Talc is naturally occurring mineral in a range of colors including white, grey and green. Talc is the softest mineral in the world, with potential for virtually unlimited applications. Talc is a highly stable, chemically inert, odorless white powder. It has been used since 3500 B.C. Talc is made up of very thin sheets compressed one on top of the other. Once milled, the sheets break up into millions of tiny plates that easily glide over one another. This is what gives talc its soft, slippery feel. There are many grades of talc, each of which is categorized according to levels of purity of the mineral. At the top of this scale is cosmetic grade talc. Talc is made mainly of the elements magnesium, silicon, and oxygen, and is used in a plethora of products, including various powders, such as baby powder. From rock to pure powder, the production of talc comprises state-of-the-art production process that requires close attention to geology, technology and safety.

Talc contains magnesite (magnesium carbonate), dolomite, calcite, quartz or chlorite. Chemically, talc is a hydrous magnesium silicate with a chemical formula of $\text{H}_2\text{Mg}_3(\text{SiO}_3)_4$ or $\text{Mg}_3\text{Si}_4\text{O}_{10}(\text{OH})_2$. The properties of these minerals vary.

However, they are all more abrasive and less efficient than talc proper. In some types of marketed talc, these minerals make up almost 100%. Talcum Powder helps to eliminate friction while keeping skin cool and comfortable. To produce cosmetic talcum powder, selected natural talc is purified and refined, giving it a softer, silky feel. Fragrance is sometimes added to give it a pleasant smell. It's made of millions of tiny slippery plates that glide over each other to help reduce the irritation caused by friction.

The global baby powder market is dominated by international vendors such as Chicco, Johnson & Johnson, and Pigeon. Other vendors include Burt's Bees, Mothercare, PZ Cussons, Anti-Monkey Butt, ASDA, Bathtime Kids, Caldesene, Curash Baby Care, Gaia, Gerber, Gentelle, Himalaya, Morissons',...
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 Mana Sanskriti (Our Culture)

Simple, and Superdrug. A Technavios market research analysis projects the baby powder market to reach around $659 million by the end of 2019(5).

The growing awareness amongst consumers towards baby hygiene and baby care products has contributed to the growth of this market. APAC and Latin America account for the largest infant population globally. This market research report anticipates these regions to represent a high-potential, untapped market for baby care products during the forecast period(6).

Talc-based products are classified as cosmetics and do not have to undergo a review process by the Food and Drug Administration (FDA), which monitors foods and drugs. Under the Federal Food, Drug and Cosmetic Act (FD & C Act), cosmetic products and ingredients, with the exception of color additives, do not have to undergo FDA review or approval before they go on the market. Cosmetics must be properly labeled, and they must be safe for use by consumers under labeled or customary conditions of use.

Cosmetic companies have a legal responsibility for the safety and labeling of their products and ingredients, but the law does not require them to share their safety information with FDA. FDA monitors for potential safety problems with cosmetic products on the market and takes action when needed to protect public health. Before we can take such action against a cosmetic, we need sound scientific data to show that it is harmful under its intended use(7).

Talcum powder made from talc absorbs moisture well and helps cut down on friction, making it useful for keeping skin dry and helping to prevent rashes. It is widely used in cosmetic products such as baby powder and adult body and facial powders, as well as in a number of other consumer products. In its natural form, some talc contains asbestos, a substance known to cause cancers in and around the lungs when inhaled. This type of talc is not used in modern consumer products. Published scientific literature going back to the 1960s has suggested a possible association between the use of powders containing talc and the incidence of ovarian cancer. However, these studies have not conclusively demonstrated such a link, or if such a link existed, what risk factors might be involved. Nevertheless, questions about the potential contamination of talc with asbestos have been raised since the 1970s. To prevent contamination of talc with asbestos, it is essential to select talc mining sites carefully and take steps to purify the ore sufficiently. All talcum products used in homes in the United States have been asbestos-free since the 1970s(7).
In 1971, British researchers studied 13 ovarian tumors and discovered talc residue was “deeply embedded” in 10 of them, in The Lancelet journal. According to the researchers, talc particles entered a woman’s reproductive tract through the vagina and traveled through the cervix into the uterus then moved through the fallopian tubes to the ovaries. Note that talc used contained carcinogenic asbestos. This was the first study to suggest a relationship between talc-asbestos and ovarian cancer. However, there was no comparison to talc-asbestos in healthy ovaries. Research studies dating back to the early 1980s have confirmed a direct connection between asbestos exposure and ovarian cancer(8).

Another study in 1982 in the journal Cancer, and later more than 20 studies attempted to show a link between the powder and ovarian cancer. A study published in Cancer Epidemiol Biomarkers Prev(9) indicated that women thought to have ovarian cancer had an increased rate in the meta-analysis if reporting having been exposed to asbestos, compared with reference populations. Several studies in women have looked at the possible link between talcum powder and ovarian cancer, with mixed findings. Some studies report a slightly increased risk, while others have found no increase. The evidence is insufficient to conclude that use of talcum powder leads to an increased risk of ovarian cancer. It is also unclear how talcum powder might influence the development of ovarian cancer(10).

Baby Powder made from cosmetic talc is one of JOHNSON’s oldest products. Imerys Talc America is the biggest talc supplier in the country and the sole source of talc for J& J. More than 1,200 lawsuits have been filed against Johnson & Johnson alleging that the company fails to warn consumers that its talcum powders could cause cancer. Johnson & Johnson has argued that its powder is safe and that no warning label is necessary. More than two years after a federal jury in South Dakota concluded that Johnson & Johnson was negligent in failing to warn consumers that Shower to Shower is possibly carcinogenic, a Missouri jury has awarded $72 m to the family of a woman who died from ovarian cancer, which she said was caused by 30 years of dusting of her genitals with the Johnson & Johnson’s powder(11).

Shower to Shower Body Powder is a formulation comprising a time-release formula that keeps fresh, even as perspiration. It is non-medicated and non-irritating to skin. In May 2009, a coalition of groups called the Campaign for Safe Cosmetics began pushing Johnson & Johnson to eliminate questionable ingredients from its baby and adult personal care products. After three years of petitions, negative publicity and a boycott threat, the company agreed in 2012 to eliminate the ingredients 1,4-dioxane and formaldehyde, both considered probable human carcinogens, from all products by 2015(12). Since 2013, Johnson & Johnson has spent more than $5 billion to resolve several legal claims against its products.
PCT Fees to Foreign Offices

Please be advised that the Fee Schedule was updated for the following changes, effective April 1, 2016:
- International search (IPOS) new fee of $1,578
- International search (JPO) – fee increase from $581 to $1,295
- International search (Rospatent) – fee decrease from $433 to $388

REFERENCES AND NOTES

(1) Dr. Rao Vepachedu is a registered patent attorney with extensive experience in the management of intellectual property and extensive experience in research and teaching. He currently works for Cardinal Intellectual Property (CIP), Cardinal Risk Management (CRM), and Cardinal Law Group (CLG). In addition, he is the president of Vepachedu Educational Foundation Inc. (www.vepachedu.org), a 501(c) (3) educational foundation. For more information visit: www.linkedin.com/in/vepachedu, http://www.avvo.com/attorneys/60201-il-sreenivasarao-vepachedu-764535.html and http://www.crm- ip.com/vepachedu.html. Contact: svepachedu@yahoo.com or rao.vepachedu@cardinal-ip.com.
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