



PETRONAX
Petrochemical company



PRODUCT CATALOG

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www.petronaxcorp.com



CONTENT

1. Business facts

2. Laboratory research

3. Trademark INTRON®

4. Upstream and oil preparation products

4.1. INTRON® dSol

4.2. INTRON® antiCorr

4.3. INTRON® antiH2S

5. Gasoline production products

5.1. INTRON® 1000 series

5.2. INTRON® NMA99conc

5.3. INTRON® MMT98conc

6. Diesel production products

6.1. INTRON® cTane

6.2. INTRON® dFlow

6.3. INTRON® Wax

6.4. INTRON® dLube

7. Post-production and retail

7.1. INTRON® mClean

7.2. INTRON® dClean

7.3. INTRON® Dyes

8. Special packages

1. FACTS OF BUSINESS

PETRONAX Group of Companies can boast ten-year history. Back in 2003, the current founders of the company came up with a simple but ambitious idea - to make our world more beautiful and cleaner. To give an opportunity to our family and close persons, friends and familiar strangers to live in a better world. Then, at the beginning of its activities, current founders of PETRONAX started their business with small sales of detergents for fuel. By cleaning the fuel system, detergents helped to reduce harmful emissions in atmosphere, having a beneficial effect on the environment. Many countries practiced legislative regulation in the field of adding detergents to fuel. In countries such as the United States, Japan, China, the addition of these additives is obligatory. The owners of PETRONAX believe that it is thanks to this noble idea that their business has become successful and useful to people.

Today, PETRONAX is a large trading and manufacturing holding that includes more than several representative offices in the largest regions of the world, production and logistics bases in Europe, Asia and the CIS, as well as two large fuel and chemical laboratories in Germany and Poland.

PETRONAX's range of products is chemical products of the highest quality, meeting the highest European requirements and standards, capable of solving the most complex questions of the production and oil processing industries.

The markets covered by PETRONAX are countries of the European Union, the CIS, Eastern Europe, Africa and South America.



2. LABORATORY RESEARCH

The key issue of high-quality processing of our customers' requests is deep analysis and an individual approach to each situation. Starting from the very first moment of our communication, we try to identify the problem, delve deeply into it and look for the optimal solution for our partners. That is why we cooperate with the best fuel and chemical laboratories, analyzing dozens of oil and fuel examples, choosing the ideal solutions for each specific question. Our laboratories will do the necessary research as soon as possible and find the optimal solution for the most complex oil refining problems.



3. INTRON® TRADEMARK

Many years of experience in the oil refining industry, hundreds of processed and successfully completed orders, as well as long and effective cooperation with research groups have allowed us to develop a unique range of products that can solve the most complex questions of the industry. Under the INTRON® trademark, we have put together the best refining solutions. Our assortment always presents the best demulsifiers, corrosion inhibitors, hydrogen sulfide and mercaptan absorbers; octane enhancing additives; paraffin depressants and dispersants; cetane improvers, lubricating and cleaning additives; dyes and markers, and many others.



4. PRODUCTS FOR UPSTREAM AND OIL PREPARATION

Crude oil is a mixture of oil, water and gas with small admixtures of other substances. The most important task of the oil extraction and preparation system is the separation, that is, the separation of oil, gas and water from each other.

PETRONAX has identified the main problem areas of modern oil treatment:

- the destruction of oil-water emulsions
- reduction of hydrogen sulfide
- improving the corrosive properties of oil

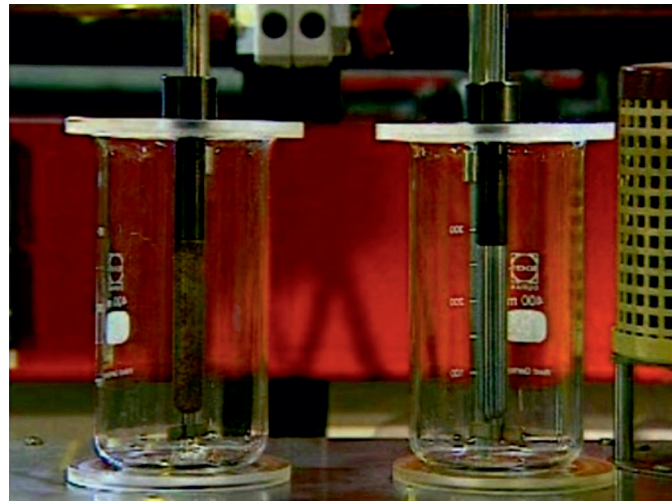


4.1. INTRON® dSol is a PETRONAX product line designed for efficient dehydration and desalination of oil by breaking stable oil-water emulsions. The principle of function of the Petronax surfactant is to reduce the interfacial tension at the interface between oil and water. The use of demulsifiers INTRON® dSol can significantly reduce oil losses during its further processing.

Product	Appearance	Density 15°C	Water, %	t°flash	t°solidification
INTRON® dSol 1030	Colorless liquid	0,930 g/cm ³	0,15 – 0,30	11°C	-32°C
INTRON® dSol 1033	Colorless liquid	0,941 g/cm ³	0,15 – 0,30	11°C	-32°C
INTRON® dSol 1036	Colorless liquid	0,945 g/cm ³	0,15 – 0,30	11°C	-32°C
INTRON® dSol 1039	Colorless liquid	0,950 g/cm ³	0,15 – 0,30	11°C	-32°C
INTRON® dSol 1042	Colorless liquid	0,955 g/cm ³	0,15 – 0,30	11°C	-32°C
INTRON® dSol 1045	Colorless liquid	0.970 g/cm ³	0,15 – 0,30	11°C	-32°C

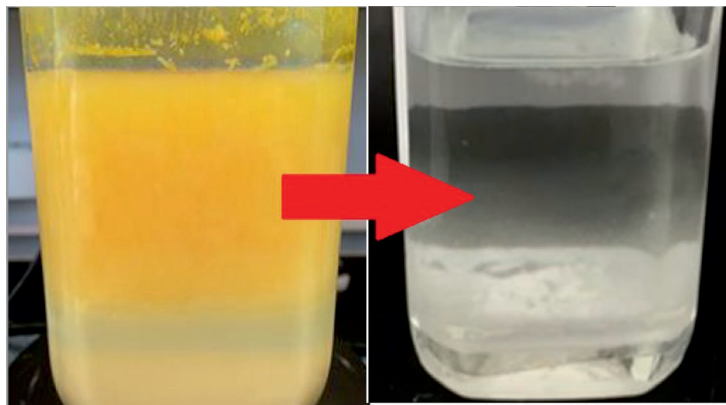
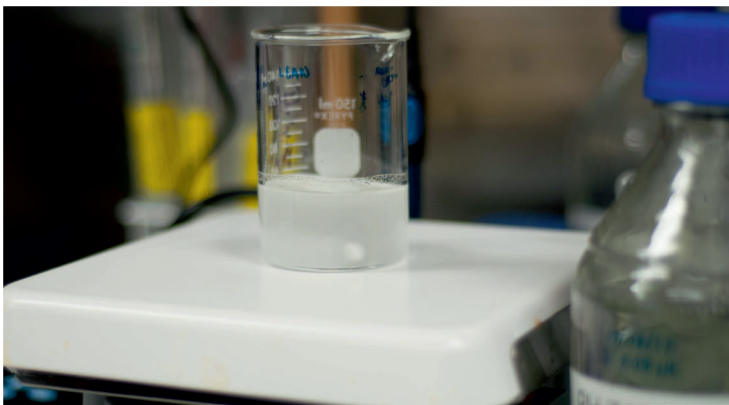


4.2. INTRON® antiCorr PETRONAX special chemicals for protection of oilfield and oil refining equipment. Corrosion inhibitors **INTRON® antiCorr** form a protective coating on the metal surface, which separates the aggressive chemical environment and the metal of the equipment.



Product	Appearance	Viscosity 20°C	Viscosity 40°C	t°flash	t°solidification
INTRON® antiCorr 19	Amber liquid	162 mm ² /s	56 mm ² /s	180°C	-10°C
INTRON® antiCorr 29	Amber liquid	155 mm ² /s	54 mm ² /s	180°C	-10°C
INTRON® antiCorr 38	Amber liquid	149 mm ² /s	51 mm ² /s	180°C	-10°C
INTRON® antiCorr 47	Amber liquid	146 mm ² /s	48 mm ² /s	180°C	-10°C

4.3. INTRON® antiH2S – reducing the hydrogen sulfide content in oil is one of the main problems of oil producers and refineries. Today, for effective work with hydrogen sulfide, the chemical method using hydrogen sulfide neutralizers has become most widespread. **INTRON® antiH2S** products are unique chemical derivatives and are used to reduce the negative impact of hydrogen sulfide on petroleum products.



Product	Appearance	PH	Relative density	t°flash	t°solidification
INTRON® antiH2S 7516	Transparent liquid	10,7	1,09 g/cm ³	99°C	-20°C
INTRON® antiH2S 7518	Transparent liquid	10,7	1,00 g/cm ³	99°C	-20°C
INTRON® antiH2S 7520	Transparent liquid	10,6	1,15 g/cm ³	99°C	-20°C
INTRON® antiH2S 7525	Transparent liquid	10,9	1,10 g/cm ³	99°C	-20°C

5. GASOLINE PRODUCTION PRODUCTS

Modern engines, characterized by high compression ratios, impose to improve requirements to the detonation resistance of fuels. When using gasolines that do not satisfy these requirements, it is possible explosive ignition of the fuel mixture before the front of the flame of the spark plug reaches it. This leads to rapid wear and breakdown of engine parts, high noise, incomplete combustion of fuel, wear of piston rings, increased smoke, high oil consumption and, as a result, reduced engine efficiency and its life.

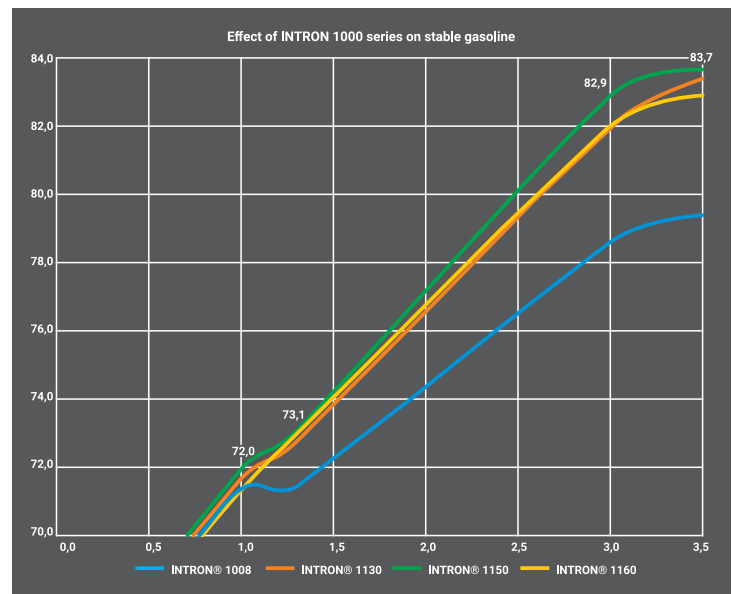
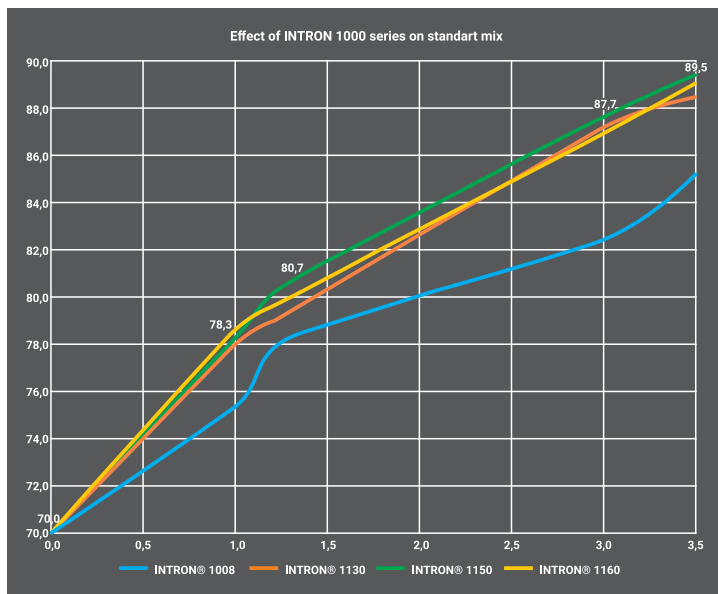
That is why, from the very beginning of its activity, PETRONAX company devoted a huge amount of time and money to research and develop products for the correction of the octane number of gasoline. Now we can confidently say that **INTRON®** is an **INTelligent** product for correction of octane number (RON) investigation.



*RON testing



5.1. INTRON® 1000 series is a unique line of products for the effective correction of the octane number based on aromatic hydrocarbons and organometallics developed by PETRONAX taking into account the stringent requirements of the European Union gasoline standard EN 228, Directive 2009/30 /EC. Thanks to the patented formula, the INTRON® 1000 Series allows to achieve an unprecedented increase in the octane rating of gasoline.



Product	Appearance	Density 20°C	t°flash	t°solidification
INTRON® 1108	Amber liquid	965 kg/m ³ ±2	85°C	-45°C
INTRON® 1130	Amber liquid	967 kg/m ³ ±2	85°C	-45°C
INTRON® 1150	Amber liquid	970 kg/m ³ ±2	85°C	-45°C
INTRON® 1160	Amber liquid	971 kg/m ³ ±2	85°C	-45°C

5.2. INTRON® NMA99conc is well-known fuel additive product founding on monomethylaniline with high concentration. The main distinguishing feature of the product is its high purity and high-quality aniline used in the production of this additive, which ensures its long-term stability to oxidative processes in the fuel.

Product	Appearance	Density 20°C	t°flash	t°solidification
INTRON® NMA99conc	Light yellowish liquid	990 kg/m ³	90°C	-57°C

5.3. INTRON® MMT98conc in accordance with EU Directive 2009/30 / EC, Art. 8a, since 2014, the content of manganese in the amount of not more than two milligrams per liter of fuel is allowed in gasolines produced and delivered to the European Union. PETRONAX produces and supplies a unique additive, INTRON® MMT98conc methylcyclopentadienyltri-carbonyl manganese, with 98% unique base material concentration. Only 8 grams of INTRON® MMT98conc per tonne of marketable gasoline for efficient octane performance.

Product	Appearance	Density 20°C	t°flash	t°solidification
INTRON® MMT98conc	Amber liquid	1,39 ± 0,3	96°C	-1°C



6. DIESEL PRODUCTION PRODUCTS

Modern economical diesel engines are a sophisticated engineering construction that places the highest requirements for fuels. Today, more than ever, the environmental properties of diesel fuel are relevant. **PETRONAX** has a full range of products to ensure a high-tech process for the production of diesel fuel and to give it the highest consumer properties.

6.1. INTRON® cTane modifier-promoter of diesel fuel combustion, designed to improve the flammability of diesel fuel in the combustion chamber, significantly increasing the base cetane number. The higher the cetane number of diesel fuel, the higher the ignition delay period. The optimal delay period for ignition of diesel fuel has a positive effect on the consumption, toxicity of exhaust gases and their impact on the recirculation system, as well as the entire working cycle of a modern diesel engine.

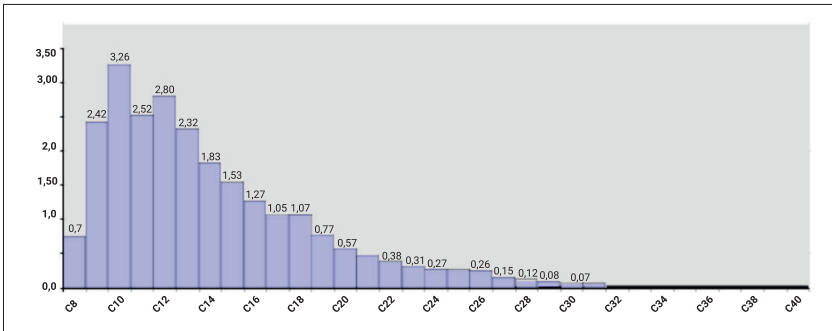
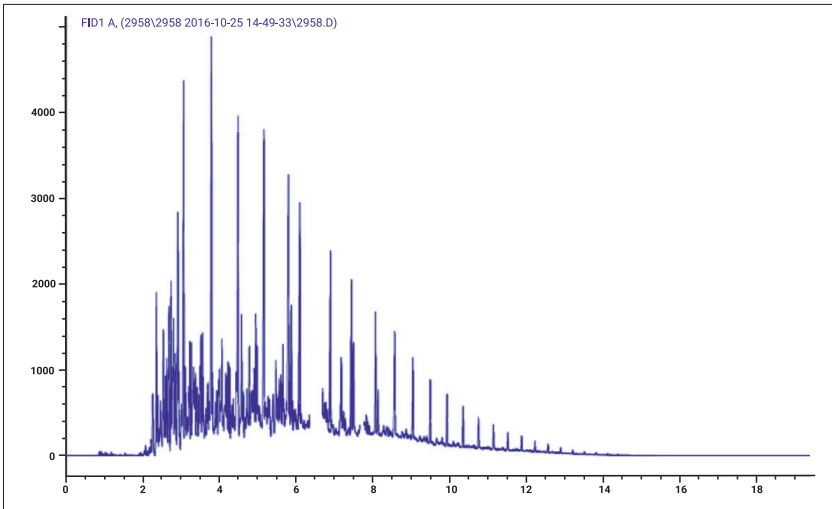


Product	Appearance	Density 20°C	Viscosity 20°C	t°flash	t°solidification
INTRON® cTane	Transparent liquid	965 kg/m ³	1,80 mm ² /s	135°C	-50°C

6.2. INTRON® dFlow Winter diesel fuel usage is difficult by crystallization of paraffins contained in diesel fuel. At low temperatures, paraffins bind to each other, turning diesel fuel into a light gel-like mass, unable to pass through the fuel filter, and as a result, the diesel engine stops start and work.

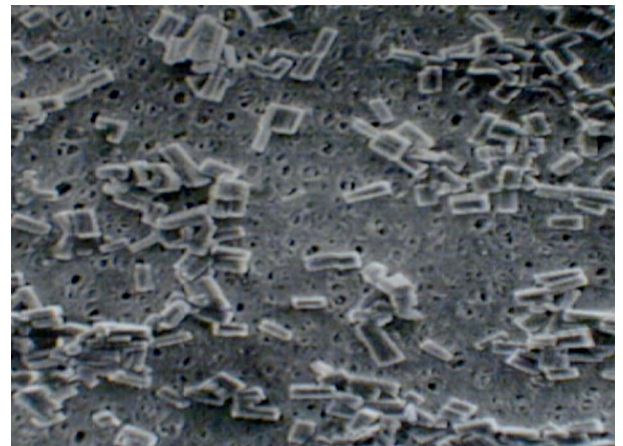
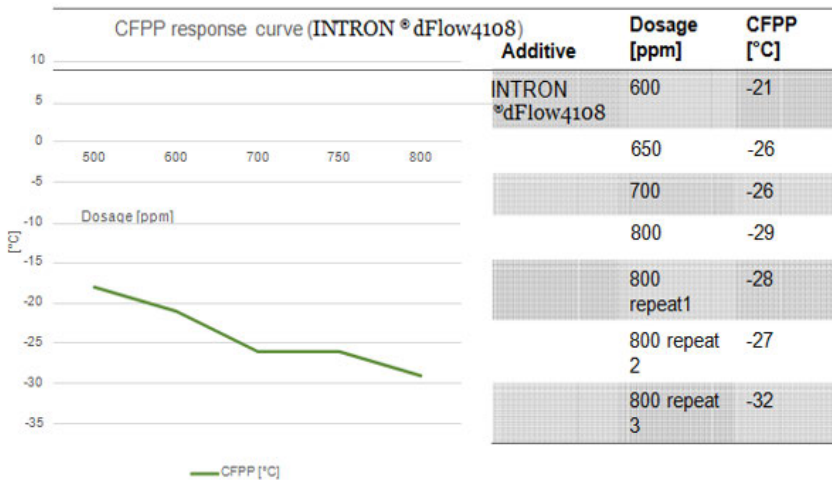


*paraffin test diesel without additive



* gas chromatograph n-paraffin test diesel without additive

INTRON® dFlow effectively works with the challenge of low temperatures. The highly concentrated chemically modified **PETRONAX** polymer binds to diesel paraffin molecules, preventing them from crystallizing at low temperatures. Multiple successful investigations have shown that only 600 grams of **INTRON® dFlow** per tonne of diesel fuel can lower the filterability temperature (PTF) by more than 20 degrees Celsius.



* Diesel with INTRON® dFlow4108

Product	Appearance	Density 40°C	Viscosity 40°C	t°flash	t°solidification
INTRON® dFlow 4108	Amber liquid	850 - 950 g/cm ³	50-300 mPa·s	≥ 65°C	+5/+15°C
INTRON® dFlow 4208	Amber liquid	850 - 950 g/cm ³	50-300 mPa·s	≥ 65°C	+5/+15°C
INTRON® dFlow 4308	Amber liquid	850 - 950 g/cm ³	50-300 mPa·s	≥ 65°C	+5/+15°C
INTRON® dFlow 4408	Amber liquid	850 - 950 g/cm ³	50-300 mPa·s	≥ 65°C	+5/+15°C
INTRON® dFlow 5108	Amber liquid	850 - 950 g/cm ³	50-300 mPa·s	≥ 65°C	+5/+15°C
INTRON® dFlow 5208	Amber liquid	850 - 950 g/cm ³	50-300 mPa·s	≥ 65°C	+5/+15°C
INTRON® dFlow 8618	Amber liquid	850 - 950 g/cm ³	50-300 mPa·s	≥ 65°C	+5/+15°C
INTRON® dFlow 9618	Amber liquid	850 - 950 g/cm ³	50-300 mPa·s	≥ 65°C	+5/+15°C

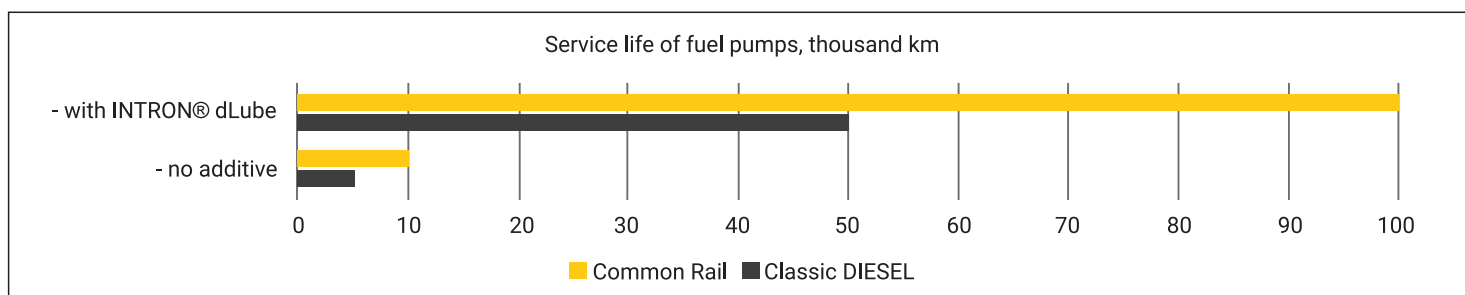
6.3. INTRON® Wax is a range of dispersants for medium distillates. They are a special series of dispersants for paraffins for diesel fuels, invented to prevent the separation of oil product during storage at depots and warehouses. INTRON® Wax is used in combination with INTRON® dFlow depressants and has a synergistic effect with them.

Product/Composition	a.i. [%]	Internal -No./ Batch	Volume [ml]	Dosage rate [ppm]	Storage temp. [°C]	Storage time [h]	Sediment [Vol.%]	CP [°C]	CP after test [°C]	ΔCP [K]
INTRON®dFlow 4108		LC 7490	100	600	-4	16	0, klar	+2	-0,6	-2,6
INTRON®dFlow 4108		LC 7490	100	600	-4	16	0, klar	+2	0,2	-1,8

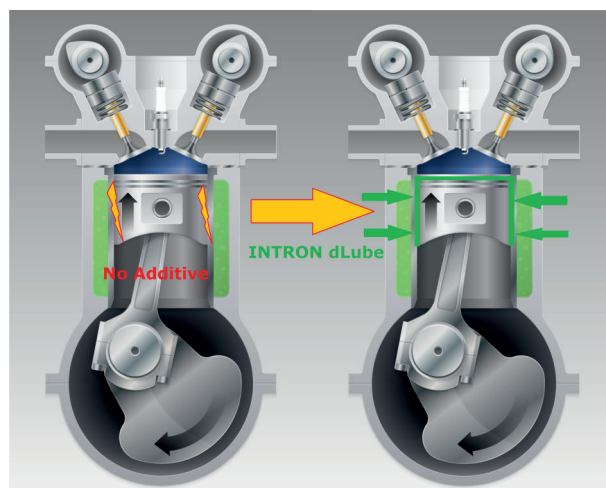
* sedimentation test INTRON dFlow4108

Product	Appearance	Density 40°C	Viscosity 40°C	t°flash	t°solidification
INTRON® Wax 0718	Amber liquid	850 - 950 g/cm ³	50-300 mPa·s	≥ 65°C	+5/+15°C
INTRON® Wax 0719	Amber liquid	850 - 950 g/cm ³	50-300 mPa·s	≥ 65°C	+5/+15°C

6.4. INTRON® dLube. European legislation imposes stringent requirements for the environmental acceptability of diesel fuels. According to the World Health Organization (WHO), one in eight deaths in the world in 2012 was the result of emission to air, making it the greatest risk to environmental health worldwide. In order to reduce emissions from diesel vehicles, states and oil refineries there is **spread implementation of fuel production with a high degree of hydrotreatment and low sulfur content** – not more than 50 particles per million (ppm), and ideally 10 or 15 ppm. The use of low-sulfur fuels in modern engines leads to a significant reduction in harmful emissions into the atmosphere, **but it negatively affects the operation of fuel pumps**. During road tests of cars running on fuel with 0.001% (10 ppm Euro 5), the failure of the pumps was observed after 10-13 thousand km, and on fuel with a sulfur content of 0.005 (50 ppm Euro 4) - after 20- 30 thousand km **PETRONAX** effectively solves the question by introducing the **INTRON® dLube** series into the range of lubricants. The use of lubricating additives in low-sulfur diesel fuel increases the service life of fuel pumps by several times.



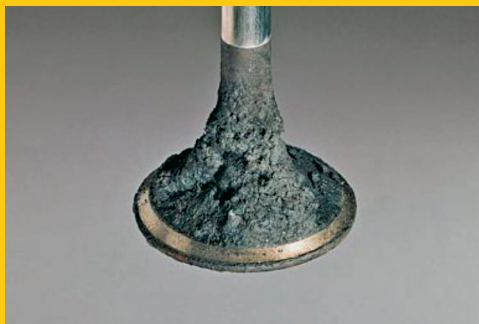
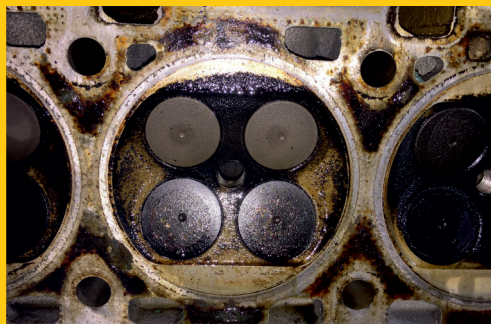
The principle of operation of the **INTRON® dLube** series additives is the formation of a durable tribochemical coating on the protected surface. It consists of products of mechanical-chemical transformations of an additive on a metal surface. The active polar groups contained in the **INTRON® dLube** additive form a fundamentally new substance as a result of chemical changes on the metal surface, which consists of the fuel conversion products, the additive itself and the metal of the rubbing pair. This gives the surface unique anti-wear properties that are highly resistant to mechanical friction.



Product	Appearance	Density 15°C	Viscosity 20°C	Acidity
INTRON® dLube 2090	Amber liquid	0,95 g/cm ³	40 mm ² /s	185 mg KOH/g
INTRON® dLube 2099	Amber liquid	0,91 g/cm ³	33 mm ² /s	196 mg KOH/g

7. POST-PRODUCTION AND RETAIL

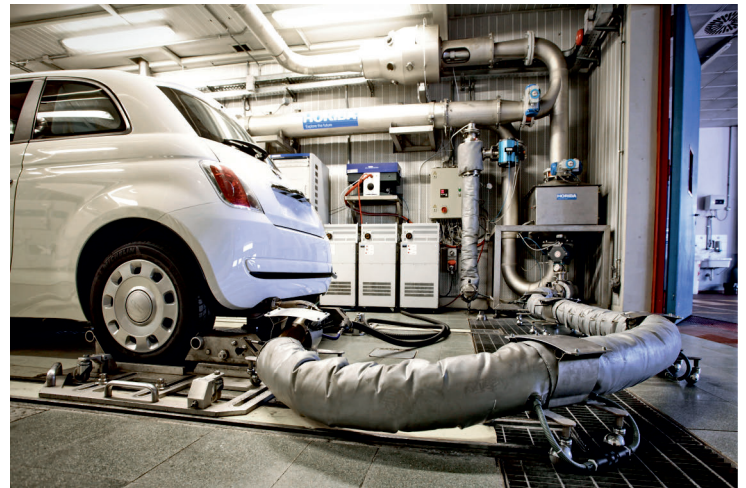
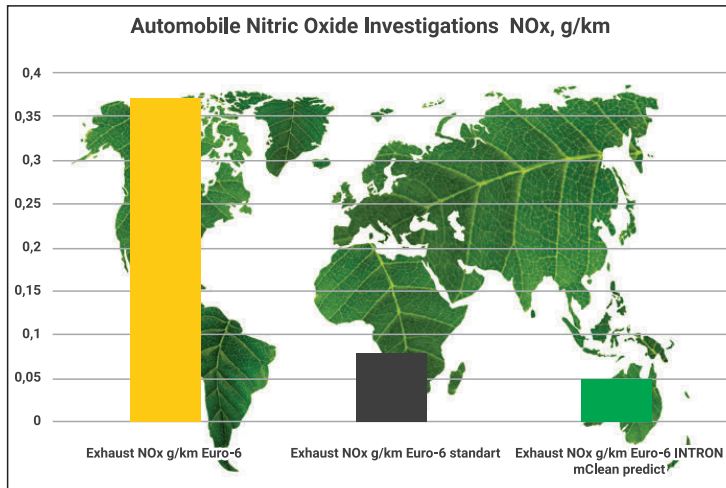
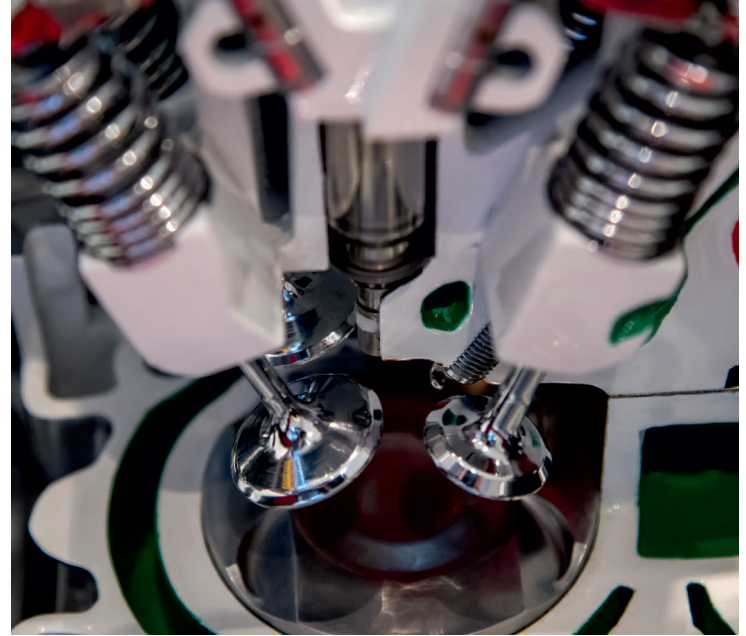
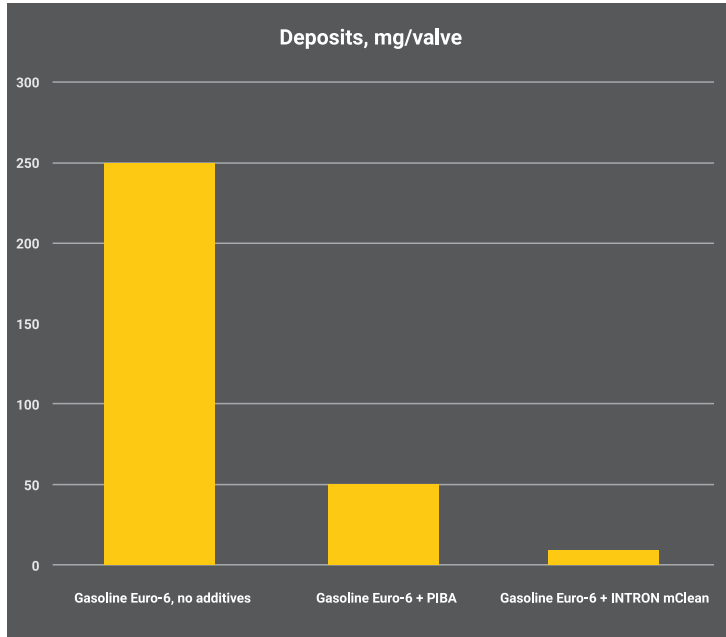
Despite the highest standards of fuel production, over time in the intake and fuel systems of a modern car form deposits. The air-fuel mixture, together with the oil, as a result of combustion forms stable coke formations on the intake valves, seats and manifolds. Due to strict environmental standards, engines of the latest generations have become highly sensitive to fuel. Higher combustion temperatures, reduced engine oil consumption, and the use of exhaust gas recirculation systems result deposits in the entire fuel system. Even the highest quality fuels of Euro-6 and higher standards over time have a negative effect on the engine in the form of deposits. As a result, the formation of deposits leads to an increase in fuel consumption, an increase in exhaust emissions, rising of engine acceptable capacity and a decrease of its power.



PETRONAX explores and offers a solution. The **INTRON® mClean** and **INTRON® dClean** series of multifunctional additive packages for gasoline and diesel fuel are able to efficiently remove existing and prevent the formation of new harmful formations in the fuel system of the engine, reducing harmful exhaust emissions and increasing engine function.



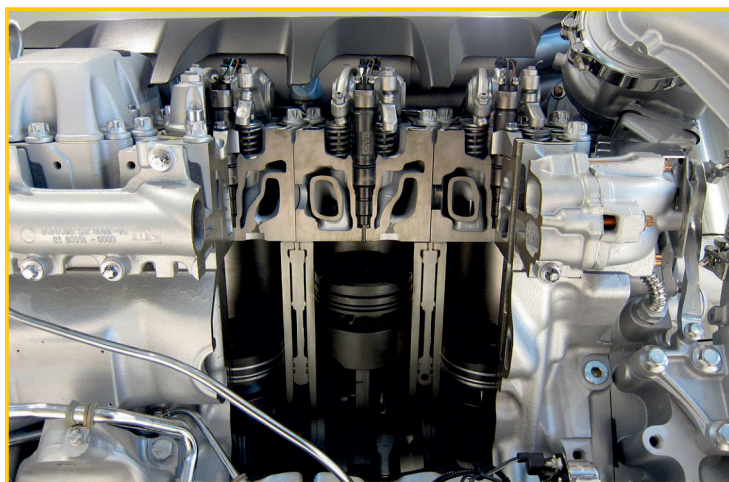
7.1. INTRON® mClean is a multifunctional additive package for gasoline, the use of which gives the fuel unique consumer properties. The basis for the production of INTRON® mClean is a modern detergent polyetheramine PEA. Numerous international studies have shown that PEA polyetheramine is the most effective substance in the world today for cleaning deposits coke on intake valves and internal engine parts, unlike, for example, polyisobutyleneamine based detergents (PIBA), which was popular several years ago. In addition, INTRON® mClean contains an effective demulsifier, a corrosion inhibitor and a friction modifier that increase engine acceptable capacity of fuel, increase power by reducing friction in the cylinders, remove water fuel emulsions, and keep the engine clean according to factory standards.



Product	Appearance	Density 15°C	t°flash	t°solidification
INTRON® mClean 3452	Amber liquid	0,930 g/cm ³	≥ 62°C	-30°C
INTRON® mClean 3640	Amber liquid	0,945 g/cm ³	≥ 62°C	-30°C
INTRON® mClean 3650	Amber liquid	0,950 g/cm ³	≥ 62°C	-30°C
INTRON® mClean 4110	Amber liquid	0,950 g/cm ³	≥ 62°C	-30°C

7.2. INTRON® dClean Modern Common Rail diesel engine systems create new challenges and quality requirements for diesel fuel. The distribution of it through the piezo nozzle creates fundamentally different conditions and operating modes of powerful and economical diesel engines. The multifunctional INTRON® dClean additive packages give diesel fuel unique consumer properties, protecting the fuel system and direct injection against the negative effect of coke deposits. INTRON® dClean additive packages contain a unique agent that can remove existing and inhibit the formation of new deposits.

In addition, the INTRON® dClean package includes a corrosion inhibitor, an ignition promoter, and a friction modifier. At the request and specification of the client, other agents can be added.

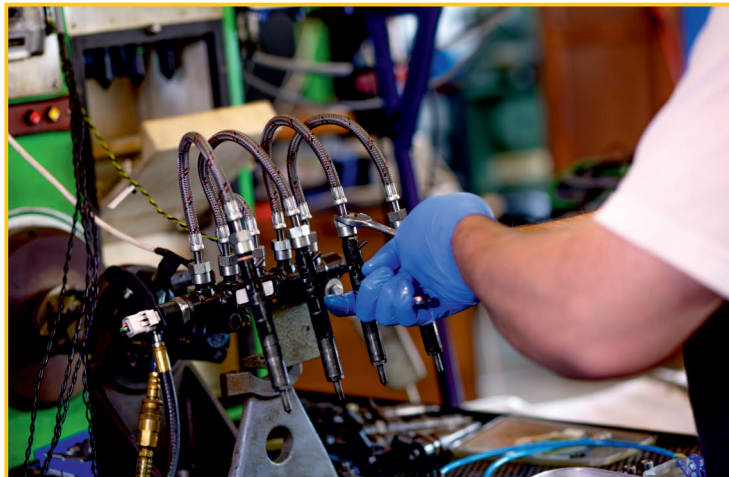


*Common Rail Diesel System

Product	Appearance	Density 20°C	t° flash	t° solidification
INTRON® dClean 2516	Amber liquid	0,89-0,91 g/cm ³	≥ 45°C	-43°C
INTRON® dClean 2517	Amber liquid	0,89-0,91 g/cm ³	≥ 45°C	-43°C
INTRON® dClean 2518	Amber liquid	0,89-0,91 g/cm ³	≥ 45°C	-43°C
INTRON® dClean 2520	Amber liquid	0,89-0,91 g/cm ³	≥ 45°C	-43°C



*Diesel nozzle spray test



7.3. INTRON® Dyes. The serie of dyes and fuel markers for fiscal and commercial use.

Product	Appearance	Density 15°C	t° flash	t° solidification
INTRON® Dye Red	Red liquid	0,98 g/cm ³	≥ 61°C	-25°C
INTRON® Dye Blue	Blue liquid	0,98 g/cm ³	≥ 61°C	-25°C
INTRON® Dye Green	Amber liquid	0,98 g/cm ³	≥ 61°C	-25°C

8. SPECIAL PACKAGES

PETRONAX takes care of its customers and does not disregard any request. Thanks to our vast experience and highly qualified scientific base, we can create any individual additive packages for the needs of our customers. According to the task, PETRONAX will offer the best solution for each specific situation.



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