

# THERMODYNAMICS OF GELS: PECTIN GELS

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- Gelification

Intrinsic and extrinsic factors affect gelification.

- Intrinsic parameters

- Length of the backbone
- Degree of methoxylation (DM)
- Amidation degree

According to the Degree of methoxylation pectins can be classified in high methoxyl (DM>50%) and low methoxyl (DM<50%) pectin.

- Physical Interactions

High methoxyl pectin:

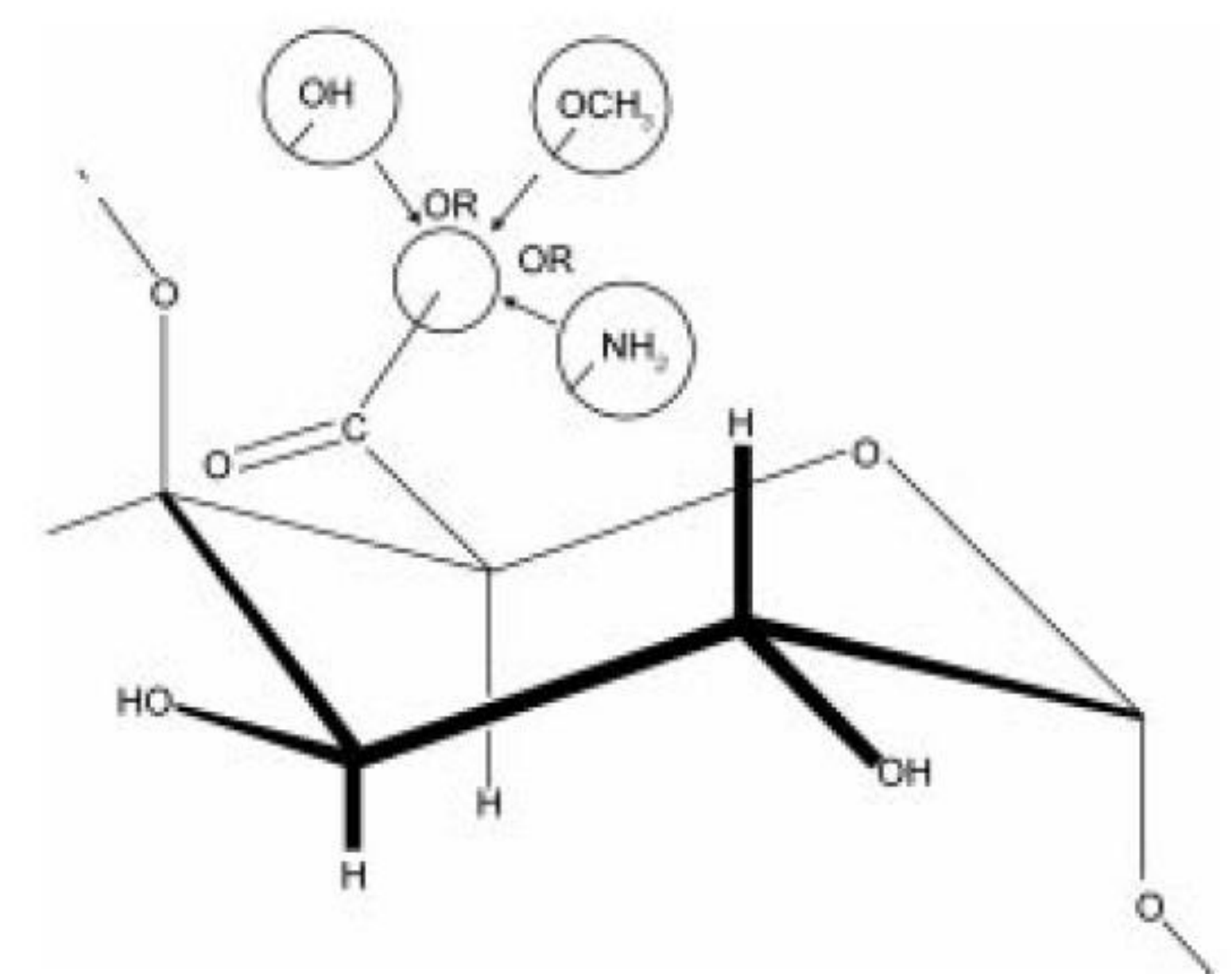
- Hydrophobic interactions
- Hydrogen bonds

Low methoxyl pectin:

- Ca-bridges

- Pectins

They are naturally present in every plant. They are chains of galacturonic acid and other sugars.



- Extrinsic parameters

High methoxyl pectin:

- pH → 2-3.5
- Soluble solids → >55%

Low methoxyl pectin:

- pH → 2.5-6.5
- [Ca<sup>2+</sup>] → >20 mg/g pectin

- Applications

There are loads and different applications, the most important one is the use in marmalades.

