HarkePlus® Sucrose Esters
Applications in Pharmaceutical Dosage Forms

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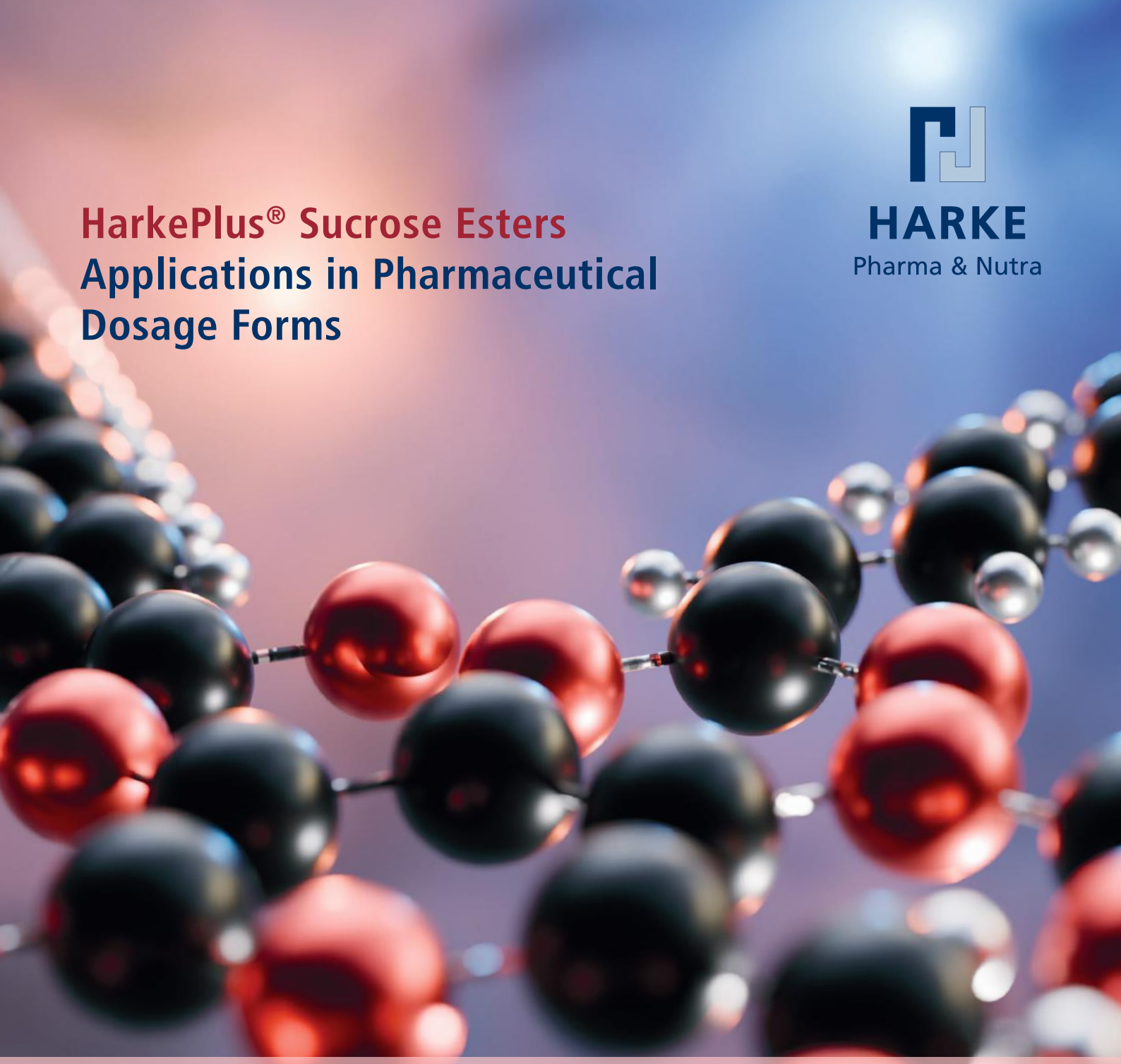

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- Non-ionic and biodegradable
- Sucrose Stearate and Sucrose Palmitate are registered in pharmacopoeias both in the European Union and in the United States
- Chemically synthesized from the esterification of sucrose and fatty acids
- Cover a wide range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

YOUR DOSAGE FORM EXPERTS

HARKEPLUS® SUCROSE ESTERS

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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

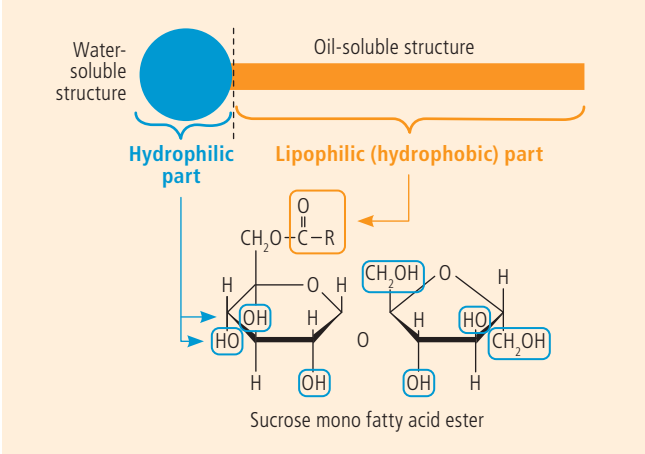
HarkePlus® Sucrose Ester S-370F
HarkePlus® Sucrose Ester P-1570
HarkePlus® Sucrose Ester L-1695 (under registration)

Nomenclature System of HarkePlus® SEs

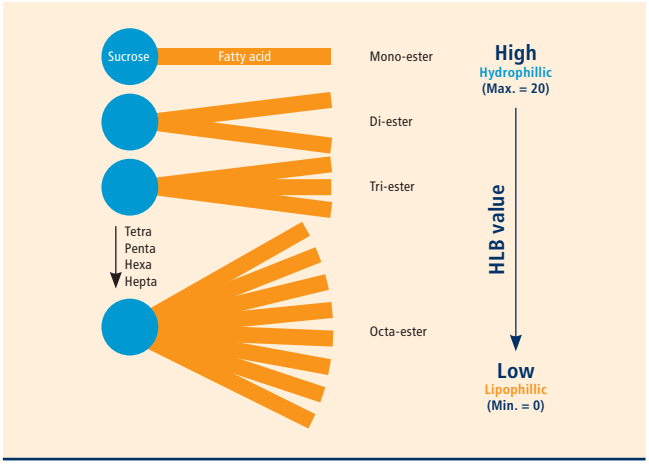
S - 370 F
P - 1570

F: Fine powder

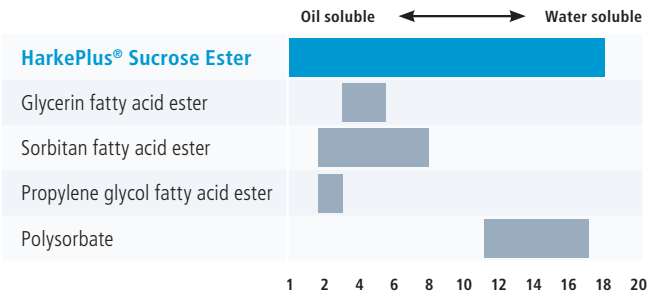
Abbreviation of main fatty acids	HLB (0-20)	Percentage of the main fatty acid among total fatty acids
S: Stearic acid	S- 370F → HLB3	S- 370F → 70% (stearic)
P: Palmitic acid	P-1570 → HLB15	P-1570 → 70% (palmitic)



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 range of functional properties than other emulsifiers.

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