

Choosing the Safest Cleaner

When comparing the many parts cleaners available, aqueous cleaners come out on top for worker and environmental safety, and mitigating business risk.

By understanding the three basic categories of cleaners shown here, businesses will be better prepared to speak with their cleaning suppliers and other experts for recommendations.

<p>SAFEST LONG-TERM CHOICE</p> <p>AQUEOUS CLEANERS:</p> <p>Acidic</p> <p>Alkaline</p> <p>Neutral</p> <p>Caustic</p> <p>Enzymatic-Microbial</p> <p>Powdered Detergent</p>	<p>PROS</p> <ul style="list-style-type: none">• Inexpensive• Less toxic to workers and the environment• Effective options for most parts cleaning• Can include rust/oxidation inhibitors if needed• Minimal regulatory requirements• Decrease or eliminate disposal costs• Closed-loop systems allow for reuse• Initial investments are often recouped through operational cost savings	<p>CONS</p> <ul style="list-style-type: none">• Up-front testing required to identify the best cleaner option• Initial investment may be required
<p>VARIABLE RISK</p> <p>NON-HALOGENATED ORGANIC SOLVENTS</p>	<p>CONSIDERATIONS FOR THIS EXTREMELY BROAD CATEGORY</p> <ul style="list-style-type: none">• Many options from which to choose• Wide range of hazards and risks depending on the specific solvent• An independent assessment will identify the safest, effective options• Watch out for “regrettable substitutions”—products as bad or worse than those being replaced	
<p>HIGHEST RISK <i>(Use only as a last resort)</i></p> <p>HALOGENATED CLEANERS:</p> <p>Trichloroethylene (TCE)</p> <p>n-Propyl Bromide (nPB) <i>(also known as 1-Bromopropane)</i></p> <p>trans-1,2-Dichloroethylene (tDCE)</p> <p>HydroFluoroEther (HFE) <i>(also a tDCE co-solvent)</i></p> <p>HydroFluoroOlefin (HFO) <i>(also a tDCE co-solvent)</i></p>	<p>PROS</p> <ul style="list-style-type: none">• Effective cleaners for a wide-range of applications• Instantaneous, residue-free drying• Compatible with vapor degreasers (drop-in substitute)	<p>CONS</p> <ul style="list-style-type: none">• Increased scrutiny and/or regulation for human health risks• Environmental hazards• Regulatory and liability burdens• Potentially reduced availability of fluorinated solvents• TCE is banned in MN for businesses with an air permit• Considered “regrettable substitutions”

For more information, read our e-guide *Mitigating the Business Risks of Hazardous Cleaners* at MnTAP.umn.edu/AqueousToolkit.