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# Engineering Checklist for Use When Selecting a Solvent for a Vapor Degreaser

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Here is a handy worksheet which can help engineers with their solvent selection process by ensuring that no major questions or issues remain unexplored during the selection and testing. While designed for use when selecting a solvent for a vapor-phase cleaning system, the questions also are very useful when selecting a benchtop cleaner as well.

Criteria	Discussion	Rating of Proposed Solvent
<p><b>Cleaning Effectiveness</b></p>	<p>The solvent must be able to remove all of the major types of polar and non-polar contamination commonly found on the parts being cleaned. The key word here is "common" -- a solvent which removes 90% of the different types of contamination, while not perfect, is probably an excellent candidate.</p>	
<p><b>Superior Materials Compatibility</b></p>	<p>Check plastics, gaskets and metals. Look for crazing, softening or swelling. Do not over-test with excessive exposures or prolonged immersion if those conditions are unlikely to occur in normal use.</p>	

<p><b>Aroma</b></p>	<p>This is a crucial factor, and an engineer's opinion about an aroma is far less useful than the opinion of the technicians and operators. Have them work with the materials for an hour or two, and get their opinions early in the testing cycle.</p>	
<p><b>Low Boiling Temperature and Fast Evaporation</b></p>	<p>One of the best characteristics of vapor cleaning is that the parts come out dry. Shorter cycle times are better.</p>	
<p><b>Cost, on a Per-Part-Cleaned Basis</b></p>	<p>Compare the solvents on the basis of the total cleaning costs, including capital expense, waste disposal, cycle times, solvent effectiveness on a wide variety of contamination, drag-out losses, training time, and so on. The worst way to buy a solvent is simply by comparing the price per drum.</p>	
<p><b>Decomposition Hazards</b></p>	<p>Consider the risks involved in a building fire or if safety systems should fail. Some solvents decompose in extraordinarily toxic materials where even a whiff can be fatal. Plan for the worst when making a solvent choice.</p>	
<p><b>Toxicity and</b></p>	<p>Like bowling, higher is better.; usually expressed as a "TLV" or "AEL" in parts per million. Most</p>	

<b>Worker Exposure Ratings</b>	companies worry about anything with a toxicity rating of less than 100 ppm; a perfect score is 1,000 ppm.	
<b>Flammability</b>	Only nonflammable solvents can be used in most vapor degreasers, but even some nonflammable solvents will burn under extreme conditions. Consider not just usage but storage and handling. Will the solvent be used on the benchtop?	
<b>Stabilizers</b>	Many cleaners will turn acidic if the cleaning system is not properly maintained; good stabilizer packages will delay that problem and reduce solvent waste.	
<b>Waste Disposal</b>	The disposal of nonflammable solvents can be expensive, so look for choices which can be easily recycled	

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#### About the Authors:

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Since MicroCare packages the electronics industry's broadest line of solvent alternatives, it is one of the few sources of unbiased, hands-on experience with all of cleaning chemistries ranging from old-style CFCs through to the newest formulations included in this report.

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### Related Information:

- For additional information about the ozone-safe DuPont HFC solvents, check out the [Vertrel® solvents web site](#).
- For other information about the Bromothane™ brand of nPB solvents, check out the [Bromothane™ web site](#).
- For additional help, use the [Solvent Selection Guide](#) in this Site to help determine the optimal recommendation.
- A simplified PDF version of the same [Selection Guide](#) also is available.

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