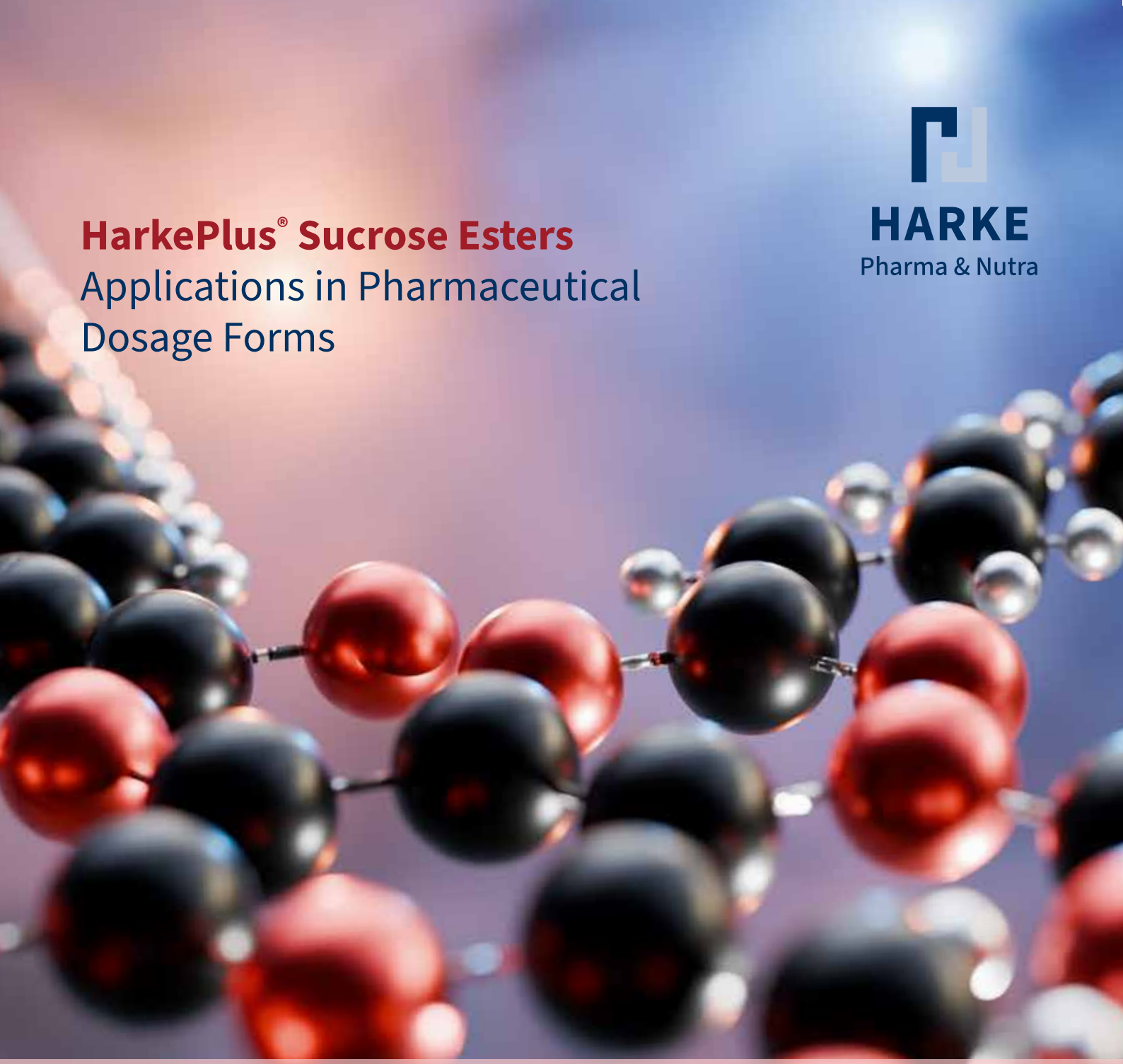
HARKE
Pharma & Nutra

HarkePlus® Sucrose Esters
Applications in Pharmaceutical Dosage Forms



Pharma

- Non-ionic and biodegradable
- Sucrose Stearate and Sucrose Palmitate are registered in pharmacopoeias both in the European Union and in the United States
- Chemically synthesized from the esterification of sucrose and fatty acids
- Cover a wide range of hydrophilic-lipophilic balance (HLB)

YOUR DOSAGE FORM EXPERTS

HARKE Pharma & Nutra
Your Dosage Form Experts

HARKEPLUS® SUCROSE ESTERS

HARKE
Pharma & Nutra

HarkePlus® Sucrose Esters (SE) Physical Properties

- **Solubility:** HarkePlus® SEs have better water solubility than other emulsifiers. It is recommended to disperse HLB 5-16 HarkePlus® SEs in cold water and then heat them (60°C to 80°C) to dissolve them. HarkePlus® SEs with HLB 0-3 should be dissolved in oil.
- **Thermal stability:** The melting point of HarkePlus® SEs is between 40°C and 65°C depending on the type of fatty acids and the degree of substitution. At temperatures higher than 120°C a slight color formation can occur due to caramelisation of traces of free sucrose present in the product.
- **pH stability:** HarkePlus® SEs are stable in the pH range of 4 to 8. Mono-esters degrade faster than di- or tri-esters.
- **HLB balance:** An HLB value of 0 corresponds to a completely lipophilic/hydrophobic molecule, and a value of 20 corresponds to a completely hydrophilic/lipophobic molecule.

Most Common Pharmaceutical Applications of HarkePlus® SEs

- Emulsification and stabilization
- Dissolution improvement
- Sustained/controlled release
- Oral absorption enhancement
- Lubrication

Available Grades

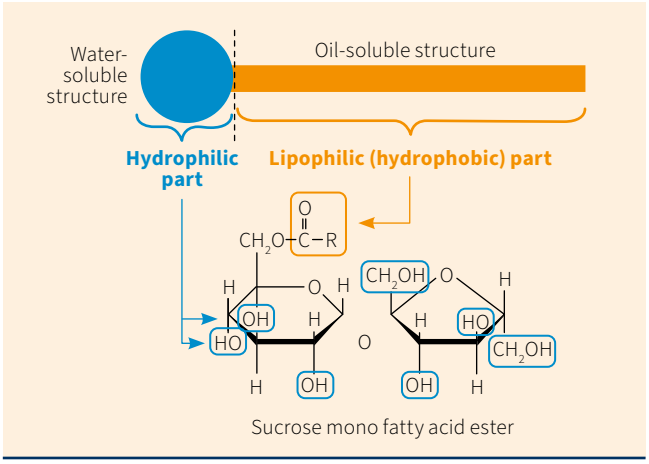
HarkePlus® Sucrose Ester S-370F
HarkePlus® Sucrose Ester P-1570
HarkePlus® Sucrose Ester L-1695 (under registration)

Nomenclature System of HarkePlus® SEs

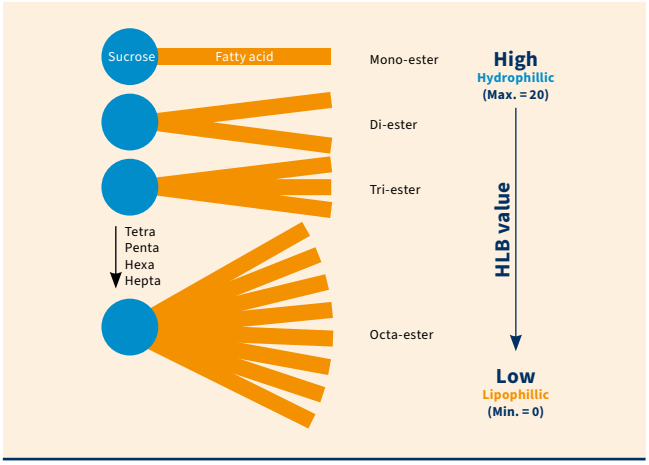
S - 370 F
P - 1570

F: Fine powder

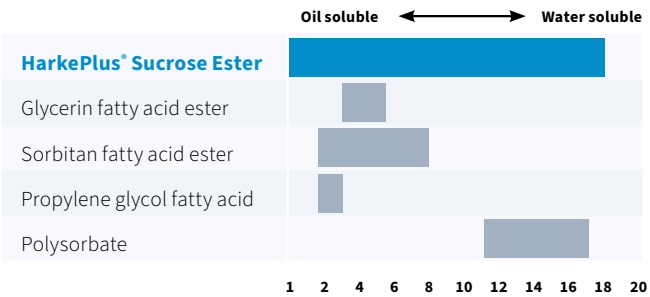
Abbreviation of main fatty acids	HLB (0-20)	Percentage of the main fatty acid among total fatty acids
S: Stearic acid	S- **3**70F → HLB**3**	S- 3**70**F → **70**% (stearic)
P: Palmitic acid	P-**15**70 → HLB**15**	P-15**70** → **70**% (palmitic)



HarkePlus® SEs are consisting of sucrose as hydrophilic group and a maximum of eight fatty acids per molecule as lipophilic groups.



HarkePlus® SEs with high mono-ester contents are more hydrophilic (high HLB), whereas a high esterification degree results in lipophilic HarkePlus® SEs (low HLB).



HarkePlus® SEs offer a much wider HLB range compared to other emulsifiers.

HARKE Pharma GmbH
Business Unit Pharma & Nutra
Xantener Straße 1
45479 Mülheim an der Ruhr
Germany

+49 208 3069 0
pharma@harke.com
www.harke.com/pharma

HARKE GROUP