

Nano Structured Materials- Nanocat[®] Superfine Iron Oxide

While other companies are establishing plans to get into the nano business, MACH I is already in a leadership position, manufacturing and selling NANOCAT[®] Superfine Iron Oxide (A 3 nanometer particle) to the advanced materials market and aerospace industry.

NANOCAT[®] Superfine Iron Oxide is the first in a family of NANO-structured materials, with more products being developed.

NANOCAT[®] Superfine Iron Oxide (SFIO) is an amorphous ferric oxide with much finer particle size and greater specific surface area than any other commercially available form. It excels as a catalyst for chemical processes including synthesis, cracking, and oxidation. In solid rocket propellants it provides high burning rate, low pressure exponent, and safety. Properly dispersed, it is a remarkably effective screening agent for ultraviolet light. Synthesized by a unique vapor-phase process, **NANOCAT SFIO** is free of impurities that poison conventional catalysts, and is suitable for use in foods, drugs, and cosmetics.

Typical Properties

Composition	Ferric Oxide
Source	Synthetic
Structure	Amorphous
Physical Form	Free Flowing Powder
Color	Reddish Brown
Pigment Character	Transparent
Purity	99.3
Surface Area, m ² /g	250
Bulk Density, g/ml	0.05
Particle Size, nm	3

Heavy Metal Content:

<u>Federal Specifications*</u>	<u>NANOCAT SFIO</u>
Arsenic, max.: 5, 3, 3 ppm	<1.0 ppm
Lead, max.: 20, 10, 10 ppm	<0.4 ppm
Mercury, max.: 3, 3, 3 ppm	<0.1 ppm

* Code of Federal Regulations (CFR) Title 21, Heavy Metal Specifications for Iron Oxides in Foods (73.200), Drugs (73.1200), and Cosmetics (73.2250).