The attractions of magnets

Fatal attraction
Magnets will always attract themselves as well as people of all ages, especially children. Regrettably, enclosed in its attractiveness is also a lethal risk, especially for products that contain small, strong magnets. So, when you intend to design, buy or sell products with these magnets, please take these risks into account.

Misinterpreted symptoms
Medical signs associated with intestinal perforation or blockage can easily be misinterpreted since many children exhibit only flu-like symptoms. Such misinterpretations cause delay in the medical treatment and have led to medical consequences for children. Several accidents, including fatalities, have been reported involving ingestion of magnets resulting in perforation or blockage of the intestines. Most accidents have occurred with children between the ages of 10 months and 8 years. In several cases surgery was required to remove the magnets from children’s intestines. (Source: excerpt from clause A.51 of EN 71-1).

Recalls
Market surveillance authorities have the unthankful task to trace and ban these products from the market. Which is particularly difficult because the inventiveness on creating new products with magnets is literally beyond all boundaries.

There is a standard!
EN 71-1 is the European standard for safety of toys with regard to their mechanical and physical properties. EN 71-1 defines two possible solutions to constrain the risks of magnets for younger children:

a) Make sure the magnets do not fit in the ‘small parts cylinder’. In other words, make sure the magnets are so large that they can not be swallowed by young children.

b) Make sure the magnets are not strong enough to attract each other across intestines.

EN 71-1 defines the limit for the second constraint as a “magnetic flux index less than 50 kG²mm² (0,5 T²mm²)”.

There are some exemptions in EN 71-1, for instance experimental sets, but even then a warning is required for small, strong magnets: “Not suitable for children under 8 years. This product contains small magnets. Swallowed magnets can stick together across intestines causing serious injuries. Seek immediate medical attention if magnets are swallowed.”

Despite the severe and lethal risks the same type of products are still offered by ignorant others. Without any doubt more recalls will follow.