NANOCAT® IRON OXIDE POWDER (II, III)

PRODUCT IDENTIFICATION
Identification label: IRON OXIDE POWDER (II, III); chemical name: iron oxide powder (II, III); chemical formula: Fe₃O₄. This powder is produced using electric explosion of metallic wire in air.

CHEMICAL COMPOSITION
Material: iron oxide – not less 99%. The balance is absorbed gases as follows CH₄, CO₂, Ar, N₂. Chemical composition of a source wire is as follows: Mn: 0.78-0.82 %; Cr: <0.1 %; Ni: 0.08-0.098 %; Si: 0.66-0.82 %; Cu: 0.081-0.082 %; V: <0.05 %; Mo: <0.01 %; W: <0.1 % mass.

PHYSICAL AND CHEMICAL PROPERTIES
Appearance and color: brown powder. The bulk density is 2.2 g/cm³. Particles readily form micro-agglomerates; BET specific surface area ~30 m²/g. Melting point - 1550°C. Average particle size is 70 to 100 nm. No smell. Iron oxide powder (II, III) can be used in making magnetic storage devices.

DANGER
Safe.

HEALTH HAZARD
IRON OXIDE POWDER DRY is a nuisance dust that may irritate the respiratory organs as the usual dust.

SAFE HANDLING
Follow common and standard health-protection rules.
Fig. 1 TEM micrographs of iron oxide powder particles.

Fig. 2 X-Ray diffraction of iron oxide powder.

Fig. 3 Particle size distribution.
X-axis: particle size in nm;
Y-axis: number of particles.

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