



Ferrocene

Efficient and Multifunctional Additive

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| Introduction | <p>Namely cyclopentadienyl iron with the chemical formula of $\text{Fe}(\text{C}_5\text{H}_5)_2$, is an efficient and versatile additive and chemical reagent. Ferrocene is a metal organic complex with the smell of camphor. This orange crystal or powder has a melting point of 172–174°C, boiling point of 249°C. It is dissolved in organic solvents such as benzene, diethyl ether, methanol, ethyl alcohol, gasoline, diesel oil, and kerosene, but not in aqueous. It is chemically steady and poisonous less, not reacting with acid, alkali and ultraviolet. It doesn't decompose until 400°C. Mixed with Ferrocene, the diesel oil can be preserved for a long use.</p> | |
| Application | 1 | Used and fuel catalyst for rocket (aero plane) propellant, it can improve combustion speed by 1–4 times, lower the temperature of exhaust pipes, and avoid infrared chase. |
| | 2 | It can be used as gasoline antiknock (in place of tetraethyl lead) to produce leadless gasoline. |
| | 3 | <p>Ferrocene has been proved that it has a function of improving the combustion of fuel and reducing the carbon deposits in engines, and decrease emissions during the combustion. Such function has been proved when adding Ferrocene into any form of fuels, solid, liquid or aeriform. Especially when burning the Hydrocarbon compound, it comes out with remarkable effect after adding Ferrocene into. As some relating testing, after combusting the gasoline with 0.1% wt of Ferrocene, the CO and Formaldehyde in the exhaust can be decreased 88% and 19% separately. At the same time, the Ferrocene can bring an anti-knock effect that is why it could be used as one kind of additive for the un-leaded gasoline to increase the Octane number. In a word, Ferrocene is used widely in fuel to improve the combustion to reduce the consumption of Fuel and to decline the pollution to the environment and air finally.</p> |
| | 4 | <p>Used in fuel oils such as diesel oil, heavy oil, light oil ect.... It can eliminate smoke, save energy and reduce air pollution. Adding 0.1% Ferrocene to diesel oil can cut down the consumption of oil by 10--14%, eliminate smoke by 30--70%, and improve power by more than 10%. And no deposit is left at the spray. So it plays a dominant role in the development of fuel oils and improvement of their moderate conditions.</p> |
| | 5 | It can promote ammonia synthesis reaction under moderate condition. |
| | 6 | <p>As protective agent and stabilizer, it can increase softening point and heat stability of polymer, improve the properties of plastic, fuser, cellulose ect.... protect polyanthuses, polypropylene, polyester ect.... from depolymerization caused by ultraviolet.</p> |
| | 7 | Used in luminous sensitive materials, it can replace silver on film. Moreover, it can also be used in photosensitive copy and printing with high resolution. |
| | 8 | It can be used for making large scale integrated circuit board, enhancing light sensitivity by four times, improving accuracy, simplifying technical process, and eliminating pollution. |
| | 9 | As photosensitive catalyst, it can promote the photochemical degradation of plastic films, reducing white pollution. |
| | 10 | It is used as medical ingredients for anticancer, antibiotic, and blood-tonic preparations. |
| | 11 | It can be used for producing fertilizer. |
| | 12 | It can be used for making quality carbon cellulose. It can be used as biochemical and analytical reagent. |