



# Superior sourness, unrivaled stability

PURAC® liquid specialties in confectionery



- Differentiate sourness
- Fruit flavor enhancement
- Maintain texture stability
- Predictive modeling

Acidulants provide sourness and freshness in otherwise overly sweet-tasting candy. However, adding an acidulant to reach the desired sourness can trigger sugar inversion during candy production, which can result in undesired stickiness and deformation. Acids can also effect other ingredients like gelatin degradation or color destabilization. Corbion supplies a range of buffered acid solutions under its proven PURAC® brand that provide much needed stability alongside sourness you desire.

### Differentiation on taste

Each acidulant has a different sour taste profile; some are quite intense and short-lived, while others are smoother and longer-lasting (Table 1, Acidulants). Using different acids (or even a combination of acids) is a great starting point to differentiate a candy's taste profile. The freshness of citric acid, for example, combined with the mild lingering acid profile of lactic acid, creates an all-round great tasting candy. Blending various acids can also result in processing benefits. Adding one blend to the sugar mass, as opposed to adding multiple individual acidulants, reduces operational complexity, as well as potential dosage errors.



Acidulant	Sour intensity	Lasting time
Citric acid	++++	+++
Lactic acid	++	+++++
Malic acid	+++	++++
Tartaric acid	+++++	++

Table 1: Acidulants



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### Maintain texture stability

Adding an acidulant to hard-boiled candy can trigger sugar inversion and is known to impact the product's texture stability. Should sugar inversion occur, the candy can become sticky and even deformed over time. Acidulants, therefore, directly impact the perceived quality of candy, as well as its taste profile. The PURAC® buffered acid blend range provides the required sourness, while maintaining product stability. For candies containing gelatin, the acidulant negatively effects the gelatin strength. By using PURAC® buffered acids, the gel strength remains stronger, as demonstrated in [Figure 1](#). This creates opportunities for firmer textures as well as cost optimization as gelatin can be reduced up to 7%.

### Sugar Inversion Tool

Corbion knows how to increase candy sourness, without affecting its stability. In fact, we have combined decades of application expertise with scientific research to create a modeling tool, that can help predict both sourness and stability in hard-boiled candy. The Sugar Inversion Tool enables us to give you on-the-spot formulation advice, whether you want to increase the sourness of your candy or reduce its sugar inversion levels.

[Figure 2](#) shows how the sugar inversion tool can help to adjust formulations to reduce sugar inversion, while maintaining sourness. This example shows that by replacing citric acid with PURAC CLM, the sugar inversion significantly drops while the sourness maintains at the same level. Contact us if you like to learn more about this confectionery modeling tool.

### Gelatin strength, influence of acid type

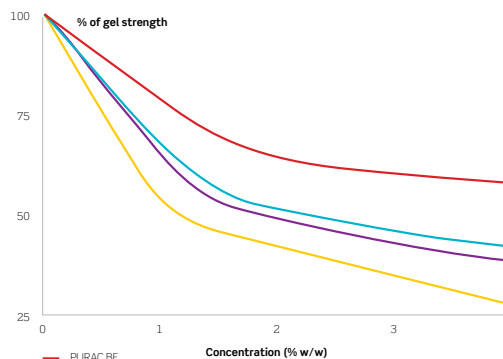


Figure 1

Model system: 5% gelatin (acid type) 240-260 Bloom

### Results of the sugar inversion tool



Figure 2

## Corbion offers the following liquid specialties for the confectionery industry:

Brand	Chemical	Usage level%
<b>PURAC® CL</b>	Buffer of citric acid and lactic acid (l)	1-4
<b>PURAC® CLM</b>	Buffer of citric acid, lactic acid and malic acid (l)	1-4
<b>PURAC® BF</b>	Buffered lactic acid (l)	1-4
<b>PURASAL® S</b>	Sodium lactate (l)	0.5-1
<b>PURAC® FCC</b>	Lactic acid (l)	0.5-2

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Corbion creates innovative ingredient solutions for leading food manufacturers around the world. Our expertise inspires customers to craft foods that start flavorful, stay fresh and remain safe, from date of production to date of consumption. Using sustainable solutions that deliver real, consumer-focused value, we work side-by-side with customers, helping them grow and create delicious food that capture peoples' palates and earn their trust. At Corbion our priorities as consumers shape the solutions we create, and as a result, feel confidence and pride in serving our own families and friends the products we help make possible.

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