Low Temperature Drying Equipment

KENKI Corporation
Contents

- Our company
- Target material
- SHTS structure
- Demonstration
- Our service
  - Drying Test
  - Contract service
  - Material Analysis
KENKI Corporation

Moriyama Factory Founded in 1964.
Moriyama Co. Ltd. Established in 1972.
Changed its name to KENKI Corporation in 1994.

DEVELOP and DESIGNE
KENKI Corporation
CEO: Hideyuki Moriyama
Equity Capital: 10 million yen
Kami-muta 3-9-7, Hakata ward, Fukuoka city
Employees: 4

MANUFACTURER
Moriyama Co. Ltd.
CEO: Hideyuki Moriyama
Equity Capital: 10 million yen
Kami-muta 3-6-19, Hakata ward, Fukuoka city
Employees: 5
Our Businesses

Productive facility

Drying equipment, Conveyor, Air-conditioning, Transmission, water treatment equipment

Integrated manufacture

Development, Design, Manufacturing, Constructing and Maintenance
Low Temperature Drying Equipment

Our drying equipment is designed for industrial slurry and sludge.
Target material

Adhesive

Silicate Calcium

Sticky

Indium

Solid

Pigment

Powder

Aluminum

Drying for the adhesive and viscous materials
Target material

- Polycarbonate
- CaO
- Chemical sludge
- Wood tip
- Food sludge (Fish)
- Food waste (Okara)
SHTS Structure

SHTS: Steam Heated Twin Screw Technology

Low Temperature
No components change

High Efficiency
24-hour non-stop working

No adhesion
No adhesion
No clogging

Low temperature drying equipment using steam from your plant
Drying capability can be adjusted from 50kg~400kg by combining the main units
Mechanism of anti-adhesion

Twin screw with scraping blade

SHTS* was patented in Japan, France and U.S.

(*) Steam Heated Twin Screw Technology
Demonstration

Mechanism of anti-adhesion

Operating
Our Service
Drying test

Example:
Paper sludge

Input
water content 86%

Output
water content 1%～30%*

(*)The drying capacity depends on the type of material and material water content.
## Drying test

### Test report

<table>
<thead>
<tr>
<th>Time (min)</th>
<th>Input (kg)</th>
<th>Output (kg)</th>
<th>Water (kg)</th>
<th>Drug (kg)</th>
<th>Overall (kg)</th>
<th>Medium (kg)</th>
<th>Water (%)</th>
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<tbody>
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<td>12.5</td>
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<td>53.3</td>
<td>6.1</td>
<td>40.0</td>
</tr>
</tbody>
</table>

**Note:** For detailed analysis and results, refer to the accompanying images and tables.
Contract service (drying service)

Need help with drying?
- At the experimental stage.
- The processing amount is small.
- No need to introduce drying equipment.

Provide drying service
- Use our drying equipment
- Please provide the material to us.
- All the work will be done by us.
- Ship dried material in the water content to meet your order.
- The dry material will be delivered to you with a drying report.
Material Analysis

Analyze your material component

( In preparation )

Gas Chromatography

FTIR
Appendix
Steam Recycle System

Low temperature

- Low pressure steam
- Heated water
- Oil

High temperature

- Hot wind
- Electric heat
- Direct flame

SHTS Dryer

<table>
<thead>
<tr>
<th>Steam pressure (Mpa)</th>
<th>Steam temperature (°C)</th>
<th>Inner temperature (°C)</th>
</tr>
</thead>
<tbody>
<tr>
<td>0.5</td>
<td>158</td>
<td>About 100~130</td>
</tr>
<tr>
<td>0.05</td>
<td>100</td>
<td>About 70~85</td>
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</table>

Processing temperature can be regulated by steam pressure
Steam Recycle System

Heat transfer in condensation

Convective heat transfer

Low pressure steam

Change into liquid

Material

Heated water

Oil

Processed by the sensible heat of hot water

The heat of liquefaction of water is about 2~5 times of its sensible heat

That’s why our dryer is compact and economical
A sludge drying case in a marine product plant
Input amount 900kg/h  moisture rate 80%⇒10%

In five years 3.5 million yen will be saved

(Unit: JPY)
Four methods of drying process

1. Crushing and drying
   - Input
   - Circulating blower
   - Exhaust blower
   - Exhaust
   - Drain
   - Output

2. Agitation drying
   - Input
   - Circulating blower
   - Heat exchanger
   - Low-pressure Steam
   - Trough heat
   - Drain
   - Output

3. Circulating drying
   - Input
   - Circulating blower
   - Heat exchanger
   - Low-pressure Steam
   - Trough heat
   - Drain
   - Output

4. Indirect drying
   - Output

By controlling the rotation speed, the regulation of output moisture rate is possible.
Distributed processing mechanism

Flexible to your needs

- Economic burden is low for per set
- Stable operation
- Can be adjusted to meet requirements
- 24 hours nonstop working

No halt in distributed processing
### KS series dimension

<table>
<thead>
<tr>
<th>Type</th>
<th>Input</th>
<th>Steam amount</th>
<th>Power supply</th>
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<tbody>
<tr>
<td></td>
<td>kg/hr</td>
<td>Kg/hr</td>
<td>kW/hr</td>
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<td>100</td>
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<td>4.5</td>
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<tr>
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<td>240</td>
<td>9</td>
</tr>
<tr>
<td>KS-4-3</td>
<td>300</td>
<td>360</td>
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<tr>
<td>KS-4-4</td>
<td>400</td>
<td>480</td>
<td>18</td>
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</tbody>
</table>

On following condition
- Initial moisture rate 80%
- Output moisture rate 20%
- (Steam pressure: 0.5Mpa)