



## Hexane isomers (excluding n-Hexane)

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Hexane is an alkane of six carbon atoms, with the chemical formula C<sub>6</sub>H<sub>14</sub>. The term may refer to any of the five structural isomers with that formula, or to a mixture of them:

- 1) n-Hexane
- 2) 2-Methyl pentane, Dimethylpropylmethane, Isohexane (CAS No. 107-83-5)
- 3) 3-Methylpentane, Diethylmethylmethane (CAS No. 96-14-0)
- 4) 2,2-Dimethylbutane, Ethyl-trimethylmethane, Neohexane (CAS No. 75-83-2)
- 5) 2,3-Dimethylbutane (CAS No. 79-29-8) [The MAK-Collection].

Hexane isomers are clear liquids with mild, gasoline-like odors.

Hexane isomers are strong oxidizers [CDC].

### Usage and exposure

Isomers of hexane are present in organic solvents, adhesives, protective coatings and paints. They are also components of gasoline (motor spirit, petrol) and can occur as intermediates in the refining of petroleum [The MAK-Collection].

### Routs of exposure

Inhalation, ingestion, skin and/or eye contact [CDC].

### Target organs

Eyes, skin, respiratory system, central nervous system [CDC].

## Health hazards

Symptoms of exposure: irritation eyes, skin, respiratory system; headache, dizziness; nausea; chemical pneumonitis (aspiration liquid); dermatitis [CDC].

Commercial hexane which caused polyneuropathy in many workers contained 10-40% of 2-methylpentane and 3-methylpentane. 2-methylpentane and 3-methylpentane were shown to be neurotoxic like n-hexane. [Ono Y].

## References

- CDC, Centers for Disease Control and Prevention. NIOSH Pocket Guide to Chemical Hazards. Hexane isomers (excluding n-Hexane). <https://www.cdc.gov/niosh/npg/npgd0323.html>
- The MAK-Collection for Occupational Health and Safety: Annual Thresholds and Classifications for the Workplace. Hexane (all isomers except n-hexane). <https://onlinelibrary.wiley.com/doi/pdf/10.1002/3527600418.mb11054isme0004>
- Ono Y, Takeuchi Y, Hisanaga N. A comparative study on the toxicity of n-hexane and its isomers on the peripheral nerve. Int Arch Occup Environ Health. 1981;48(3):289-94.