

## Ferrocene

► Executive standard: Q/TY·J08.19-2022

► English alias: Dicyclopentadiene iron

► CAS RN: 102-54-5

► 1. Physical and chemical properties:

1.1 Molecular formula:  $C_{10}H_{10}Fe$

1.2 Molecular Weight: 186.03

1.3 Molecular formula (current):  $Fe(C_5H_5)_2$

1.4 Structure formula:



$Fe^{2+}$



1.5 Character: Orange needle crystal. Its boiling point is 249°C. Sublimation will happen when temperature reaches to 100°C. It is stable in the air and at room temperature. It has strong ultraviolet absorbent ability and thermal stability.

► 2. Technical indexes:

Remarks: Crystal ferrocene has better solubility than powder ferrocene

Item	1 <sup>st</sup> grade	2 <sup>nd</sup> grade	3 <sup>rd</sup> grade	Crystal grade
Ferrocene content, %(m/m)	≥98.5	≥98.5	≥98.5	≥98.5
Melting point, °C	170~174	170~174	170~174	170~174
Free Fe, ppm	≤ 100	≤ 200	≤ 300	≤ 100
Pass rate (by standard sieve of 80 mesh), %	≥87	≥87	≥87	-
Appearance	Orange Powder			Orange granular

► 3. Application: 1) Ferrocene can be used as energy-saving smoke suppressant and antiknock agent for fuel. 2) It can also be used to make ammonia synthesis catalyst and rubber curing agent. 3) It can replace toxic tetraethylene lead in gasoline as antiknock agent to prepare high-grade unleaded gasoline. 4) Used as radiation absorber, heat stabilizer, light stabilizer and smoke inhibitor. 5) Ferrocene is the raw material to synthesis precursors of drugs, two most prominent derivatives, ferroquine and ferrocifen, have since been studied extensively for the treatment of malaria and cancer, respectively.

► 4. Safety instructions: Low toxic. LD<sub>50</sub>> 1320mg/kg through skin of rabbit; LD<sub>50</sub>> 832mg/kg by taking orally of mouse.

► 5. Packing: Woven bag (lined with plastic bag), net weight 25 kg per bag.

► 6. Storage: Sealed preservation. Store at cool and ventilate condition. Avoid sun exposure and heat. The shelf life is 24 months after manufactured date. It is still available if the retest results of the properties are qualified after expired date. After the storage period expires, the samples should be re-sampled and re-inspected according to the technical specifications in Part 2, and they can still be used after passing the test.

► 7. Transportation: Keep upright when transported. Avoid violent collision and sun exposure. Do not transport with strong oxidizers.

In addition. We are able to develop custom-made products according to the clients' requests.