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Safety Data Sheet

V# 0552168

Product Name: permanent ferrite magnets
According to GB / T17519-2013 "is the description of the preparation of Safety Data Directory"
Preparation time: September 1, 2015

Section 1: Product and company information

Product Name: Ferrite Magnet
Company Name: Master Magnetics, Inc.
Address: 747 S. Gilbert St. Castle Rock, CO 80104
Fax: 303-688-5303
Emergency phone : 800-525-3536
Products Recommended Use: Automotive motor, air conditioner motors, speakers, magnetic separator, etc.

Section 2: Hazards

Emergency Overview:

Product dark brown, odorless, non-toxic, solids, hardness HRC50 ~ 20, without any side effects not magnetized, after magnetizing, do not touch the watch.

Risk category:

Not magnetized magnet without any harm, no oxygen, moisture has no effect.
Do not close magnetized magnet magnetic conductive objects and watches.

Precaution:

Magnetized magnet has left more than 70cm guide magnet.

Safe storage:

Store in a dry place, finished locked up.

Disposal:

Return back to the manufacturer to re-use as feedstock.

Health hazards:

The human body without any harm, 20mT small amount of magnetic field on the following people have blood stasis, the role of fitness and strength.

Environmental hazards:

No effect on the surrounding environmental factors.

Section 3: Composition / information on ingredients

Name Formula
Ferrite Sro · $6Fe_2O_3$ (solid reaction product)

Section 4: First Aid Measures

The solid product is a non-metallic objects, nor cannot be inhaled into edible.

Section 5: Fire-fighting measures

Product is a non-metallic objects, good stability, can be used in a range of -60 °C ~ + 400 °C, fire, water.

Section 6: Accidental

Worker protective measures, protective equipment and emergency measures.
Magnet hand grasping the human body without harm.
Do not place hands and body in the middle of two magnets attract to avoid pinching the magnet attraction. Magnetic fields on people without harm.

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Section 7: Handling and Storage

Handling Precautions:

Magnet should gently, anti-collision damage.
Separate the two magnets attract, should dislocation movement.
Treasury should be equipped with fire-fighting equipment, and safe passage unobstructed exit.
Non-inflammable and explosive materials warehouse, peripherals within two meters without fire.
Treasury should be clearly identified and documented, the implementation of the FIFO.
Treasury should ventilation, lighting.

Section 8: Exposure Controls / Personal Protection

Workplace to allow gloved hand or warrant products, non-toxic, no side effects, attention around the guide magnet with magnetic attraction when the magnet moves, the general magnetic human body without harm.

Section 9: Physical and Chemical Properties

- Crystal structure: magnetoplumbite type Pb [Fe $_{7.5}$ Mn $_{3.5}$ Al $_{0.5}$ Ti $_{0.5}$] O $_{19}$, crystals were hexagonal plate, the easy magnetization direction of the hexagonal axis (c-axis) parallel to the crystal axis ratio of about 5.9: 23
- Component: MO · 6Fe $_2$ O $_3$; M = Ba, Sr, Pb and Ca (there exists La) elemental or compound
- Magnetization Source: ferrimagnetic uncompensated (magnetic iron oxide gold)
- The magnetic moment per unit mass: 87.5uWb · m / kg (70G · cm3 / g)
- Saturation magnetization: about $_{4750}$ · 10 $^{3/4}$ π A / m (= 380kA / m) $_{(4}$ π M $_S$ = 4750G S)
- Coercivity main cause: the magnetic anisotropy
- Magnetic anisotropy field $_{2/4^{\pi}}$ 10 ^{7} A / m
- Remanence temperature coefficient: -0.2% / ℃
- Coercivity temperature coefficient: about + 0.48% / ℃
- Magnetostrictive coefficient: about -5 × 10 ^{6}
- Specific heat: 0.2cal / g · o $_c$
- Reply permeability: 1.05 to 1.3 suitable for air gap field source
- Curie temperature: 450 ℃
- Resistivity: 10 ^{6} ~ 10 ^{8} Ω · cm
- The theoretical density of single crystal: 5.3g / cm ^{3}
- Forming a single domain critical size: R $_0$ = 0.8um
- Wet-forming products, the actual density of the magnetic field: 4.9 ~ 5.1g / cm ^{3}
- Thermal expansion coefficient ΔL / L / ℃ 25 ~ 450 ℃; perpendicular to the direction of orientation ^{10} × 10 -6cm $^{/cm}$
- Parallel to the orientation direction of ^{14} × 10 -6em $^{/cm}$
- Heat transfer coefficient: 0.007cal / cm ^{2}
- Porosity: ≈ 5%
- Elastic modulus: 1.9 × 10 ^{6} kgf / cm ^{2}
- Poisson's ratio (poisson): 0.28
- Bending strength: 61.74Mpa (6.3 × 10 ^{2} kgf / cm ^{2})
- Compressive strength: 882Mpa (9.0 × 10 ^{3} kgf / cm ^{2})
- Tensile strength: 34.3Mpa (35 × 10 ^{2} kgf / cm ^{2})
- Operating temperature range: -40 ~ + 85 ℃

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Section 10: Stability and reactivity

(At room temperature (20 ± 2 °C) under use, the product temperature.)

Mechanical performance requirements

Low temperature test

According to GB / T2423.1 Ab test conducted by the magnet -40 °C ± 3 °C environment stored for 2 hours. After 2 hours at room temperature recovery, maximum energy product (BH) max rate of change ≤ 8%.

Hot test

According to GB / T2423.2 Bb test conducted by the magnet 125 °C ± 2 °C environment stored for 2 hours. After 2 hours at room temperature recovery, maximum energy product (BH) max rate of change ≤ 8%.

Impact test

According to GB / T2423.5 test Ea conduct, magnets shock acceleration 500m / s ² after the shock pulse duration 11ms three attempts, the appearance quality should meet the standard requirements, the maximum energy product (BH) max rate of change ≤ 8%.

Vibration test

According to GB / T2423.10 Fc test conducted, the magnet is subjected to add frequency of 10HZ ~ 55HZ ~ 10HZ, displacement amplitude of 0.35mm sweep data five times, after a sweep speed octave per minute test, the appearance of quality shall comply with the standards, the maximum energy product (BH) max rate of change ≤ 8%.

Test methods

Test environmental conditions

Temperature of 15 °C ~ 35 °C;
Relative humidity of 45% to 75%
Atmospheric pressure 86kpa ~ 106kpa

Dimensional inspection

With an accuracy of 0.02mm Vernier caliper or other measuring instruments for measurement.

Appearance Quality Inspection

Japanese measurement method, or sample comparison method.

Magnetic Inspection

Magnetic tests conducted in accordance with GB / T3217 provisions, special performance tests according to customer requirements for testing.

Mechanical tests

Before the new product identification or mechanical performance test when customer requirements.

Section 11: Toxicological Information

No provision requires

Section 12: Ecological Information

No provision requires

Section 13: Disposal

The product raw material recycling.

Section 14: Transport Information

This product can be shipped by any means.
Filling magnetic tape product packaging should have separated from the magnetic clip package.

Section 15: Regulatory Information

This product has no relevant laws and regulations

Section 16: Other Information

Not applicable