

以下の英文を日本語に翻訳しなさい

### 1. Monocyclic Aromatic Hydrocarbons (MAHs)

Aromatic hydrocarbons are hydrocarbons that exhibit aromaticity and consist of either a single ring or multiple fused rings. They are sometimes abbreviated as "AH." When an aromatic hydrocarbon functions as a substituent, it is referred to as an aryl group, abbreviated as "Ar-." Typical examples of aryl groups include the phenyl and naphthyl groups. The term "aromatic hydrocarbons" is sometimes used interchangeably with "aromatic compounds"; however, in a broader sense, aromatic compounds also include heteroaromatic species.

Structurally, aromatic hydrocarbons are composed of one or more planar rings made up of six carbon atoms in which single and double bonds alternate, resulting in delocalized electrons. The simplest aromatic hydrocarbon is benzene, a six-membered cyclic compound commonly known as the benzene ring. Historically, before its structure was understood, many such compounds were noted for their strong odors, which is why they came to be called "aromatic hydrocarbons."

### 2. Polycyclic Aromatic Hydrocarbons (PAHs)

Among arenes, PAHs are of particular interest. PAHs, also called polynuclear aromatic hydrocarbons, consist of two or more fused aromatic rings. The simplest examples include naphthalene and azulene. PAHs with three or more rings are poorly soluble in water and have low vapor pressures, both of which decrease further as molecular weight increases. In contrast, two-ring PAHs show relatively higher solubility and vapor pressure. Because of these properties, PAHs are more commonly found in soils and sediments than in water or air, although particle-bound PAHs can also be detected in aquatic and atmospheric environments. Moreover, as molecular weight increases, the carcinogenic potential of PAHs generally rises, whereas their acute toxicity decreases. Benzo[a]pyrene, one of the PAHs, was the first compound to be identified as carcinogenic.

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