SNPH

FUEL ADDITIVES

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FIRST IN OILFIELD CHEMISTRY

47
YEARS OF EXPERIENCE





>220
PRODUCTS

333
PATENTS AND COPYRIGHT CERTIFICATES

18 000 TONS
OF ANNUAL PRODUCTION VOLUME

Own production facility in Nizhnekamsk

520
SCIENTIFIC PUBLICATIONS

MAIN AREAS OF ACTIVITY



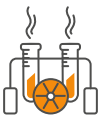
ENHANCED OIL RECOVERY AND WELL STIMULATION:REAGENTS AND TECHNOLOGIES



CHEMICAL REAGENTS FOR OIL PRODUCTION, TRANSPORTATION, AND TREATMENT



CHEMICAL REAGENTS FOR WELL CONSTRUCTION



CHEMICAL REAGENTS FOR OIL REFINERIES



SUPPLY OF INSTRUMENTS AND LABORATORY EQUIPMENT



LABORATORY RESEARCH AND ENGINEERING SUPPORT SERVICES

THE ADVANTAGE OF WORKING WITH US – A COMPREHENSIVE APPROACH TO SOLVING TASKS



AUDIT, MONITORING, AND RESEARCH



PRODUCTION OF CHEMICAL PRODUCTS



DEVELOPMENT AT OUR OWN SCIENTIFIC CENTER



AUTHOR'S SUPERVISION AND TECHNICAL SERVICE



PILOT-INDUSTRIAL TESTING

DIESEL
FUEL ADDITIVES



COLD FILTER PLUGGING POINT ADDITIVES

Base:
EVA, amides

- Prevents growth and agglomeration of paraffin particles
- Ensures required low-temperature properties and sedimentation stability

LUBRICITY (ANTI-WEAR) ADDITIVE

Base:
fatty acids and their esters

- Formation of adsorption layers on the metal surface, reducing friction
- Reduction of fuel wear scar diameter

MULTIFUNCTIONAL ADDITIVES

Base:
2-ethylhexyl nitrate
+ lubricity additive

- Increases cetane number and lubricity of the fuel

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COLD FILTER PLUGGING POINT ADDITIVES (CFP)

- Improves the low-temperature properties of diesel fuel (DF)
- Enables increased diesel fuel production
- Prevents the formation of paraffin layers at the bottom of storage tanks/fuel tanks (during long-term storage)

FACTORS INFLUENCING CFPP EFFECTIVENESS



Fuel quality



Content and molecular weight distribution of n-paraffinic hydrocarbons



Composition of the hydrocarbon medium



Presence of other additives

MECHANISM OF ACTION OF CFPP ADDITIVES



DIESEL FUEL WITHOUT ADDITIVE

Large crystal agglomeration,
leading to gel formation and loss of fuel mobility

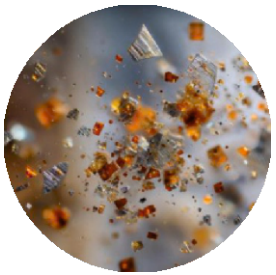
Crystal size: 0.1 – 1 mm



DIESEL FUEL WITH DEPRESSANT

Small needle-like crystals that pass through the diesel filter but precipitate over time

Crystal size: 0.02 – 0.05 mm



DIESEL FUEL WITH DEPRESSANT AND DISPERSANT

Dispersant further reduces crystal size.
Paraffins form a stable dispersion

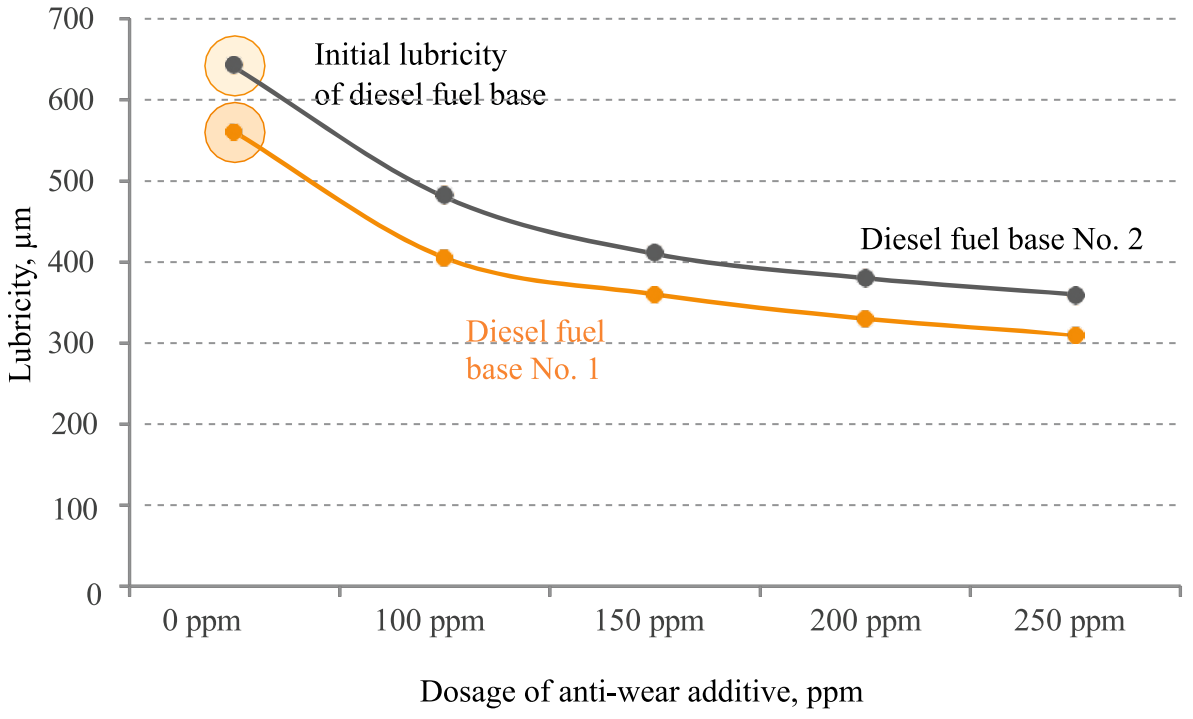
Crystal size: 0.005 – 0.02 mm

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LUBRICITY (ANTI-WEAR) ADDITIVE

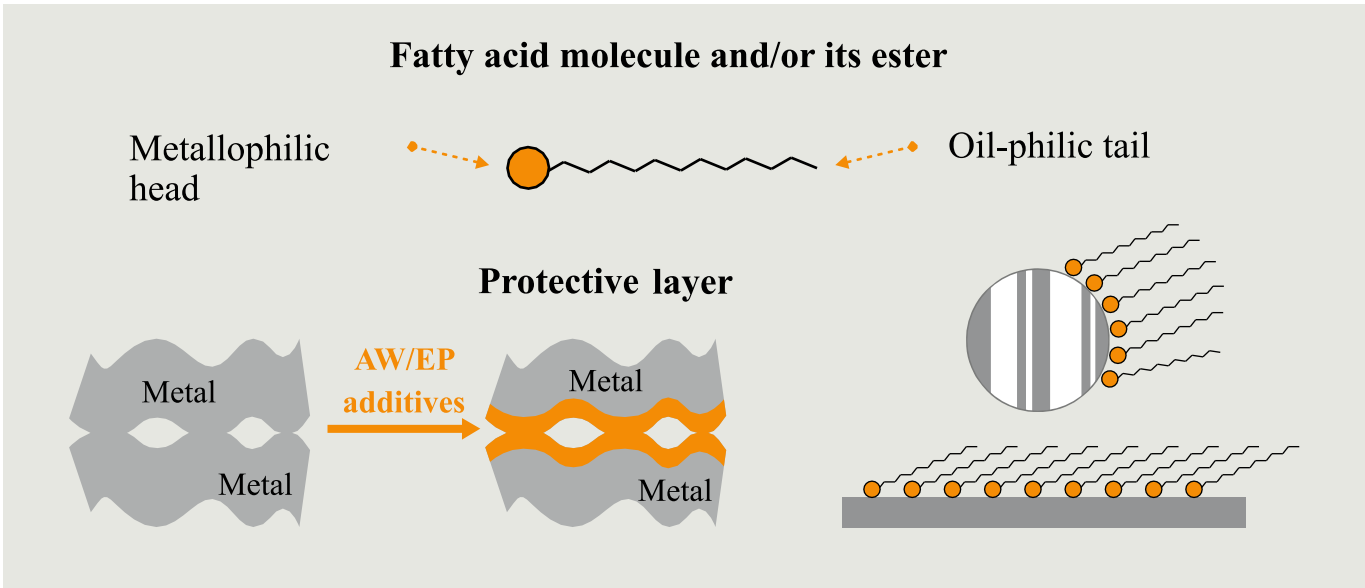
- Improves the lubricity of diesel fuel

- Prevents mechanical wear of fuel system components



THE EFFECTIVENESS OF ANTI-WEAR ADDITIVES IS INFLUENCED BY

- Sulfur content in the fuel
- Fractional composition of the fuel
- Fuel viscosity
- Presence of other functional additives in the fuel (cetane improvers, depressant-dispersants)



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MULTIFUNCTIONAL ADDITIVES

BASE 2-ETHYLHEXYL NITRATE + LUBRICITY ADDITIVE



SAVINGS ON DOSING SYSTEMS

IMPROVED FUEL LUBRICITY

SAVINGS ON STORAGE TANKS

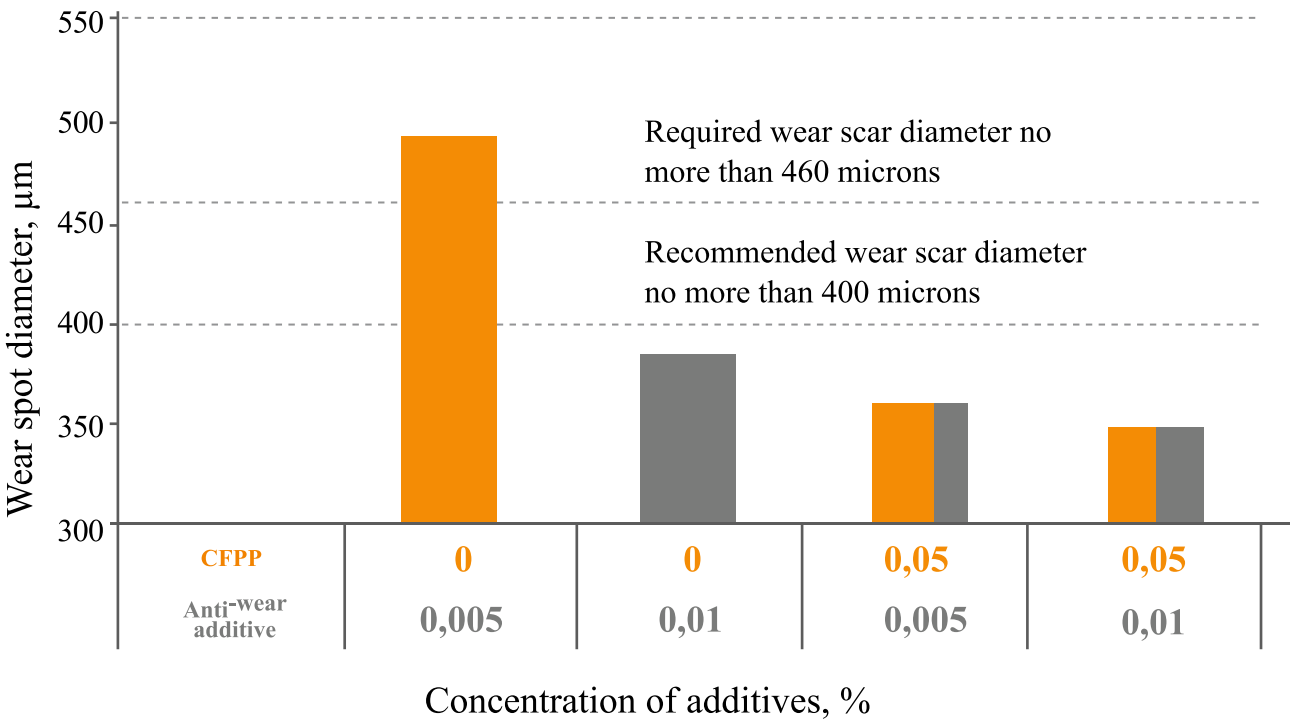


INCREASED CETANE NUMBER

INDUSTRIAL APPLICATION OF DIESEL FUEL ADDITIVES

When producing diesel fuels with additives, their compatibility must be considered, as additives can be antagonistic, negatively affecting each other's effectiveness, or they may exhibit synergy.

- Effect of a CFPP combined with an anti-wear additive on diesel fuel lubricity





ADDITIVES FOR HEAVY PETROLEUM PRODUCTS
(gas oils, fuel oils)

POUR POINT DEPRESSANT ADDITIVE (PPD)

Base:
polymers of various structures and compositions

- Prevents growth and agglomeration of paraffin particles
- Ensures the required pour point and solidification temperatures

- Reduces pour point and solidification temperature

- Shortens draining and pumping time of petroleum products

- Improves viscosity and rheological properties


POUR POINT DEPRESSANT ADDITIVE
SNPH-NP-2310

INDUSTRIAL APPLICATION



Heat the additive to
50–60 °C



It is recommended to dose the reagent as a 1:1 solution in a hydrocarbon solvent
(to improve mixing)



The temperature of the treated fuel should be at least 60–70 °C



Ensure thorough mixing of the product with the additive



ADDITIVES FOR AUTOMOTIVE GASOLINES

OCTANE-BOOSTIN G ADDITIVE

Base: nitrogen-containing aromatic compounds

- Designed to increase the octane numberand improve the performance characteristics of gasoline

MULTIFUNCTIONAL CLEANING ADDITIVE

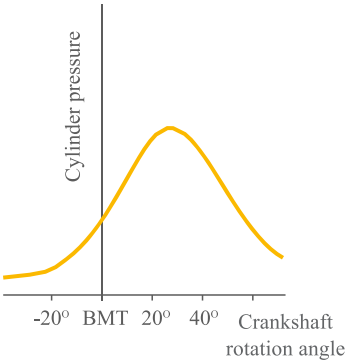
Base:
a mixture of polymer compounds and functional additives

- Designed to prevent deposits on gasoline engine components during vehicle operation

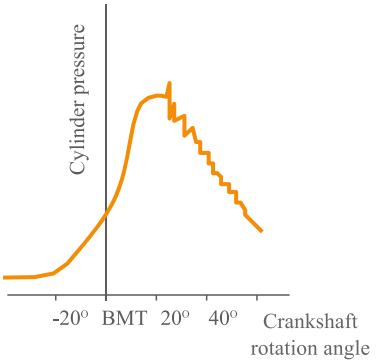
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OCTANE-BOOSTING ADDITIVE

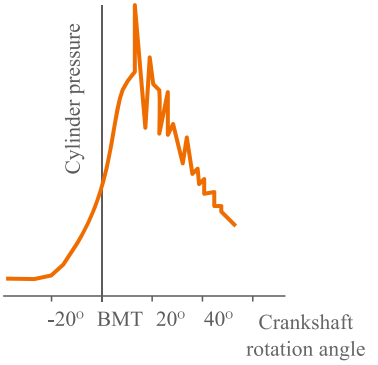
- Increases the octane number of the original gasoline
- Increases detonation resistance of gasoline
- Reduces toxicity of exhaust gases
- Doesn't cause carbon formation due to the absence of organometallic antiknock agents in the composition
- Eco-friendly composition: does not contain N-methylaniline, which is prohibited for use
- Reduces pressure and temperature in the combustion chamber, thereby increasing engine life



Normal combustion



Weak detonation

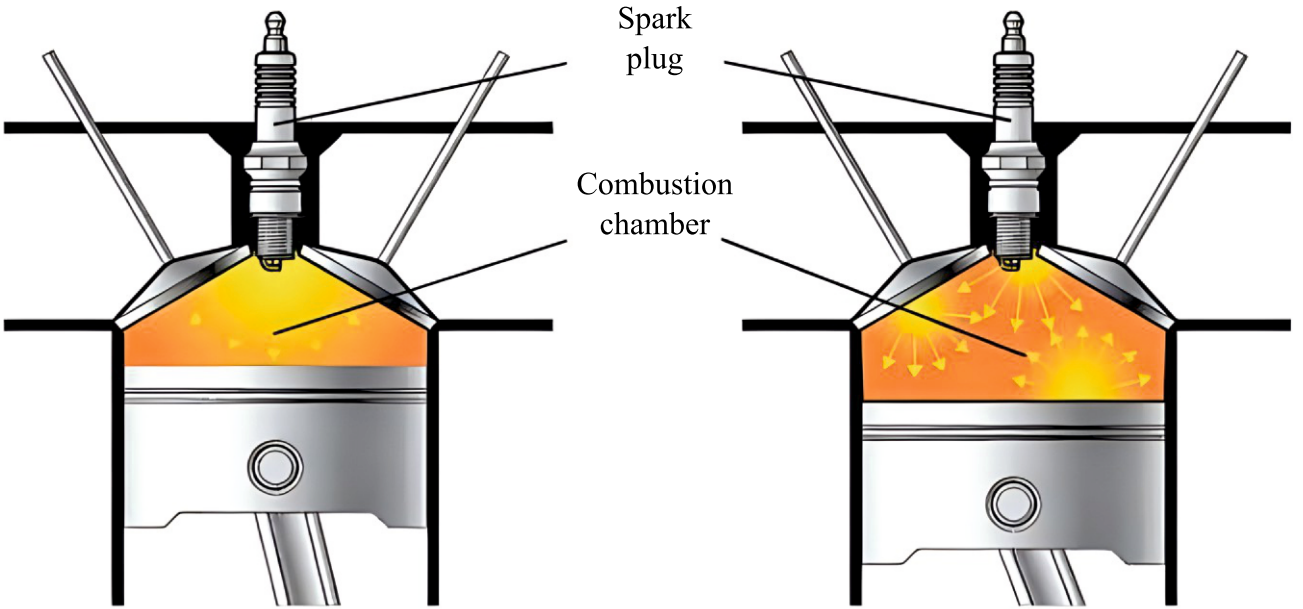


Strong detonation

THE EFFECTIVENESS OF AN OCTANE-BOOSTING (ANTI-KNOCK) ADDITIVE DEPENDS ON:

- Hydrocarbon composition of base gasoline

- Compatibility with additives for other functional purposes (including detergent additives)



Normal combustion

Combustion with detonation

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MULTIFUNCTIONAL CLEANING ADDITIVE (MCA)

- Prevents fuel system contamination and removes existing deposits
- Protects and maintains the cleanliness of the engine fuel injection system
- Ensures clean intake valves
- Helps control deposit formation in the combustion chamber
- Extends the service life of the engine and intake system components

ENGINE TEST CEC F-05-93
ON MERCEDES-BENZ M102E ENGINE

Base gasoline AI-95 without MCA

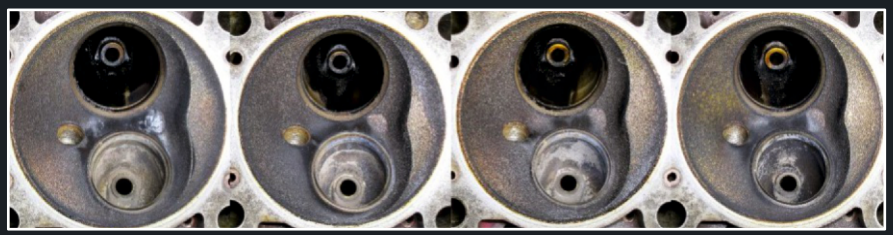


Appearance of the combustion chamber

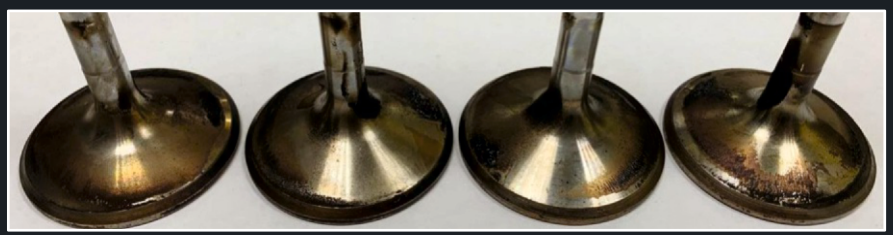


Condition of intake valves

Base gasoline AI-95 with MCA



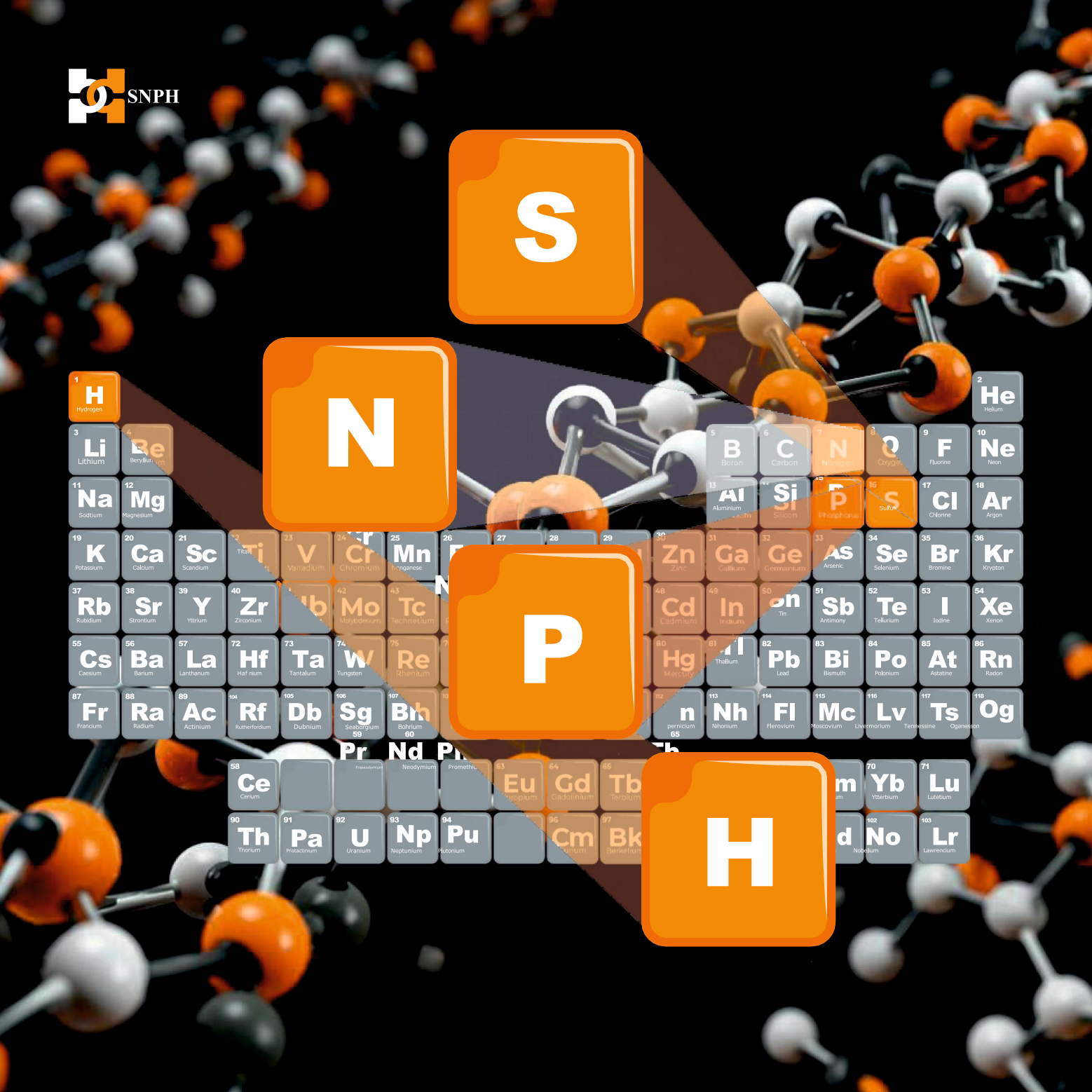
Appearance of the combustion chamber



Condition of intake valves

Notes

Notes


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