Odorless Cosmetic Chemicals Specialist

1,2-Hexanediol
1,2-Pentanediol
1,3-Butanediol
We, COEM, have dedicated ourselves to the development of the highest quality odorless 1, 2-Hexanediol with all our passion and energy. We also have built up an excellent reputation and trust in the market over a decade by taking the utmost care of our clients.

In order to satisfy customer expectation, we will always do our best to understand customer needs and enhance a comprehensive range of additional services. To be a reliable partner at all times, we constantly rethink and improve our processes.
COEM is a company that researches, develops, and produces high-value cosmetic additives as well as a wide range of fine chemical products. We have supplied our deodorization technology-based cosmetic ingredients to customers.

Expanding our position as the leading innovator in the cosmetic chemicals industry since June 2007, COEM has been developing our own deodorizing technology, which is the key process to make high quality odorless 1, 2-Hexanediol.
COEMDIOL-6

What is COEMDIOL-6(CHD-60)?

- Odorless, Colorless Liquid Form
- Applications: All kinds of Cosmetics
- Moisturizer, Solvent, and a Broad Spectrum of Anti-Microbial Agents (Superior preservability)
- Highly Compatible with Different Cosmetic Ingredients
- Stable over a Broad Range of PH & High Temperature
- Excellent Safety & Toxicological Profile
- Much Lower Skin Irritation than any other Anti-Microbial Agents (1,2-Octanediol)
- Recommended Dosage: 2.0% - 2.5%

* For more information, refer to the COA and MSDS

Product Info.
Chemical Name/INCI: 1,2-Hexanediol
CAS No.: 6920-22-5
EINECS No.: 230-029-6
Chemical Formula: C₆H₁₄O₂
Mol. Weight: 118.17 g/mol
Chemical Structure:

\[
\begin{align*}
\text{OH} & \\
\text{O} & \\
\text{H} & 
\end{align*}
\]

Specification
Characteristics: Odorless & Clear Liquid
Purity(by GC): ≥99.0
Moisture(by Karl-fisher): <0.5
Refractive Index(n₂₀/D): 1.437-1.447
Specific Gravity(20/4°C): 0.946-0.956
Formaldehyde: Not detected

MIC Data (Minimum Inhibitory Concentration Data)

- Applied to 5 different kinds of Microorganisms - COEMDIOL-6(CHD-60)

<table>
<thead>
<tr>
<th>Preservatives</th>
<th>E. coli</th>
<th>S. aureus</th>
<th>P. aeruginosa</th>
<th>C. albicans</th>
<th>A. niger</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pentanediol</td>
<td>3.1</td>
<td>6.2</td>
<td>3.1</td>
<td>2.5</td>
<td>2.5</td>
</tr>
<tr>
<td>Hexanediol(COE)</td>
<td><strong>1.5</strong></td>
<td><strong>2.3</strong></td>
<td><strong>1.5</strong></td>
<td><strong>1.2</strong></td>
<td><strong>0.6</strong></td>
</tr>
<tr>
<td>Octanediol</td>
<td>0.1</td>
<td>0.3</td>
<td>0.3</td>
<td>0.1</td>
<td>0.07</td>
</tr>
<tr>
<td>Glycerin Caprylate</td>
<td>0.1</td>
<td>0.2</td>
<td>0.2</td>
<td>0.02</td>
<td>0.02</td>
</tr>
<tr>
<td>Methyl Paraben</td>
<td>0.1</td>
<td>1.6</td>
<td>0.1</td>
<td>0.02</td>
<td>0.02</td>
</tr>
<tr>
<td>Phenoxy Ethanol</td>
<td>3.8</td>
<td>5</td>
<td>1.6</td>
<td>0.1</td>
<td>0.1</td>
</tr>
</tbody>
</table>

- Applied to microorganisms along with other preservatives
**Challenge Test (Preservative efficacy test)**

![Graphs showing CFU counts over time for Bacteria and Fungi](image)

<table>
<thead>
<tr>
<th>Organisms</th>
<th>Gram behavior</th>
<th>Species</th>
<th>ATCC#</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bacteria</td>
<td>Negative</td>
<td>Escherichia coli</td>
<td>11229</td>
</tr>
<tr>
<td>Bacteria</td>
<td>Positive</td>
<td>Staphylococcus aureus</td>
<td>6538</td>
</tr>
<tr>
<td>Bacteria</td>
<td>Negative</td>
<td>Pseudomonas aeruginosa</td>
<td>15442</td>
</tr>
<tr>
<td>Yeast</td>
<td>Negative</td>
<td>Candida albicans</td>
<td>10231</td>
</tr>
<tr>
<td>Mold</td>
<td></td>
<td>Aspergillus niger</td>
<td>6275</td>
</tr>
</tbody>
</table>

**Cultivation of test microorganisms**

Typical culture conditions are
- Bacteria 30-35°C / 18-24h
- Yeasts 20-25 °C / 44-52h
- Molds 20-25 °C / 6-10days

**Basic formula of test products**

- **Basic shampoo**
  - Sodium laureth sulfate, Cocoamidopropyl betaine, Hydrolyzed wheat protein

- **Basic O/W lotion**
  - Water, Propylene glycol, Mineral oil, Cetyl alcohol, Ceteareth 25

**COEMDIOL-60**

Hexanediol
TEL +82_41_881_8289  FAX +82_41_881_8277

Sales Director +82_10_6613_1201 / ssl3782@daum.net  Overseas Sales Manager +82_10_3400_4078 / hsw3071@naver.com

Head Office & Factory 11-11, Tancheonsaneopdanji-gil, Tancheon-myeon, Gongju-si, Chungcheongnam-do, Korea

Customer Oriented Essential Materials