



TECHNICAL APPLICATION
INFORMATION



**H&F Pectins
for Confectionery with few Acid or
high Product-pH-Values**

H&F PECTINS FOR CONFECTIONERY WITH FEW ACID OR HIGH PRODUCT-PH-VALUES

NOT ONLY SOUR IS YUMMY

Jelly and gum confectionery have to be soft, but not slushy. If you can pull them a bit long and they are a bit sour, will hit also the spot, says Paul. Paul is 9 years old and classified as an authority for sweets among his friends. Paul also finds jelly bananas, jelly products at all and foamed candy great. Because a bit variety every now and then is funny. However, what is not interesting for Paul (up to now) is how his favourite sweets are produced and what they contain.

So, for later on, Paul:

Acidic jelly and gum confectionery mainly contain sugar, glucose syrup, water, buffer salts and pectin. With adding flavours and citric acid these products obtain their typical flavour. Citric acid is added for reasons of obtaining a fruity-acidic flavor and to initiate the so called sugar-acid-gelation leading to gel formation and the desired texture when high methylester pectins are used.

Besides the typical acidic products such as jelly fruits and gum products also less acidic gel products with vanilla, coffee or caramel flavour, Turkish Delight (Sade Lokum) as well as foamed candy products neutral in pH-value and milk jellies are part of this product range.



In addition to the well-known not buffered resp. buffered H&F Classic pectins, Pectin Amid CS 005 can be used for production of confectionery with pH-values between 3.2 and 3.6. The gelling temperature of gel preparations with Pectin Amid CS 005 is lower than that of the same preparations manufactured with H&F Classic Pectins. Hence the use of buffer salts, which have to be neutralized by adding acid if Classic Pectins have been used, can be dispensed with. Thus, the products contain less acid at the same pH-value ($\text{pH} < 3.6$) and taste less acidic – an advantage for products with e.g. banana or vanilla flavor.

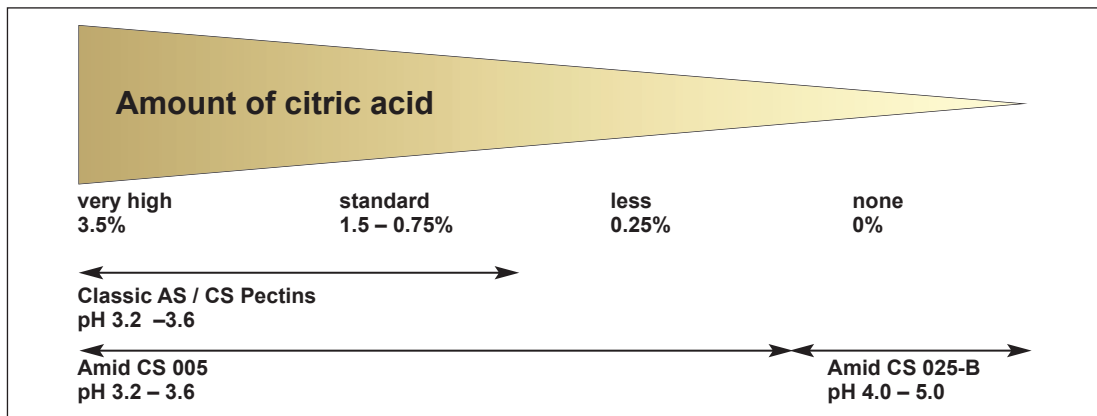


Fig.: H&F pectins for use in jelly and foamed candy products

Products, which due to their flavour may not have any acidic taste and which have a higher pH-value, however, cannot be manufactured with Pectin Amid CS 005 as this pectin would not sufficiently gel at pH-values > 3.6.

For this special application H&F have developed the confectionery pectin Amid CS 025-B which forms elastic gels exactly at these comparatively high product-pH-values without adding edible acids. Pectin Amid CS 025-B is a low methylester, amidated pectin already standardized with buffer salts which is tasteless and excellently to deposit. The gelling temperature of Pectin Amid CS 025-B is comparable with our H&F Classic AS / CS Pectins and guarantees a long processing time and reliable production technology.

Depending on customer's demands, both less acidic, transparent jelly products, Turkish Delight products or milk jellies with elastic-viscous texture can be manufactured. Foamed candy products with Pectin Amid CS 025-B are, depending on the foam density, very easy to process and show very high form stability.



The following formulations with Pectin Amid CS 025-B are basic examples for the production of jelly and gum confectionery, foamed candy products or milk jellies:

JELLY FRUIT, FILLED INTO STARCH / FORMS

Pectin Amid CS 025-B is a low methylester, amidated pectin forming transparent gels with elastic-viscous texture in products with a soluble solids content of approx. 78% and a product-pH-value of approx. 4.5.

Herbstreith & Fox KG		Recipe
<i>Jelly Fruit, filled into starch /forms</i>		
Pectin Amid CS 025-B		
25g	Pectin (= 2.5%)	Manufacturing A Pectin to be mixed with approx. 100g sucrose (taken from total amount). B Mixture "A" to be stirred into water and to be heated up until the pectin is completely dissolved. C Rest of sucrose and corn syrup to be added and to be cooked to final soluble solids. D Colour and flavour to be added. E Depositing temperature approx. 95°C.
360g	Sucrose, crystalline	
475g	Corn syrup 80% TSS	
220g	Water	
	Colour, flavour	
Input:	approx. 1080g	
Output:	approx. 1000g	
TSS:	approx. 78%	
pH-value:	approx. 4.5	





FOAMED CANDY PRODUCTS, FINISHED ON PRODUCT
 With Pectin Amid CS 025-B it is possible to produce foamed candy products without addition of edible acids. The products are excellently to process and show high form stability. However, Pectin Amid CS 025-B is also perfectly suitable for use in foamed candy products filled into starch or forms with usually less aeration.

Herbstreith & Fox KG		Recipe
<i>Foamed Candy Products</i>		
Pectin Amid CS 025-B		
25g Pectin (= 2.5%) 375g Sucrose, crystalline 45g Sorbitol, crystalline 40g Fructose, crystalline 360g Corn Syrup 80% TSS 10g Protein powder 160g Water Colour, flavour	Input: approx. 1015g Output: approx. 1000g TSS: approx. 78% pH-value: approx. 4.5 – 5.0	Manufacturing A Protein powder to be mixed with the four-fold amount of water (taken from total amount). B Pectin to be mixed with the fivefold amount of sucrose (taken from the total amount). C Mixture “B“ to be stirred into rest amount of water and to be heated up to 90°C. D Rest amount of sucrose, fructose, sorbitol and corn syrup to be added and to be heated up to 95°C. E Colour and flavour to be added. F Protein solution “A“ to be added. G Batch to be filled into heated container of a pressure foaming machine. H Foamed mass to be poured into moulding starch. Depositing temperature approx. 65°C.
Adjustment of Hansa Mixer: Foam density: 800 g/L for deposited products Foam density: 300 g/L for dressed products	Pump: 40 L/hour Mix head setting: 350 U/min Hansamixer setting: automatic The container for the mass and the supply into the mix head are heated to 75°C.	

MILK JELLY / CARAMEL JELLY

Using Pectin Amid CS 025-B and sugared or also caramelized condensed milk it is possible to produce milk jellies with very smooth and elastic texture.



Herbstreith & Fox KG		Recipe
<i>Milk Jelly / Caramel Jelly</i>		
Pectin Amid CS 025-B		
25g	Pectin (= 2.5%)	Manufacturing A Pectin to be mixed with approx. 100g sucrose (taken from total amount). B Mixture "A" to be stirred into water and to be cooked until pectin is completely dissolved. C Rest amount of sucrose, sweetened condensed milk and corn syrup to be added and to be cooked to final soluble solids. D Colour and flavour to be added. E Depositing temperature approx. 95°C.
360g	Sucrose, crystalline	
375g	Corn syrup	
150g	Sweetened condensed milk 70% TSS	
200g	Water Colour, flavour	
Input:	approx. 1100g	
Output:	approx. 1000g	
TSS:	approx. 78 – 79%	
pH-value:	approx. 4.5 – 5.0	