Mineral oils and food
A partnership for the future?
Fragol: H1 food Lubricant specialist

- 50 year old family owned German company
- Own product development and production.
- Focus on
  - Compressor and vacuum lubricants
  - H1 food safe lubricants
  - PAG lubricants
  - Heat transfer fluids
There are 3 ways that mineral oil hydrocarbons find their way into food.

- Intentional as food ingredient and as mold release agent
- Via incidental food contact from production equipment
- As a migration from other materials such as packaging
The food producing industry

- HACCP
  - H1, H2, H3, 3H, HT1; GRAS
- EU law, directives and guidelines
- ISO 21469
- ISO 22000
- GMP
- Kosher and Halal
Difference between FDA and EU

- FDA limits quantity of m.o. entering into foodstuff
- EU maximises ADI (acceptable daily intake)
  - Viscosity class 1
Mineral oils in food

- Globally the most common used guidelines are those of the FDA for mineral oils in food category 3H (intentional) 21CFR 172.878 white mineral oils.
- Limitations are given under this section.
Typical use (FDA)

- Release agent in medicine and food flavoring (0,6% mass)
- Binder lubricant in medicine and food flavoring (0,6% mass of the tablet)
- In vinegar and wine production sealing against air (quantity according to GMP)
- Defoamer in food (in accordance with 173,340)
Typical use (FDA)

- Release agent in bakery (0,15%)
- Dehydrated fruits release agent (0,02%)
- Egg white solids release agent (0,1%)
- Protective coating on fruit and veg (GMP)
- Frozen meat as hot melt coating (0,095%)
- Protective coat on curing pickles (GMP)
- Molding starch confectionary (0,2%)
Typical use (FDA)

- Release agent and as sealing and polishing agent in production of confectionary – advent chocolate (0.2%)
- Anti dusting agent in sorbic acid (0.25%)
- Dust control for weat corn soybean barley rice oats etc (0.02 % -iso 100 at 100 F and 0.08 by weight of grain)
Other mineral oil contact points

- Category H1 lubricants with incidental food contact.
  - Mineral oils, addition to food not to exceed 10 p.p.m.
  - Machine lubrication
    - Agriculture
    - Animal feed
    - Food processing
Other mineral oil contact points

- Corrosion protection
- Human error
- Leakage
- Equipment design
Where legislation meets practice

- It seems there is a wide gap between what the industry best practice represents and what the signal is that is sent to the public on risk and acceptability.
- Is there a problem perception or is there a real risk?
3 questions

- Can we avoid M.O.H. in the final food product?
- Must we avoid M.O.H. in the food?
- What is crucial for the Lubricant producers and food producing industry?
Can we avoid mineral oils in the final food?

- The food chain is global, not limited to Europe.
- H1 Mineral oils are cheap and reliable products. What alternatives are equally good and available?
- Total global equipment re-design will be required if answered with „yes“. From harvester to animal feed to final food production will need new equipment.
Must we avoid Mineral Oils Hydrocarbons in food stuff?

- We need to establish (globally) acceptable safe levels of controlled quality lubricants (H1 category).
- Studies need to confirm and put into context the risks.
- We need to study the consequences of a ban, and the impact on production in quantity and cost.
Food stuff producers and Lubricant producers need:

- Clear rules and regulations on lubricant use.
- Commercially viable solutions.
- Fast and cost effective testing methods.
- Global standards in a global playing field.
- Clear understanding of the risks involved with lubricants in food stuff.
- A positive list of lubricant components (XH1)
Conclusion

- Let us prove that mineral oils, at a controlled maximum level in food stuff, present an acceptable risk.
- Let us bring the discussion around mineral oil hydrocarbon from an emotional discussion into a factual, balanced consideration.