DOWCLENE™ 16 Series
High Performance Modified Alcohol Solvents for Precision Parts Cleaning
Precision Parts Cleaning with Modified Alcohol Solvents

Since 1992 Dow and SAFECHEM provide modified alcohol solvents for industrial parts cleaning thus being the pioneers in this market segment. Dow and SAFECHEM further developed modified alcohol formulations together with some of the leading cleaning equipment manufacturers. A complete solution with different grades, additives and comprehensive services is available today to help meet individual customer needs.

DOWCLENE™ 1601, DOWCLENE™ 1611 and DOWCLENE™ 1621 are virgin, high performance modified alcohol solvents from Dow with excellent cleaning properties. They are suitable for difficult applications such as the cleaning of heat exchangers. DOWCLENE™ 1601 modified alcohol solvent is approved and used by well-known aerospace companies as well as certified by the Fraunhofer Institute to be biocompatible according to DIN ISO 10993-5, 2009 for medical cleaning applications.

DOWCLENE™ 16 Series Performance Spectrum

Modified alcohol solvents from the DOWCLENE™16 Series have non-polar and polar properties. They are suitable for cleaning a variety of contaminations. The figure below shows the principle "Equal Solves Equal" and the performance spectrum of solvents from the DOWCLENE™ 16 Series.

High Performance Solvents from the DOWCLENE™ 16 Series

DOWCLENE™ 1601, DOWCLENE™ 1611 and DOWCLENE™ 1621 have different chemical and physical properties thus satisfying individual requirements. All grades have a low toxicity and are chemically very stable. Depending on the customer’s application, SAFECHEM specialists can recommend the most suitable solvent for maximum performance.

<table>
<thead>
<tr>
<th>Typical physical parameter</th>
<th>DOWCLENE™ 1601</th>
<th>DOWCLENE™ 1611</th>
<th>DOWCLENE™ 1621</th>
</tr>
</thead>
<tbody>
<tr>
<td>Density (g/cm³) (20°C)</td>
<td>0.88</td>
<td>0.94</td>
<td>0.78</td>
</tr>
<tr>
<td>Boiling range, °C</td>
<td>170 – 175</td>
<td>170 – 193</td>
<td>175 – 200</td>
</tr>
<tr>
<td>Water solubility mixable, water%</td>
<td>6.3</td>
<td>— mixable</td>
<td>5</td>
</tr>
<tr>
<td>Flash point (°C)</td>
<td>63</td>
<td>79</td>
<td>59</td>
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</table>

Process Optimisation and -Security

SAFECHEM offers a wide range of additional services which help to optimise the cleaning process, to increase process security and maximise cleaning results.

- Delivery of fresh solvent, also in the SAFE-TAINER™ System and in different package sizes
- Take-back of used solvent in the SAFE-TAINER™ System
- Delivery of fresh solvent, also in the SAFE-TAINER™ System
- MAXICHECK™ Test Kits
- MAXIBOOST™ Solvent Additives
- Solvent Training
- Specialist know-how
- Consulting
- Oil Compatibilty Test
- Solvent Analysis
- Special Analyses on request

* Trade name of The Dow Chemical Company (“Dow”) or an affiliated company of Dow ® Registered Service Mark of the American Chemistry Council

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<tr>
<td>Hydrocarbons</td>
<td>Water</td>
</tr>
<tr>
<td>Chlorinated solvents</td>
<td>Emulsions</td>
</tr>
<tr>
<td>DOWCLENE™ 1601</td>
<td>Emulsion residues</td>
</tr>
<tr>
<td>DOWCLENE™ 1611</td>
<td>EP additives</td>
</tr>
<tr>
<td>DOWCLENE™ 1621</td>
<td>Alk additives</td>
</tr>
<tr>
<td>(combined solvent / water process)</td>
<td>Surfactants</td>
</tr>
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- Oil
- Waxes
- Petroleum
- Fats
- Grease
- Corrosion protection inhibitor
- Ester
- Tensides

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Why Should You Use
DOWCLENE™ 16 Modified Alcohol Solvents?

- DOWCLENE™ 1601, DOWCLENE™ 1611 and DOWCLENE™ 1621 are virgin, high-performance grades from The Dow Chemical Company

- DOWCLENE™ 1601 has a wide range of approvals in the aerospace industry

- DOWCLENE™ 1601 is certified for being biocompatible according to DIN ISO 10993-5, 2009¹, thus being a suitable solvent for the use in medical cleaning applications

- Consultancy and services including support in deciding for a cleaning machine help to optimise the cleaning process

- Dow and SAFECHEM have long-time experience with modified alcohols in precision parts cleaning

- Continuous research and development keep products and services state-of-the-art

¹ The extract of the metal plates of titanium alloy, Grade 5 Ti-6Al-4V, cleaned with the solvent DOWCLENE™ 1601 was tested non cytotoxic by the Fraunhofer-Institut für Grenzflächen- und Bioverfahrenstechnik in February 2014.

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