ASAHIKLIN AE-3000 Series

Environmentally Friendly Fluorinated Fluids

From the creators of AsahiKlin AK-225 Fluorinated Solvents

AGC
Your Dreams, Our Challenge
About Us

AGC Chemicals Americas, Inc. offers the world’s broadest range of high performance fluorochemicals including fluoropolymer resins, custom compounds, fluoroelastomers and specialty chemicals. As a wholly-owned subsidiary of the century-old Asahi Glass Company in Japan, AGC Chemicals Americas, Inc. formed in 2004 as a merger between Asahi Glass America and Asahi Glass Fluoropolymers.

AGC Chemicals strives to look to the future in our approach to product development as it relates to environmental sustainability. Thus, from the creators of AsahiKlin AK-225 high performance fluorosolvents, AGC Chemicals introduces AE-3000 Series environmentally friendly fluorinated fluids.

Our Commitment to Quality

As an ISO 9001 and 14001 registered and certified company, we embrace a Quality Philosophy of total dedication to continual improvement. How we achieve this is by focusing on our customers’ needs through partnerships and teamwork.

We are committed to valuing your feedback as an opportunity to improve our processes, products and ultimately your satisfaction.

ASAHIKLIN
AE-3000 Series
Our Pledge to the Environment: Chemistry for a Blue Planet

AGC Chemicals is committed to creating a safe, secure, comfortable and environmentally friendly world with chemical technology. We have adopted this pledge as our company’s worldwide vision, thus inspiring the creation of our AsahiKlin AE-3000 series products among many other environmentally sound fluorinated chemicals and resins.

Nonflammable
The AsahiKlin series have no flash point, thus does not require explosion proof equipment.

Broad Compatibility
The AsahiKlin series can be used for a variety of customer applications.

Cost-saving
The AsahiKlin series have energy saving advantages and can reduce waste.

Stable
The AsahiKlin series are chemically and thermally stable.

Tailored Solvency
The AsahiKlin series have a broad range of material compatibilities.

ODP zero *1
The AsahiKlin series don’t affect the Ozone Layers.

Lower GWP *2
The AsahiKlin series have minimum Global Warming.

Recyclable
The AsahiKlin series can be recycled with distillation.

*1 ODP: Ozone Depletion Potential
*2 GWP: Global Warming Potential
AE-3000 series of environmentally fluorinated fluids were developed by AGC Chemicals as the solvents for tomorrow. They are modern cleaning agents having no flash point, no Ozone Depletion Potential (ODP), Low Global Warming Potential (LGWP), and low surface tension.

These solvents are approved for uses as a precision cleaning solvent, defluxing agent for electronic circuitry, carrier solvent for silicone and fluorinated lubricants, and as a moisture displacement fluid. AE-3000 series are designed to replace halogenated solvents with unfavorable environmental properties or that have safety concerns. AE-3000 formulations can be used in most existing vapor degreasing equipment with little or no modification.

Supply Chain Management Solutions created with your needs in mind

AsahiKlin AE-3000 series products are stored in strategic satellite warehouses throughout the USA and also can be purchased through AGC Chemicals authorized distributors. By maintaining regional supply in various packaging and weights, we can get you what you need when you need it.

Our dedicated and cross-functional Customer Service staff as well as our knowledgeable Technical Sales Representatives will support your business and strive to understand your requirements to ensure your success.

<table>
<thead>
<tr>
<th></th>
<th>AE-3000</th>
<th>AE-3000 AT</th>
<th>AE-3000 ATE</th>
<th>AE-3100E</th>
</tr>
</thead>
<tbody>
<tr>
<td>Boiling Point (°C)</td>
<td>56</td>
<td>38</td>
<td>42</td>
<td>54</td>
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<tr>
<td>Freezing Point (°C)</td>
<td>-94</td>
<td>-49.3</td>
<td>-50</td>
<td>-90</td>
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<tr>
<td>Flashpoint and Flammability Range</td>
<td>None</td>
<td>None</td>
<td>None</td>
<td>None</td>
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<tr>
<td>Ozone Depletion Level (CFC -11=1)</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Global Warming Potencial (CO₂ 100yr, ITH)</td>
<td>540 *¹</td>
<td>268 *²</td>
<td>257 *²</td>
<td>540 *¹</td>
</tr>
<tr>
<td>Packaging</td>
<td>20 kg Pail 300 kg Drum</td>
<td>20 kg Pail 250 kg Drum</td>
<td>20 kg Pail 250 kg Drum</td>
<td>20 kg Pail 250 kg Drum</td>
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*¹ Intergovernmental Panel on Climate/technology & Economic Assessment Panel Report in 2007
*² Calculated Value by the National Institute of Advanced Industrial Science and Technology (AIST)
Applications and Attributes

Precision Cleaning:
- High reliability products
- Hybrid alloys
- Precision metal components

Attributes
- Tailored solvency
- Good material compatibility
- Low surface tension
- Non-flammable / no flash point
- Recyclable through distillation

Electronics Cleaning:
- RMA / RA fluxes
- No-clean fluxes
- Printed circuit boards (PCBs)

Attributes
- Low surface tension
- Good material compatibility
- Non-flammable / no flash point
- Residue free
- Fast drying

Carrier Fluid:
- Carrier solvent for fluorinated oils and greases
- Carrier solvent for silicone oils

Attributes
- Good coating performance
- Rapid drying
- Good wetting agent
- Non-flammable

Solvent Drying:
- Also known as “dewatering” or “moisture displacement”
- Final step after aqueous or alcohol cleaning

Attributes
- Low surface tension
- Reduces drying time
- Residue free – no spots
- Broad range of material compatibility
- Recyclable through distillation
Cleaning Recommendations

It is recommended that Asahiklin AE-3000 Series fluorinated fluids be used in a vapor degreaser to optimize cleaning efficiency, economy, and emission control. Cleaning procedures for Asahiklin AE-3000 Series products are quite similar to those of AK-225 precision cleaning solvents. The procedures consist of suspending a workload over the boiling solvent, rinsing or spraying with cool solvent and drying in solvent vapor.
Comprehensive Technical Solutions

At our state-of-the-art technical center in Exton, Pennsylvania, AGC Chemicals offers personalized technical support by our industry experts with decades of experience. Here at our USA research and development hub, we support our customers' application development and product enhancement requirements with multiple laboratories that contain testing and full-size production equipment.

Examples of testing capabilities for AsahiKlin AE-3000 fluorinated fluids

- Development of precision cleaning processes
- Solvent composition analysis (purity, moisture, NVR, etc.)
- Compatibility studies involving plastics, elastomers, and metals
- Vapor degreasing parts cleaning and defluxing
- Distillation studies
- Flashpoint testing
- Relative evaporation rate evaluations

For more information about our company, products and services, please visit our website at www.agcchem.com

- Compliance certifications
- Organizational affiliations
- Technical data and SDS for standard product grades
- Processing guidelines, recommendations, and safe handling guidelines
- Brochures, news, and tradeshow schedules
- Technical papers, webinars, and announcements