

GRINDSTED® SOFT-N-SAFE fact sheet

What is GRINDSTED® SOFT-N-SAFE?

- GRINDSTED® SOFT-N-SAFE is made from fully hardened castor oil and acetic acid.
- Castor oil is extracted from the seeds of the castor oil plant, which is an annual plant grown in India, Brazil and China. The castor oil used in GRINDSTED® SOFT-N-SAFE has been fully hardened, which makes the oil firmer and thereby removes its laxative effect.
- Castor oil is used in processed form in many industries in products such as chocolate, margarine and cosmetics.
- GRINDSTED® SOFT-N-SAFE is a plasticiser that makes plastic products soft and flexible.
- GRINDSTED® SOFT-N-SAFE shows no signs of hormone-disrupting effects.
- If eaten, GRINDSTED® SOFT-N-SAFE is metabolised as vegetable oils
- GRINDSTED® SOFT-N-SAFE has neither taste nor smell.
- GRINDSTED® SOFT-N-SAFE is fully biodegradable.

Applications for GRINDSTED® SOFT-N-SAFE

- Expected main applications for GRINDSTED® SOFT-N-SAFE are flexible PVC products such as toys, bottle cap liners, screw cap liners for e.g. jam, teething rings, cling film, tubes and conveyor belts in the food industry and medical equipment.
- Plasticisers are used in a number of technical applications such as footwear, safety gloves, vinyl flooring, vinyl wallpaper, tarpaulins, weather stripping, rainwear, wires & cables, office furnishings etc., but the price is an inhibiting factor for the use of GRINDSTED® SOFT-N-SAFE in such products.

- GRINDSTED® SOFT-N-SAFE can replace other plasticisers such as phthalates and is directly applicable in the plastics industry requiring no modification of production equipment.

Launch of GRINDSTED® SOFT-N-SAFE

- The EU has approved GRINDSTED® SOFT-N-SAFE for use in food contact materials. Next, it will be launched in the US where approval is expected at the beginning of 2005. Subsequently, GRINDSTED® SOFT-N-SAFE will presumably be launched in Japan when approved by the Japanese authorities.
- Initially, GRINDSTED® SOFT-N-SAFE is expected to be used in bottle cap liners and cling film followed by toys and a number of technical applications in the food industry and all kinds of medical equipment.

GRINDSTED® SOFT-N-SAFE and Danisco

- Danisco expects GRINDSTED® SOFT-N-SAFE to add hundreds of millions to the top line after an introduction period of three to five years. If Danisco with GRINDSTED® SOFT-N-SAFE is able to capture around 1% of the world market for phthalates, it will mean sales in the magnitude of half a billion Danish kroner.
- GRINDSTED® SOFT-N-SAFE falls under the division Danisco Emulsifiers.
- The price of GRINDSTED® SOFT-N-SAFE is three to four times higher than phthalates, which increases the production costs of a plastic doll by DKK 0.25-0.50 and a jar of jam with GRINDSTED® SOFT-N-SAFE in the screw cap liner by DKK 0.05.
- Danisco can begin production of GRINDSTED® SOFT-N-SAFE immediately. In case the demand for GRINDSTED® SOFT-N-SAFE grows, Danisco is prepared to make an additional double-digit million investment in the product.
- The production of GRINDSTED® SOFT-N-SAFE does not affect Danisco's strategy of becoming the world's leading food ingredients manufacturer. The product is a spin-off from Danisco's food ingredients activities.
- GRINDSTED® SOFT-N-SAFE will be produced at Danisco's plant in Grindsted, Denmark.
- The production of GRINDSTED® SOFT-N-SAFE is not expected to generate additional jobs.
- Danisco has filed for patent protection for the production and application of GRINDSTED® SOFT-N-SAFE in flexible plastic.

World and domestic markets for plasticisers

- The world market for phthalates is estimated at 2-3 million tonnes a year.
- The world market for plasticisers is estimated at up to 4 million tonnes a year.
- Annual Danish imports of phthalates (direct and indirect) are in the magnitude of 10,000 tonnes.

The PVC market

(GRINDSTED® SOFT-N-SAFE is very well suited for flexible PVC).

- The EU production of PVC totals around 5.8 million tonnes/year.
- The US production is around 6.5 million tonnes/year.
- Approximately 65% of the demand for PVC is for rigid PVC and the remaining 35% is for flexible PVC.
- The annual growth rate for PVC in the Western world is almost 1%, with 2-3% globally.

Examples of PVC producers in the EU:

- EVC 1.2 million tonnes (at 8 factories in the EU)
- Atofina 0.8 million tonnes (at 4 factories in the EU)
- Solvin 0.8 million tonnes (at 4 factories in the EU)
- Hydro Polymers 0.6 million tonnes (at 3 factories in the EU)

Examples of end-product manufacturers:

- Caps – Amcor White Cap (Germany) and Crown Cork (UK)
- Cling film – Pliant (Germany), Linpac (Germany), AEP (France) and Interplastica (Spain)
- Hydro Polymers (UK, owned by Hydro) produces semi-manufactures for the pharmaceutical industry.
- UnoMedical (Denmark, former Maersk Medical) and Coloplast (Denmark).

