

## **Notice Concerning the Establishment of Continuous Manufacturing Technology for Furfural**

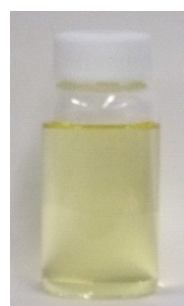
Oji Holdings Corporation manufactures dissolving pulp (\*1) from wood chips at its Oji Paper Yonago Mill (Yonago, Tottori Prefecture) via a continuous process, and engages in the sale of the pulp. The company has recently established technology for the manufacture of furfural (\*2) from the hemicellulose that is continually separated during the manufacture of dissolving pulp, and has thereby made commercial production of furfural possible.

Furfural, used mainly as a solvent in the refining of petroleum and lubricants, is a chemical substance that is currently attracting wide attention. Amid rising global expectations for a switch from fossil to biomass feedstocks, research in Japan and overseas is pursuing the use of furfural to manufacture bioplastics or general chemical products (polyurethane, PET, etc.) that are currently manufactured from fossil feedstock.

Oji Holdings Corporation believes that its furfural can make significant contributions to the development of new applications for the substance.



Furfural manufacturing plant (verification plant)



Furfural

### **Provision and test marketing of furfural samples**

Oji Holdings Corporation plans the provision and test marketing of furfural manufactured in the company's verification plant, beginning in April 2016.

#### (\*1) Dissolving pulp

Dissolving pulp is a pulp manufactured by enhancing the purity of cellulose, the main component of wood. The term generally refers to pulp with a cellulose content of 90% or greater (compared with about 85% for pulp for general paper manufacturing). Dissolving pulp is mainly used as feedstock for rayon or acetate that is used in applications such as clothing, and demand for the substance is expected to increase in the future.

#### (\*2) Furfural

Oji Holdings Corporation's furfural is manufactured through the continuous extraction of hemicellulose that is removed during the process of enhancing the purity of cellulose in the aforementioned dissolving pulp, followed by subsequent reaction and refinement in the verification plant. The furfural that is continuously produced at the same time as dissolving pulp through the use of this manufacturing technology has undergone verification of quality within the values indicated below.

#### Furfural quality

|                            | Our furfural | Description of term                     |
|----------------------------|--------------|---|
| Furfural purity (%)        | 98.5–99.0    | Pure furfural content of product (%)    |
| Moisture (%)               | 0.013–0.2    | Moisture content of product (%)         |
| Initial boiling point (°C) | 150.0–156.0  | Temperature at which liquid first boils |
| Final boiling point (°C)   | 162.5–170.0  | Highest temperature reached by liquid   |

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