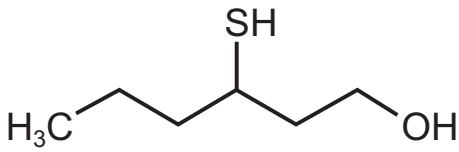
Ingredient Profile: 3-Mercaptohexanol*

Savory, alliaceous and fruity facets



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Ingredient Profile is an occasional feature from the Chemical Sources Association (CSA; www.chemicalsources.org*), providing insights into specific flavor compounds.*

–Editor

Synonyms:
- 3-Thiohexanol
- 3-Thiohexan-1-ol

Status: Natural

FEMA# 3850

CAS# 51755-83-0

Molecular formula: $C_6H_{14}OS$

The purity and enantiomeric form for this material are essential to its description. Descriptors published by Frutarom and Treatt range from mango and pineapple to durian, chicken and pork. In a 0.1% solution presented during a recent CSA meeting, the material was markedly savory, with a distinct rhubarb note. At dilutions below 0.01% the material imparts fruitier notes.

*One supplier, A.M. Todd, lists this material as a 50/50 mix of the (R) and (S) enantiomers.

In *European Food Research and Technology* Bernhard Weber found an enrichment of the (S) enantiomer in yellow and purple passionfruit.[1] However, the range for the (S) enantiomer varies greatly.

The ingredient is found in a wide variety of red wines such as cabernet sauvignon, cabernet franc, Bordeaux and merlot. White wines that contain 3-mercaptohexanol include sauvignon blanc, sauvignon Semillon and petit arvine. The latter wine is described as having strong grapefruit and rhubarb notes. According to Ferriera, Grenache rosé wine's most significant flavor contributor is 3-mercaptohexanol.[2]

This is also a component of Belgian lager beers, which are interestingly described as having an exotic fruit and rhubarb note.[3]

The University of Florida's Rouseff tentatively identified 3-mercaptohexanol in grapefruit juice.[4]

Clery reported this as a novel key sulfur component of pink guava in 2008.[5]

Potential uses: Passion fruit, grapefruit, guava and other tropical flavors, rhubarb, blackcurrant, certain wine varietals, and beer, roasted, savory, chicken, pork and alliaceous flavors.

References

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2. V Ferreira, N Ortin, A Escudero, R Lopez and J Cacho, Chemical characterization of the aroma of Grenache rosé wines: Aroma extract dilution analysis, quantitative determination, and sensory reconstitution studies. *J Agric Food Chem*, **50**, 4048–4054 (2002).
3. C Vermeulen, S Bailly and S Collin, Occurrence of polyfunctional thiols in fresh and aged lager beers. *Dev Food Sci*, **43**, 245–248 (2006).
4. RL Rouseff, PR Perez-Cacho and F Jabalpurwala, Historical Review of Citrus Flavor Research during the Past 100 Years. *J Agric Food Chem*, **57**, 8115–8124 (2009).
5. RA Clery and CJ Hammond, New Sulfur Components of Pink Guava Fruit (*Psidium guajava* L.). *J Essent Oil Res*, **20**, 315–317 (2008).