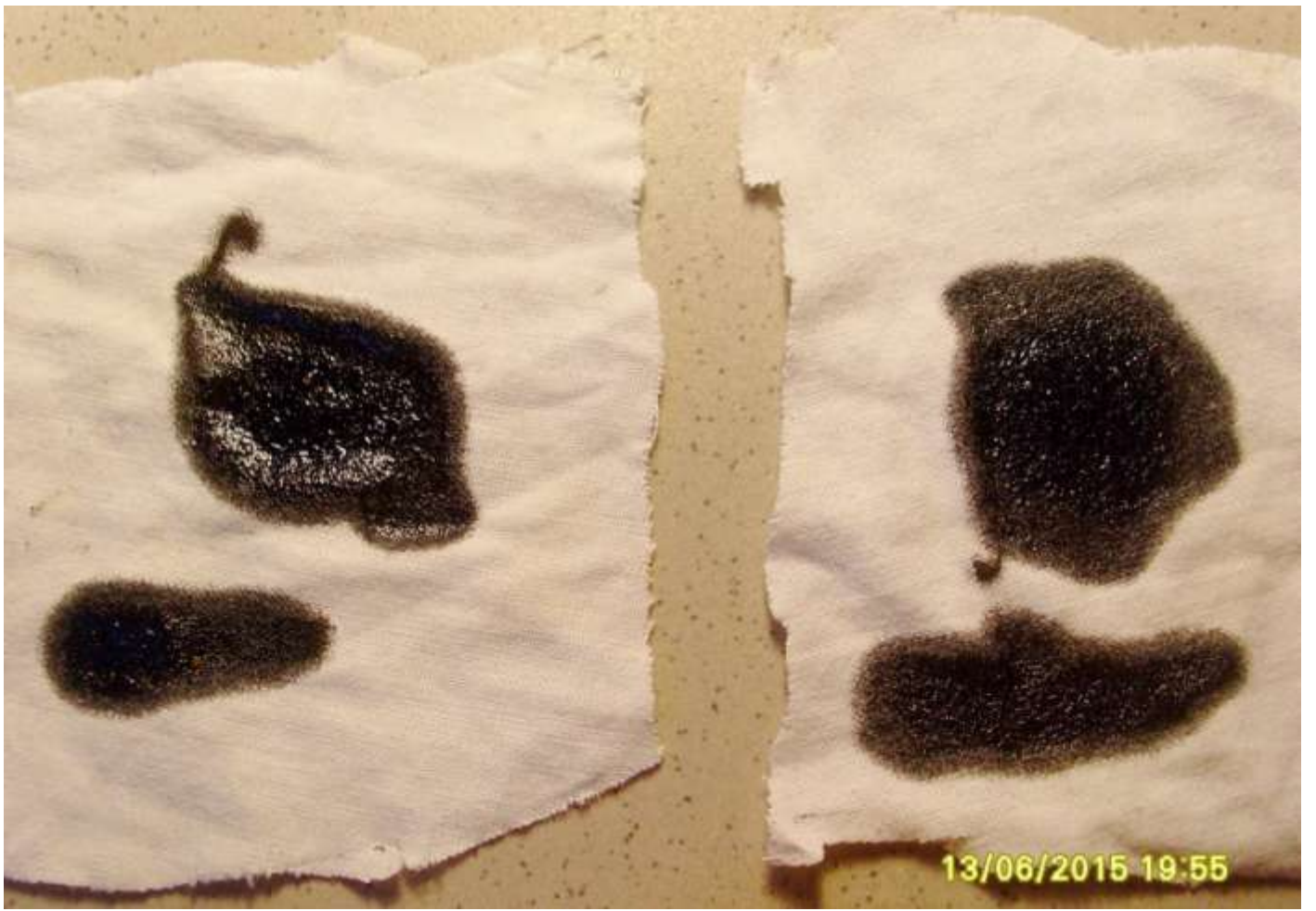
**Below - a test on a rag - capillary flow.**

**Left** - a standard mazut M-100,

**Right** - M100 mazut after homogenization on TRGA-10 ( in 2009)





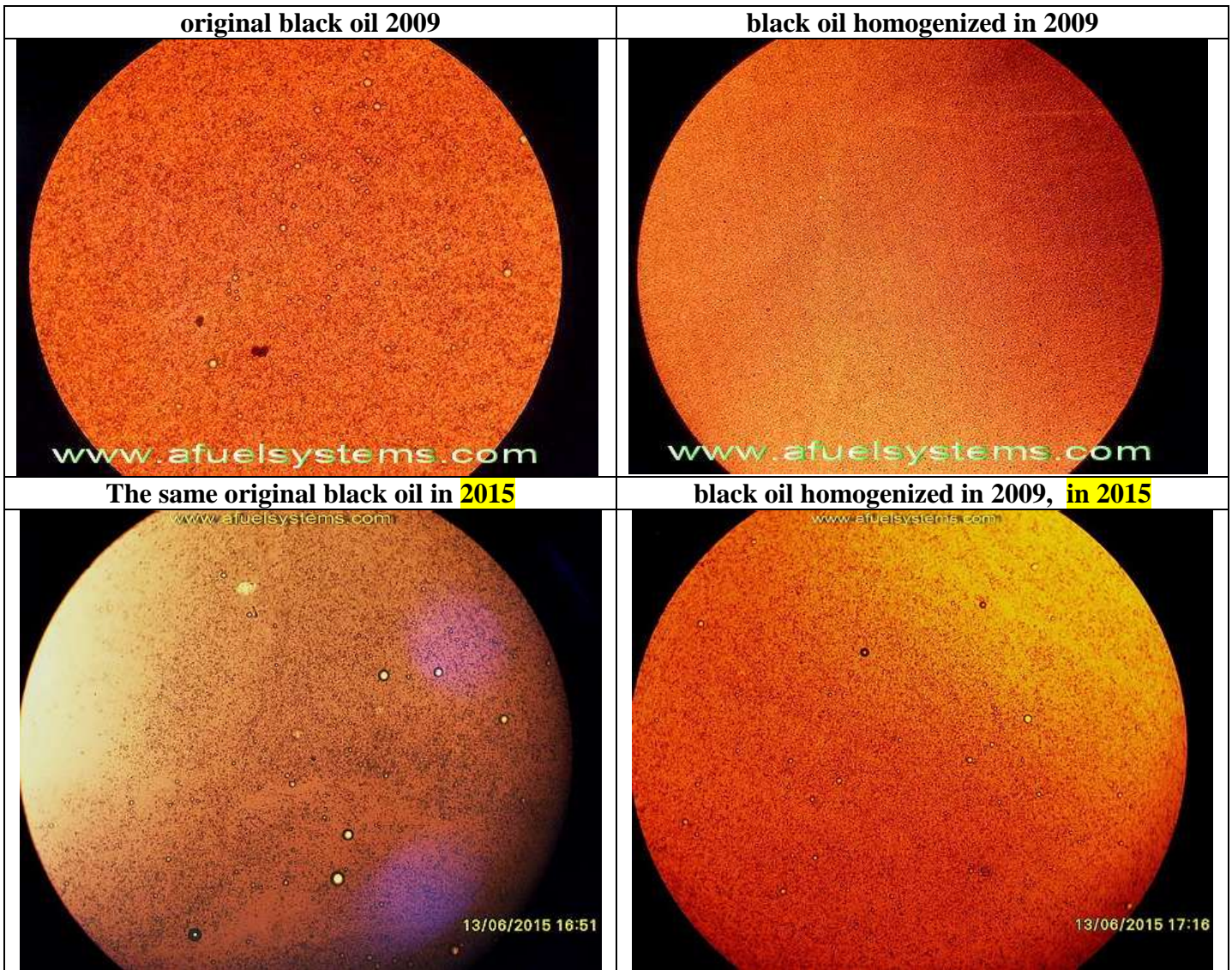






**top line** - original black oil and black oil homogenized in 2009

**bottom line** - the same samples in 2015. ...





Repeat pictures - end and the beginning of long test ( 2009 – 2015 )



And one more photo below

**Drop of oil left** - a standard black oil M-100.

**Drop of oil right** - the same black oil that has been processed by a fuel homogenizer TRGA-10 in 2009.

We see that right drop is drier, i.e. under the same conditions (volume, surface evaporation, temperature and time) amounts of hydrocarbons vaporized more. I.e. **fractional composition of the heavy fuel oil, which was homogenized 6 years ago, is still lighter than the same source black oil.**

black oil is partially evaporated



After raising the fabric (pictured below), is more than obvious that the **viscosity of heavy fuel oil, which was gomogenizarovn in 2009, still less** than the viscosity of the original of heavy fuel oil. Viscosity is including friction particles within the HFO. I.e. the **size of solids is less**.



## Conclusion.

After 6 years after homogenization by homogenizer TRGA-10, black oil M-100 save:

1. higher capillary flow.
2. The smaller number of mechanical impurities minimal amount of polymerized matter (asphaltenes and resins).

<http://www.afuelsystems.com/ru/trga/s203.html>

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