



EMDEX[®]

Dextrates, Hydrated NF



A Soluble Binder

**for Great Tasting,
Great Looking
Tablets**



What is Emdex?

- **Product Characteristics**
 - Only Compendial (NF) hydrated spherical dextrate
 - Dextrates are a white spray-crystallized, spherical, free flowing, odorless, sweet tasting powder.
 - **Approximately half the sweetness of sucrose**
- **Composition**
 - Dextrose: ~ 95%
 - Higher order polysaccharides: ~ 5%
 - Completely soluble
 - pH: 3.5 – 5.5
 - Moisture: 7.5% - 9.0%
 - Controlled median particle size 190 μm – 200 μm



The world of Dry Binders

Dry Binders

**Direct Compression
Not Wet Granulation**

- **MCC**
- **Powdered Cellulose**
- **Dibasic Calcium Phosphate**
- **Lactose**
- **Mono- und Polysaccharides**
- **Sugar Alcohols**

insoluble

soluble



**Direct Compression
Not Wet Granulation**

Dry Binders

- **Mono- and Polysaccharides** → *soluble in water*

— **Dextrin Hydrolysis of Starch** → *Filler*

— **Maltodextrine (Maltrin)**

(Dextrose Equivalent (DE) < 20)

— **Glucose (Dextrose) Glucose-Monohydrat**

— **Directcompressible Sugar** (Sugartab not USP)

Sucrose (refined sugar) → *Filler*

DC grade is often compressed with Maltrodextrin

— **EMDEX® Dextrates NF, Hydrated**

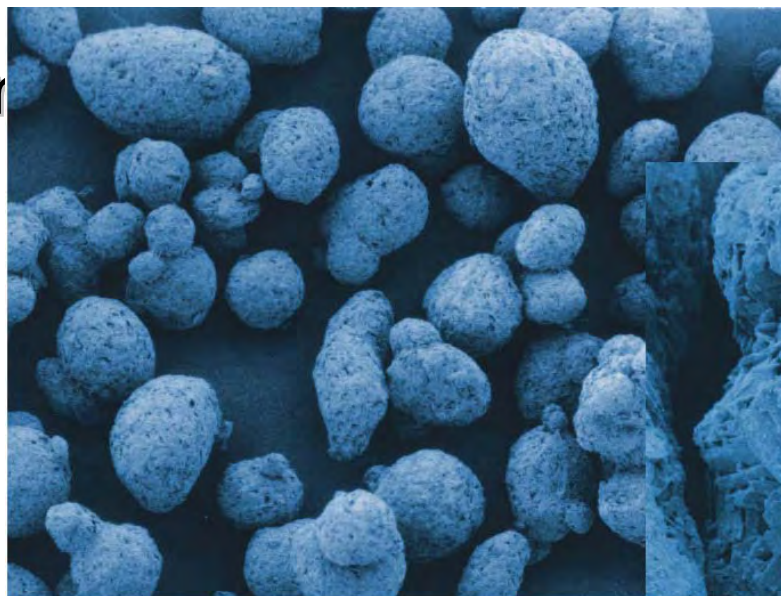
DE approx. 95



**Direct Compression
Not Wet Granulation**

Dry Binders

- Mono- ar



SEM - Photographs of EMDEX® x 50



SEM - Photographs of EMDEX® x 300

**EMDEX® Dextrates NF, Hydrated
DE approx. 95**



EMDEX[®]
Dextrates, Hydrated NF

Applications

- **chewables**
- **non-chewables**
- **solubles**
- **dispersible and effervescent tablets**



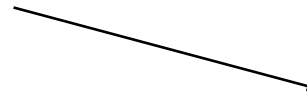


What is the Emdex[®] Advantage?

**Only Compendial Spherical
Dextrate**



Controlled Median Particle Size



Superior Compaction

Superior Flow

Superior Carrying Capacity

What does this mean in the market place?

Cost Advantage:

Excipients, Formulation time, Production

Market Advantage:

Distinctive, Better tasting tablets

EMDEX[®]
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What are the EMDEX[®] Advantages?

- **EMDEX[®] tablets are soluble.**
- **EMDEX[®] provides a pleasant, sweet taste and a cool, pleasing mouth feel.**

EMDEX[®] has about 50% of the sweetness of ordinary sugar.

EMDEX[®] tablets are distinctive because they taste better.



EMDEX[®]
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What are the EMDEX[®] Advantages?

- **EMDEX[®] tablets are lactose free !**
- **EMDEX[®] delivers superior flow, compressibility and tablet integrity, in direct compression. EMDEX[®] reduces production costs by DC.**



EMDEX[®]
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What are the EMDEX[®] Advantages?

- **Particles porosity improves EMDEX[®] solubility and flavor absorption capacity - a key advantage for tablet taste enhancement, better oil & flavour carrying capabilities**
- **EMDEX[®] is almost dust free.**
- **EMDEX[®] is compendial (NF). This eliminates regulatory hurdles.**



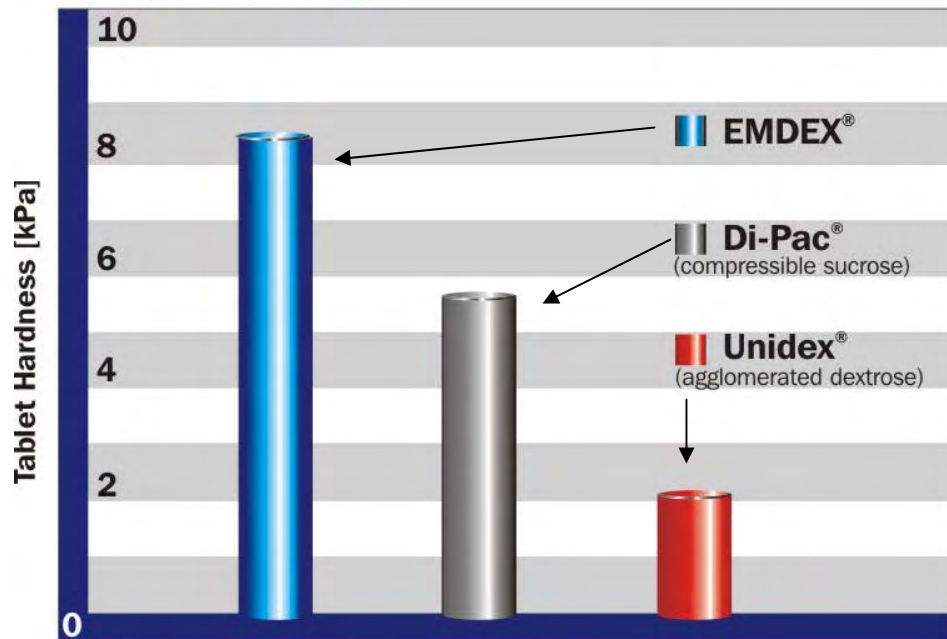


EMDEX[®] **Tabletting Properties**

Dextrates, Hydrated NF

How good does EMDEX[®] compress ?

Compressibility



Placebo tablets, lubricated with 1% magnesium stearate

EMDEX[®] has superior compressibility.

It is between 1.5 and 4 times more compactible than competitive dextrose.

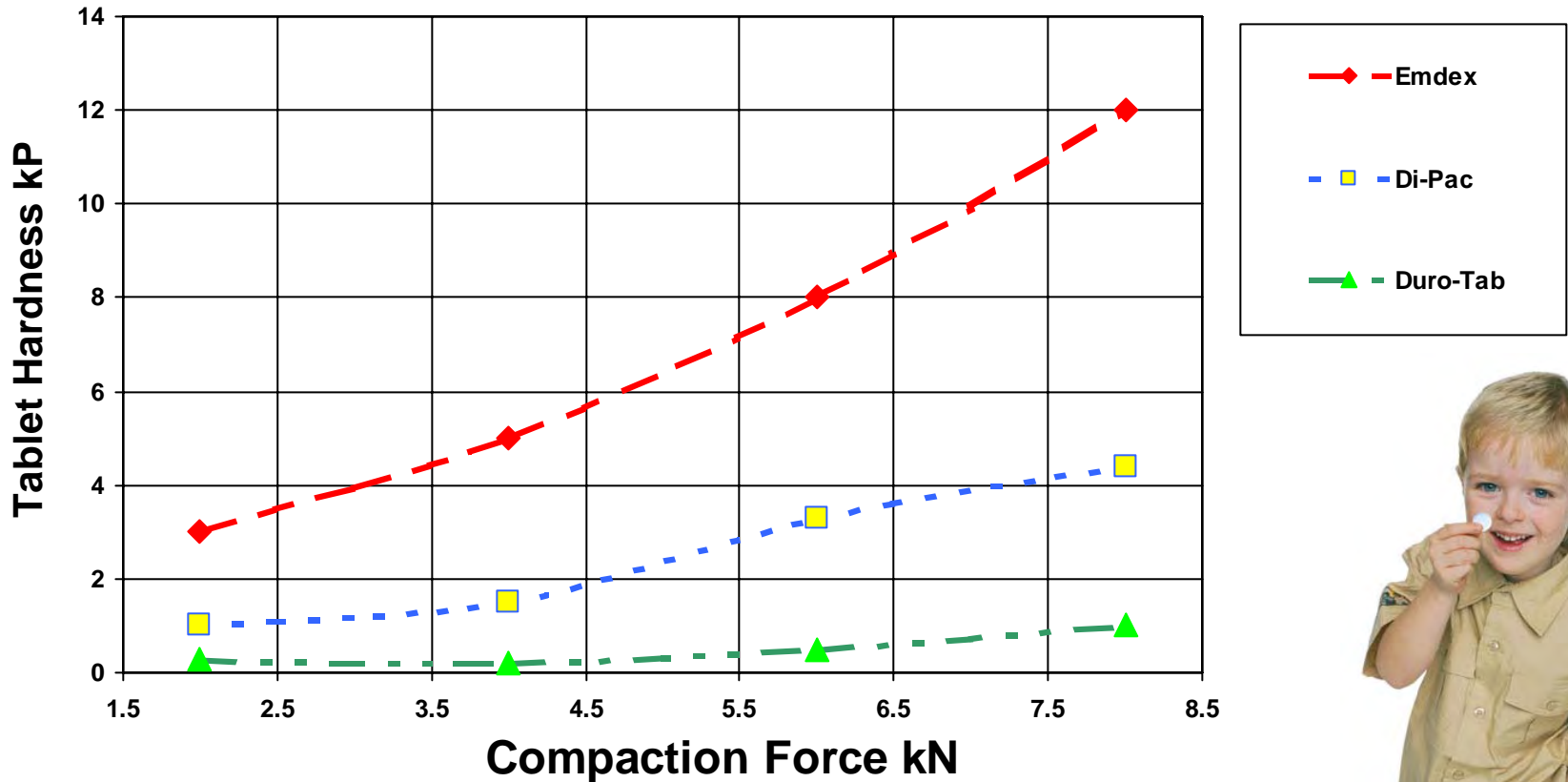




EMDEX[®]
Dextrates, Hydrated NF

Superior Hardness: 2 to 4 Fold

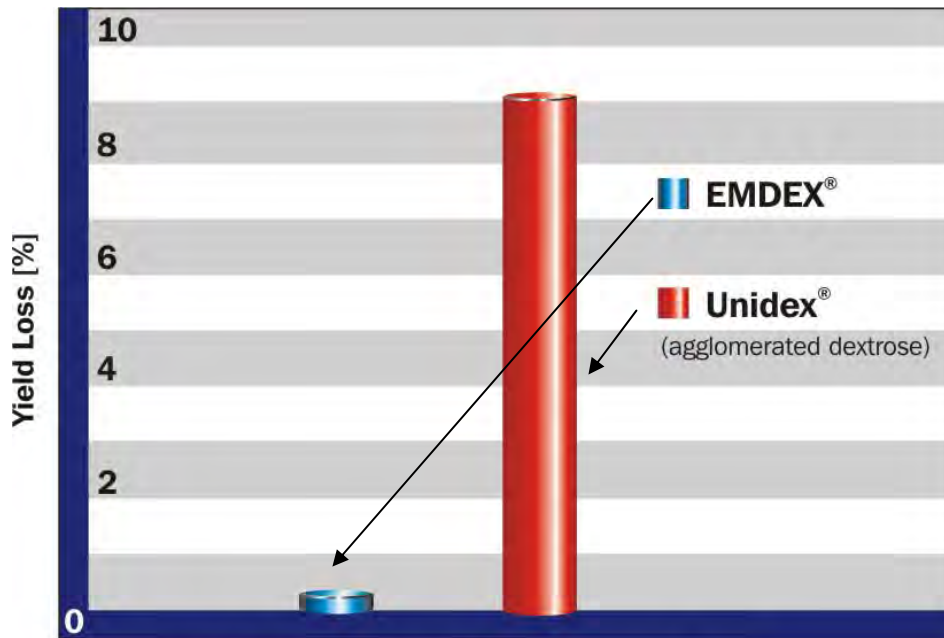
Tablet Hardness as a Function of Compaction Force



EMDEX[®] **Tabletting Properties**

Dextrates, Hydrated NF

This results in a low Yield Loss > saves costs!



Placebo tablets, lubricated with 1% magnesium stearate

EMDEX[®] enhances tablet integrity eliminating yield loss normally encountered with competitive products.

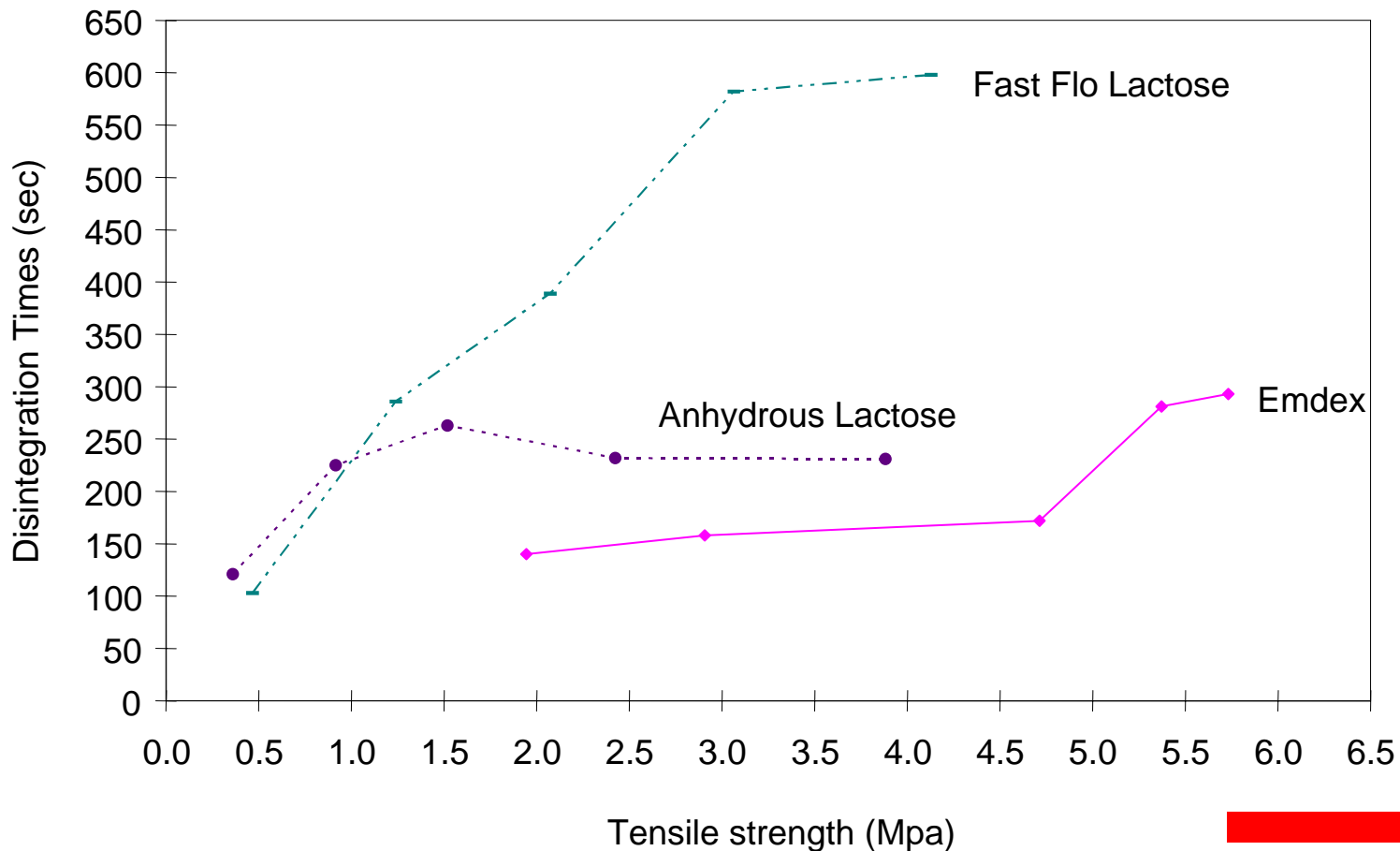




EMDEX[®] Tablet Disintegration

Dextrates, Hydrated NF

Tablet Disintegration as a Function of Tensile Strength

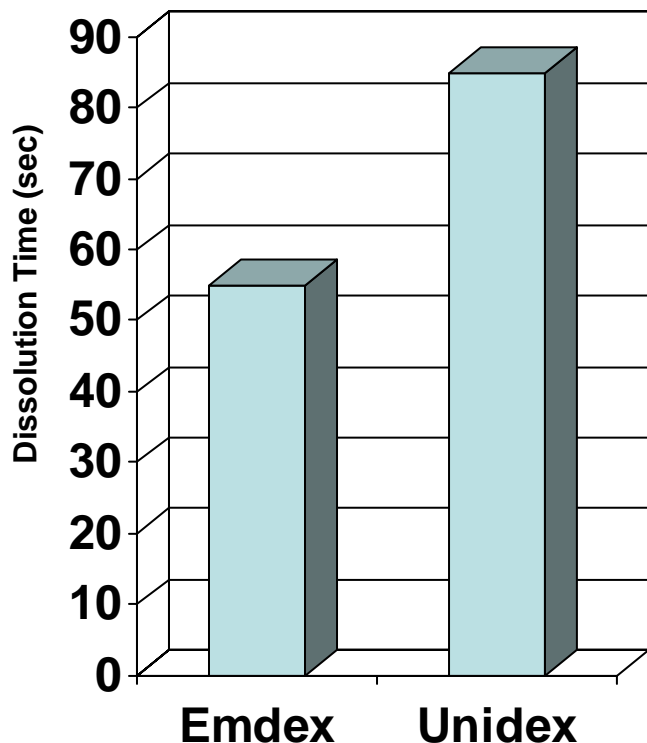




EMDEX[®]
Dextrates, Hydrated NF

Superior Dissolution

Dextrate Dissolution



Excellent in chewable and effervescent applications

Potential for quicker Onset of Action for ingestible tablets

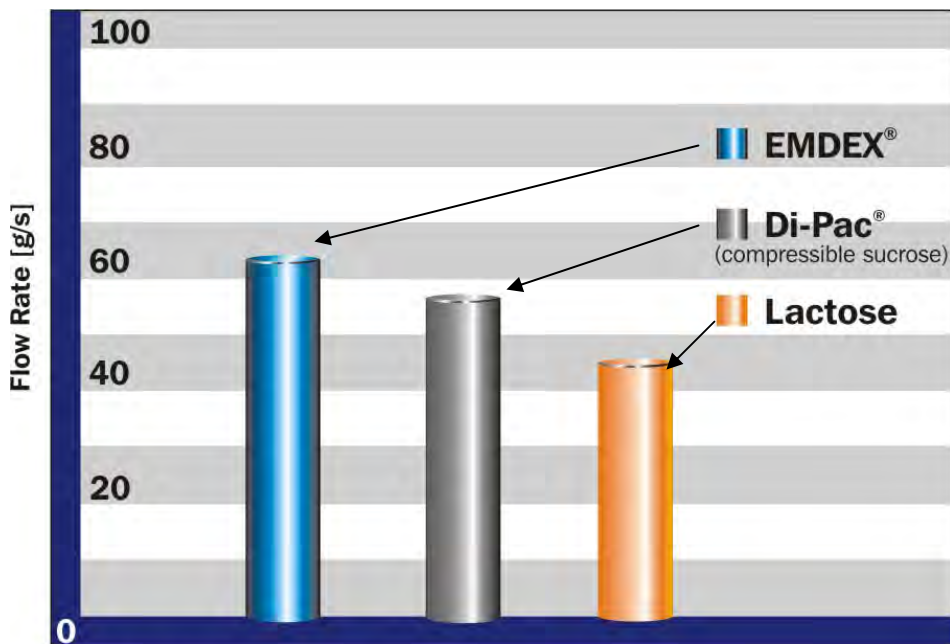




EMDEX[®] **Tabletting Properties**

Dextrates, Hydrated NF

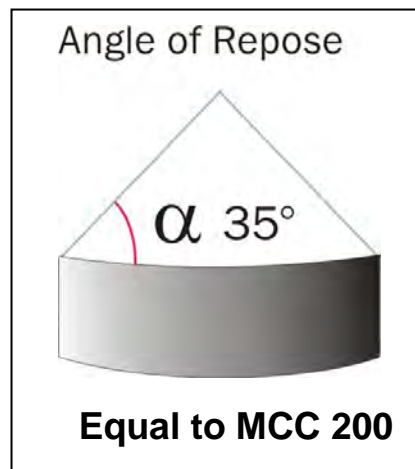
How good does EMDEX[®] flow ?



Placebo tablets, lubricated with 1% magnesium stearate

EMDEX[®] delivers superior flow, more than 30% faster than competitive products.

Glidant addition is not required.





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Formulations with EMDEX[®]

Antacid Tablet

Aluminium hydroxide	400,0 mg
Salicylic Acid	50,0 mg
Aroma	20,0 mg
Mg-stearate	16,0 mg
EMDEX	1.014,0 mg



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Formulations with EMDEX[®]

Sodium Fluoride Chewable Tablet

Sodium Fluoride	2,200 mg
EMDEX	106,425 mg
Grape Flavour	0,275 mg
Colour	0,275 mg
Mg-stearate	0,825 mg



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Formulations with EMDEX[®]



Dosage: up to 50%

Incompatibility

EMDEX[®] contains reducing sugars, so it has the potential for Maillard reactions with primary amino groups. Beside this, no further incompatibilities with actives or other excipients are known.



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Industry Examples

Immodium Advanced Chewable

Milk of Magnesia Chewable Tablets

Benadryl Chewable

Actiq, Cephalon

Pepcid Complete, Johnson & Johnson

