Saccharin

WHAT IS SACCHARIN?

- The first intensive, low/non-calorie sweetener
- A bicyclic, sulfur-containing compound

PROPERTIES OF SACCHARIN

- Non-caloric: Contributes 0 kcal/g
- 200–700x sweeter than sucrose
- Non-glycemic
- Odourless
- Calcium and sodium saccharin readily dissolves in water
- Does not tolerate high temperatures – unsuitable for cooking
- Degradation of saccharin is dependent on the pH levels and temperatures
- Can result in a bitter, metallic, cooling or liquorice-like aftertaste
- Slow and lingering onset of sweetness
- Due to its bitter and metallic taste characteristics, saccharin is most commonly employed in blends with other sweeteners, both caloric and non-caloric
  - The absence of sweetness synergy between saccharin and Acesulfame-K is expected due to the similarity in their chemical structures
  - Can be used in a sweetener blend of sorbitol and mannitol
  - Can be added in combination with aspartame and cyclamate, where the sweetness contribution from saccharin is reduced such that there is no bitter or metallic aftertaste present
- Not metabolised by the human body and is excreted unchanged

APPLICATIONS

Saccharin is often used to sweeten beverages and for table top applications. In other food applications, sachaarin must be blended with zero- or reduced-calorie sugar substitutes to mimic the physical properties of sugar.

- Table top sweetener
- Beverages
- Baked goods
- Jams
- Chewing gum
- Dessert toppings
- Salad dressings
- Canned fruits
- Candy
- Vitamins

DID YOU KNOW?

Despite the controversies, Asia continues to be the world's biggest consumer of saccharin.

REGULATORY STATUS OF SACCHARIN

- Saccharin was listed as a "reasonably anticipated" carcinogen in 1981 but was removed in 2000, with the sweetener approved for use by the US Food and Drug Administration (US FDA)

SACCHARIN IN A NUTSHELL

Scientific Name
Saccharin

Brand Name
Sweet'N Low, Sweet Twin, Necta Sweet

Sweetness Intensity
200–700x sweeter than sucrose

ADI Limit
5mg/kg body weight

Safe for Children?
Yes

Safe for Pregnant and Breastfeeding Women?
Yes

Nutritive Value
0 kcal/g

References
[1] Mérillon, J. and Ramawat, K. (2018). Sweeteners. Cham, Switzerland: Springer Nature.
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[3] O'Donnell, K. and Kearsley, M. (2008). Sweeteners and Sugar Alternatives in Food Technology. 2nd ed. New York, NY: John Wiley & Sons.