Samarium cobaltum magneticum

Natural History

CHEMICAL FORMULA: SmCo5 Magnetized

SYNONYMS: Rare Earth Magnet

METHODOLOGY: The proving consisted of 17 provers (14 females, 3 males). The remedy administered in 30C potency with two placebos. The proving was double blind format in which neither the master prover, supervisors nor provers were aware of the substance they were taking. During the proving, provers logged symptoms on a daily basis and were in daily contact with their supervisor until symptoms subsided.

Magnets

Introduction [6]

A magnet is any object that has a magnetic field. It attracts ferrous objects like pieces of iron, steel, nickel and cobalt. In the early days, the Greeks observed that the naturally occurring 'lodestone' attracted iron pieces. From that day onwards began the journey into the discovery of magnets.

These days magnets are made artificially in various shapes and sizes depending on their use. One of the most common magnets - the bar magnet - is a long, rectangular bar of uniform cross-section that attracts pieces of ferrous objects. The magnetic compass needle is also commonly used. The compass needle is a tiny magnet which is

Music

Brighter Than The Sun, Colbie Caillat (play music video)

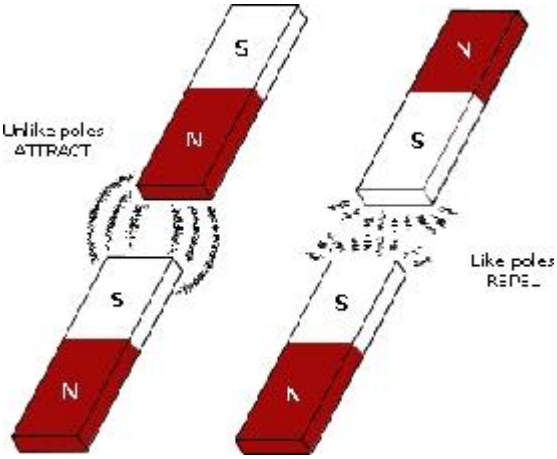
Movies

As It Is In Heaven, (see short music video) (link to IMDB)

A successful international conductor suddenly interrupts his career and returns alone to his childhood village in Norrland, in the far north of Sweden. It doesn't take long before he is asked to come and listen to the fragment of a church choir, which practices every Thursday in the parish hall. Just come along and give a little bit of good advice. He can't say no, and from that moment, nothing in the village is the same again. The choir develops and grows. He makes both friends and enemies. And he finds love.

Limitless, Starring Bradley Cooper (see trailer)

An action-thriller about a writer who takes an experimental drug that allows him to use 100 percent of his mind. As one man evolves into the perfect version of himself, forces more corrupt than he can imagine mark him for assassination...



free to move horizontally on a pivot. One end of the compass needle points in the North direction and the other end points in the South direction.

The end of a freely pivoted magnet will always point in the North-South direction.

The end that points in the North is called the North Pole of the magnet and the end that points South is called the South Pole of the magnet. It has been proven by experiments that like magnetic poles repel each other whereas unlike poles attract each other. Correctly matched poles create the tight magnetic attraction that is commonly understood. [6]

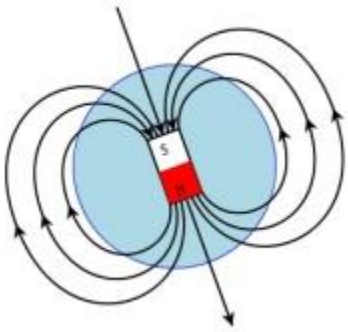
Magnetic Fields

What is a magnetic field? The space surrounding a magnet, in which magnetic force is exerted, is called a magnetic field. If a bar magnet is placed in such a field, it will experience magnetic forces. However, the field will continue to exist even if the magnet is removed. The direction of magnetic field at a point is the direction of the resultant force acting on a hypothetical North Pole placed at that point. [6]

How is a magnetic field created?

When current flows in a wire, a magnetic field is created around the wire. From this it has been inferred that magnetic fields are produced by the motion of electrical charges. A magnetic field of a bar magnet thus results from the motion of negatively charged electrons in the magnet. [6]

Magnetic Lines Of Force



Just as an electric field is described by drawing the electric lines of force, in the same way, a magnetic field is described by drawing the magnetic lines of force. When a small north magnetic pole is placed in the magnetic field created by a magnet, it will experience a force. And if the North Pole is free, it will move under the influence of magnetic field. The path traced by a North magnetic pole free to move under the influence of a magnetic field is called a magnetic line of force. In other words, the magnetic lines of force are the lines drawn in a magnetic field along which a north magnetic pole would move.

The direction of a magnetic line of force at any point gives the direction of the magnetic force on a north pole placed at that point. Since the direction of magnetic line of force is the direction of force on a North Pole, so the magnetic lines of force always begin on the N-pole of a magnet and end on the S-pole of the magnet. A small magnetic compass when moved along a line of force always sets itself along the line tangential to it. So, a line drawn from the South Pole of the compass to its North Pole indicates the direction of the magnetic field. [6]

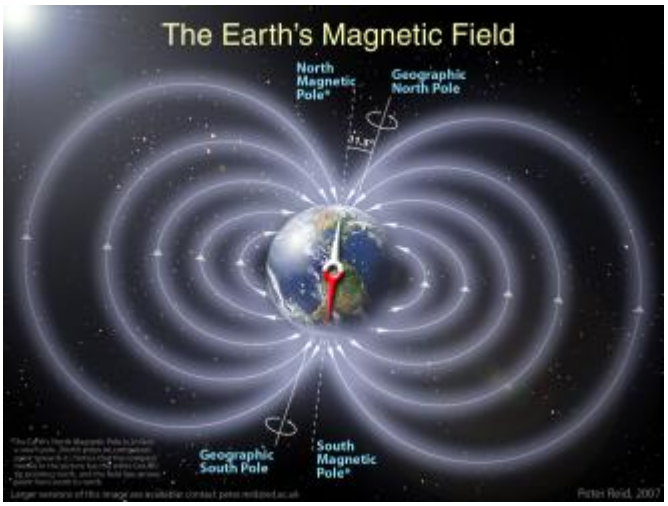
Properties of the magnetic lines of force

- The magnetic lines of force originate from the North Pole of a magnet and end at its South Pole.

- The magnetic lines of force come closer to one another near the poles of a magnet but they are widely separated at other places.
- The magnetic lines of force do not intersect (or cross) one another.
- When a magnetic compass is placed at different points on a magnetic line of force, it aligns itself along the tangent to the line of force at that point.

These are just some of the basic concepts of magnetism. One cannot possibly grasp the depth and appreciate the versatility of magnets without reading more about the uses of magnets, the Earth as a huge magnet and electromagnetism among other things. [6]

The Largest Magnets



The Earth itself is a magnet! Researchers think it's the effect of convection currents in our planet's molten interior that causes the entire Earth to behave as one gigantic magnet, with a north and south pole.

Whenever you look at a compass, what you're doing is reading the magnetic field of the planet on which you are standing. But even a magnet the size of a planet can't compete with a magnet the size of a star.

For example, the sun is a magnet. In this case, the magnetic field is probably generated by swirling plasma. Magnetic storms on the sun are powerful enough to have an effect on satellites and communication systems all the way here on Earth. Still, there are things in space that put all of these magnets to shame [7]

Time-Space Distortion [8]

Electric charges and magnets do indeed "distort space," but this happens on a couple of levels.

According to the current best theory of gravitation, which is contained in Albert Einstein's famous general theory of relativity, a gravitational field represents a curvature of space-time, rather than a distortion of it. Anything that carries energy, momentum and stresses is a source of a gravitational field, that is, a curvature of space-time.

Electric charges and magnets are manifestations of certain types of matter, most particularly electrons. Since matter carries energy (via Einstein's famous relation that energy is mass times the speed of light squared), such objects will have a gravitational field and so they will distort space-time. So one way in which a charge or a magnet will distort space-time is by virtue of its matter.

You see, electromagnetic fields themselves carry energy (and momentum and stresses. Because an electromagnetic field contains energy, momentum, and so on, it will produce a gravitational field of its own. This gravitational field is *in addition*to that produced by the matter of the charge or magnet. [8]

This Time-Space distortion is based on the same principle that distorts time and space around a Black Hole" in space.

Rare Earth Minerals (Lanthanides) [9]

As defined by IUPAC, **rare earth elements** or **rare earth metals** are a set of seventeen chemical elements in the periodic table, specifically the fifteen lanthanides plus scandium and yttrium.[2] Scandium and yttrium are considered rare earth elements since they tend to occur in the same ore deposits as the lanthanides and exhibit similar chemical properties.

Despite their name, rare earth elements (with the exception of the radioactive promethium) are relatively plentiful in theEarth's crust, with cerium being the 25th most abundant element at 68 parts per million (similar to copper). However, because of their geochemical properties, rare earth elements are typically dispersed and not often found in concentrated and economically exploitable forms. The few economically exploitable deposits are known as rare earth minerals. It was the very scarcity of these minerals (previously called "earths") that led to the term "rare earth". The first such mineral discovered was gadolinite, a compound of cerium, yttrium, iron, silicon and other elements. This mineral was extracted from a mine in the village of Ytterby in Sweden; many of the rare earth elements bear names derived from this location. [9]

Rare Earth Minerals in Green Earth Technology [1]

Numbers 57 through 71, along with number 37, of the periodic table of elements are collective known as the rare earth minerals. These particular elements are garnering a lot of attention these days due to the well-known problems which are rising from our dependence as a society on fossil fuels. These particular elements of the periodic table hold great promise for unlocking new sources of green energy.

Rare earth minerals have the potential to revolution the way a car works, because they can play a major role in the functioning of hybrid electric vehicles. The technology involved here is called the "rare earth permanent magnet." This device works by stimulating the flow of electrons from one atom to another and by doing so, it can generate a substantial amount of electrical energy. These electric traction drives can supplement or even totally replace the internal combustion engine, thus doing away to a significant extent or even entirely with the need to burn fossil fuels in order to make your car run. In short, the possibilities lurking in rare earth minerals for green technologies is immense. [1]

Rare Earth Magnets [3]

Rare-earth magnets are strong permanent magnets made from alloys of rare earth elements. Developed in the 1970s and 80s, rare-earth magnets are the strongest type of permanent magnets made and have significant performance advantages over ferrite or alnico magnets. Themagnetic field typically produced by rare-earth magnets can be in excess of 1.4 teslas, whereas ferrite or ceramic magnets typically exhibit fields of 0.5 to 1 tesla. There are two types:neodymium magnets and samarium-cobalt magnets. Rare earth magnets are extremely brittle and also vulnerable to corrosion, so they are usually plated or coated to protect them from breaking and chipping. [3]

Rare Earth Mining In China [2]

Why aren't there more companies mining them? Rare earth minerals are not something new. They have been mined in the past but the process of mining them was too expensive to make it worthwhile since the applications for these minerals were minimal. Today, the demand is there and unfortunately, there are simply not many mines active. This leads to the underlying problem in supply.

Rare earth minerals are those found within the earth that until recent decades, have not been thought of as valuable. Many companies stopped mining for these products because of the limited use of them, and the fact is where there is limited use, there are also limited funds. However, new technologies found the exceptional benefits of these minerals for commercial, defense, and everyday technologies. Since then, demand has greatly increased, so the minerals are considered "rare" because there's not enough being mined to fit demand. China continued to mine and so is really the only one mining at the level necessary for the demand present.

SAMARIUM, A Remedy Profile

Is in column 8 (Ferrum column) of the Lanthanide row. It represents resistance under the burden of the weight of the whole earth. The headaches in this remedy are representative of the Lanthanides.

- They experience even more pressure and tension than the other Lanthanides. They work under pressure for the benefit of others. They may feel opposed or obstructed in their goal. They mostly work on their own, on their quest for spiritual development. [10] (Scholten)
- **Uses:** Carbon-arc lighting for the motion picture industry. Lasers. Samarium oxide is used in optical glass to absorb infrared light. Used in magnets, $SmCo_5$ is used in making a new permanent magnet material with the highest resistance to demagnetization of any known material. Samarium is used in headphones and as a catalyst in dehydration of ethanol. [10] (Scholten)

Samarium has the theme of "Good Samaritan" In their quest for enlightenment; they also seek to assist others. They can fight and strive to care for others.

Within Samarium is the concept of endurance of hardship. They continue striving even after being injured. The concept is they need to give up things to conquer the shadow.

COBALT, A Remedy Profile

Cobalt belongs to the meeting point of Column 9 and Row 4. The main feeling in Cobalt is "I can face the opposition and defend myself but I doubt whether my protection is absolute and complete" [4] (Sankaran)

A main Cobalt delusion is that they have committed a crime.

References

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[3] Wikipedia; http://en.wikipedia.org/wiki/Rare-earth_magnet

[4] Structure; Sankaran, Rajan

[5] Physics 4 Kids; What is a Magnet?; http://www.physics4kids.com/files/elec_magnets.html

[6] How Magnets Work; Jezek, Geno; http://www.howmagnetswork.com/

[7] Indiana Public Media; The Biggest Magnet Ever; http://indianapublicmedia.org/amomentofscience/the-biggest-magnet-ever/

[8] Scientific American; www.scientificamerican.com; “Do electric charges and magnets distort space, in the way that a source of gravity does?; December 1998; http://www.scientificamerican.com/article.cfm?id=do-electric-charges-and-m

[9] Wikipedia; Rare Earth Element; http://en.wikipedia.org/wiki/Rare_earth_element

[10] Scholten, Jan; The Secret Lanthanides