

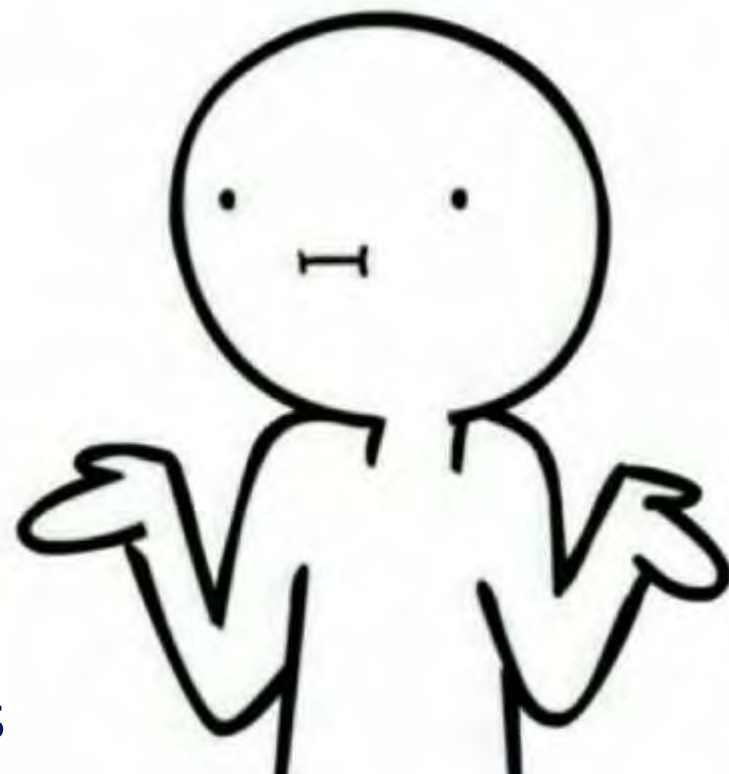


Performance Evaluation: Cleaner Solutions Database

Alicia McCarthy
Toxics Use Reduction Institute
University of Massachusetts Lowell

We Need to Switch to a Safer Cleaner... But Where Do We Even Start Looking?

- Cleaner Solutions Database
 - 3rd Party Tested Products
 - Vendor and Product Information
 - Evaluates:
 - Cleaning Methods
 - Compatible Substrates
 - Variety of Contaminants




CleanerSolutions.org

← → ↻ ⓘ Not secure | cleanersolutions.org

CleanerSolutions Database

Toxics Use Reduction Institute · Surface Solutions Laboratory



Laboratory Clients and Test Results

- Find a Cleaner
- Replace a Solvent
- Safety Screening Search
- Part Description Search
- Browse Clients and Trials

Vendor Supplied Information


- Vendor Search
- Browse Vendors and Products

Forms

- Vendor Forms
- Client Forms

CleanerSolutions Home

- About CleanerSolutions
- Database Demos
- Help Topics
- TURI Laboratory Home
- Contact the Lab



Simple Solutions for Surface Cleaning

[More about CleanerSolutions](#)

Ask your cleaning questions today!

TURI Laboratory Client and Test Results

Results are linked to testing information to help you select an alternative that matches your needs. Search information generated from TURI Lab testing.

Find a Cleaner	Identify alternatives that have cleaned your contaminant.
Replace a Solvent	Find alternatives to your current solvent cleaner.
Safety Screening Search	Find products based on safety and environmental criteria.
Browse Clients and Trials	Look through past lab clients by industry.
Part Description Search	Investigate cleaning trials based on part shape, size, complexity

Green Cleaning Lab

Toxics Use Reduction Institute Cleaning Lab offers housekeepers and janitorial service providers the knowledge and expertise it has gained from two decades of testing the performance of green cleaning products.

[Green Cleaning Lab home](#)

Explore: [DIY Cleaner Recipes](#) | [Retail Product Testing](#) | [Professional Product Testing](#)

The Lab vigorously takes testing to a higher level through application of realistic soils or contaminants on surface materials likely to be found in actual homes or facilities (e.g., white boards, stain) users with practical test outcomes they can use to improve their specific cleaning situation. Tests can also be customized to focus on surfaces and soils most likely to be encountered in specific environments. Results from these projects will be available in a different searching interface.

Forms

Client Test Request Form	Forms to arrange testing for your company. Or complete an online version.
Vendor Forms	Forms for vendors to complete.

For TURI Lab updates, check out our blog...CleanBreak

Follow us on Twitter and Facebook

What we do, how we do it...

Searching for A Cleaner

- Find A Cleaner

Contaminant	Substrate	Equipment
Any	Any	Any
Abrasive	Alloys	High Pressure Spray
Abrasives	Alumina	Immersion/Soak
Adhesive	Aluminum	Low Pressure Spray
Alcohol	Brass	Manual Wipe
Buffing/Polishing	Carbon Fiber	Mechanical Agitation
Calcium/lime	Carbon Steel	Media Blasting
Carbon Deposits	Ceramics	Plasma
Clay	Chrome	Steam
Coatings	Cold Rolled Steel	Supercritical Extraction
Cutting/Tapping I	Copper	Ultrasonics
Dirt	Electronics	Vapor Degreasing


- Replace A Solvent

Solvent	Contaminant	Substrate	Equipment
#320 cleaner	Any	Any	Any
Abrasive Disc	Abrasive	Alloys	High Pressure Spray
Abrasive slurry	Abrasives	Alumina	Immersion/Soak
acetates	Adhesive	Aluminum	Low Pressure Spray
Acetic acid	Alcohol	Brass	Manual Wipe
Acetone	Buffing/Polishing	Carbon Fiber	Mechanical Agitation
Acetone mix	Calcium/lime	Carbon Steel	Media Blasting
acid etch	Carbon Deposits	Ceramics	Plasma
Acids	Clay	Chrome	Steam
Acids - Sulfuric	Coatings	Cold Rolled	Supercritical Extraction
ADF Powdered conc	Cutting/Tapping I	Copper	Ultrasonics
Albatross USA SPIF	Dirt	Electronics	Vapor Degreasing

Cleaner Solutions Database

← ↻ ⓘ Not secure www.cleansolutions.org/?action=contaminant_search ☆ 🔍 🔥 🔴 ⋮

Toxics Use Reduction Institute · Surface Solutions Laboratory



TURI
TOXICS USE REDUCTION INSTITUTE
UMASS LOWELL

Laboratory Clients and Test

- Find a Cleaner
- Replace a Solvent
- Safety Screening Search
- Part Description Search
- Browse Clients and Trials

Vendor Supplied Information


- Vendor Search
- Browse Vendors and Products

Forms

- Vendor Forms
- Client Forms

CleanerSolutions Home

- About CleanerSolutions
- Database Demos
- Help Topics
- TURI Laboratory Home
- Contact the Lab



TURI
TOXICS USE REDUCTION INSTITUTE
UMASS LOWELL
Cleaning Laboratory

Find a Cleaner

Search for a cleaner that has successfully removed a contaminant similar to your own. Chances are that the alternative will also work for you. Optionally, you can add substrate and equipment criteria to help narrow your search.

Required Field	Optional Fields	
You must select one or more contaminants.	Filter your search by substrate or equipment type, or leave these fields set to <i>Any</i> to include all results for a given contaminant.	
<p>Contaminant</p> <ul style="list-style-type: none">PlasticResins/RosinsRubberRust/ScaleSaltsSoapssolderSolventStarchStickiesUnknownWaxes	<p>Substrate</p> <ul style="list-style-type: none">AnyAlloysAluminaAluminumBrassCarbon FiberCarbon SteelCeramicsChromeCold Rolled SteelCopperElectronics	<p>Equipment</p> <ul style="list-style-type: none">AnyHigh Pressure SprayImmersion/SoakLow Pressure SprayManual WipeMechanical AgitationMedia BlastingPlasmaSteamSupercritical ExtractionUltrasonicsVapor Degreasing

All Fields Hold down the *shift* or *ctrl* keys to select multiple values.

Optional Search Filters

Product Cleaning Type: Any ▾

Return only effective results: ☒

Reset Submit

CleanerSolutions.org

← → ↺ ① Not secure | www.cleansolutions.org/?action=contaminant_search&contaminant%5B%5D=Resins%2FRosins&substrate%5B%5D=Aluminum&equipment%5...

CleanerSolutions Database

Toxics Use Reduction Institute · Surface Solutions Laboratory



Laboratory Clients and Test

- Find a Cleaner
- Replace a Solvent
- Safety Screening Search
- Part Description Search
- Browse Clients and Trials

Vendor Supplied Information

- Vendor Search
- Browse Vendors and Products

Forms

- Vendor Forms
- Client Forms

CleanerSolutions Home

- About CleanerSolutions
- Database Demos
- Help Topics
- TURI Laboratory Home
- Contact the Lab



Find a Cleaner Search Results | [Search Again](#)

Current Search Information

Search Criteria

Contaminant: Resins/Rosins
Substrate: Aluminum

Results

Found 109 records
Showing records 1 - 50

Help

[Search Results Field Definitions](#)
[Contact the lab](#)

<< <

Showing records 1 - 50 of 109 | [Field Definitions](#)

> >>

Company Name Product Name	Safety Score	Classification	Contaminant	Substrate	Equipment	Client #			Effective
						Project #			
						Trial #			
Gemtek Products EZ Solv [compare]	39	Biobased	Resins/Rosins	Aluminum	Immersion/Soak	304	1	8	Y
Gemtek Products Maxi Solv [compare]	37	Biobased	Resins/Rosins	Aluminum	Immersion/Soak	304	1	8	Y
Spartan Chemical Company Graffiti Remover SAC [compare]	39	Biobased	Resins/Rosins	Aluminum	Immersion/Soak	304	1	8	Y
Spartan Chemical Company Green Solutions Floor Stripper [compare]	41	Alkaline Aqueous	Resins/Rosins	Aluminum	Immersion/Soak	304	1	8	Y
Bio Chem Systems Bio T Max [compare]	37	Terpene-Semi-Aqueous	Resins/Rosins	Aluminum	Immersion/Soak	304	1	8	Y
United Laboratories International Smart Solve 605 [compare]	48	Biobased	Resins/Rosins	Aluminum	Immersion/Soak	304	1	8	Y
Gemtek Products EZ Solv [compare]	39	Biobased	Resins/Rosins	Aluminum	Immersion/Soak	304	1	7	Y

Let's Compare



Laboratory Clients and Test

- Find a Cleaner
- Replace a Solvent
- Safety Screening Search
- Part Description Search
- Browse Clients and Trials

Vendor Supplied Information

- Vendor Search
- Browse Vendors and Products

Forms

- Vendor Forms
- Client Forms

CleanerSolutions Home

- About CleanerSolutions
- Database Demos
- Help Topics
- TURI Laboratory Home
- Contact the Lab



Find a Cleaner Search Results | [Search Again](#)

Current Search Information

Search Criteria

Contaminant: Resins/Rosins
Substrate: Aluminum
 Effective trials only

Results

Found 57 records
 Showing records 1 - 50

Help

[Search Results](#) [Field Definitions](#)
[Contact the lab](#)

<< <

Showing records 1 - 50 of 57

| [Field Definitions](#)

> >>

Company Name Product Name	Safety Score	Classification	Contaminant	Substrate	Equipment	Client #			Effective
						Project #			
						Trial #			
Gemtek Products SC Aircraft & Metal Cleaner [compare]	49	Alkaline Aqueous	Resins/Rosins	Aluminum	Manual Wipe	243	1	0	
United Laboratories International Smart Solve 605 [compare]	48	Biobased	Resins/Rosins	Aluminum	Immersion/Soak	304	1	8	
United Laboratories International Smart Solve 605 [compare]	48	Biobased	Resins/Rosins	Aluminum	Immersion/Soak	304	1	7	
United Laboratories International Smart Solve 605 [compare]	48	Biobased	Resins/Rosins	Aluminum	Immersion/Soak	304	1	5	
United Laboratories International	48	Biobased	Resins/Rosins	Aluminum	Immersion/Soak	304	1	4	

Compare Products Side By Side

Vendor Provided Information		
Product information cited in this section is supplied directly by the vendors. The Institute has not verified the accuracy of any of this information and is not liable for any claims made by the vendors. TURI is likewise not responsible for any typographical errors.		
Micro 90 [x]	Smart Solve 605 [x]	SC Aircraft & Metal Cleaner [x]
Vendor Name: International Products Corporation Classification: Alkaline Aqueous Recommended Contaminants: Adhesive, Buffing/Polishing Compounds, Carbon Deposits, Cutting/Tapping Fluids, Greases, Inks, Lubricating/Lapping Oils, Oil, Waxes Recommended Equipment: Immersion/Soak, Manual Wipe, Ultrasonics Recommended Substrates: Alloys, Brass, Carbon Steel, Ceramics, Copper, Galvanized Steel, Glass/Quartz, Gold, Nickel, Plastic, Stainless Steel, Steel, Sterling/Silver, Tin MSDS / TDS: MICRO 90 SDS, MICRO 90, elastomer compatibility, apr 8, 2015, MICRO 90, metal compatibility, apr 9, 2015, MICRO 90, plastic compatibility, apr 8, 2015, Micro 90 TURI TDS	Vendor Name: United Laboratories International Classification: Biobased Recommended Contaminants: Adhesive, Carbon Deposits, Coatings, Cutting/Tapping Fluids, Fluxes, Greases, Inks, Lubricating/Lapping Oils, Oil, Paints, Resins/Rosins, Waxes Recommended Equipment: Cold Solvent, Immersion/Soak, Manual Wipe, Mechanical Agitation Recommended Substrates: Alloys, Aluminum, Brass, Copper, Galvanized Steel, Nickel, Stainless Steel, Steel MSDS / TDS: Smart Solve 605 MSDS, Smart Solve 605 TDS	Vendor Name: Gemtek Products Classification: Alkaline Aqueous Recommended Contaminants: Buffing/Polishing Compounds, Carbon Deposits, Cutting/Tapping Fluids, Greases, Lubricating/Lapping Oils, Oil, Waxes Recommended Equipment: Cold Solvent, High Pressure Spray, Immersion/Soak, Low Pressure Spray, Manual Wipe, Mechanical Agitation, Ultrasonics, Vapor Degreasing Recommended Substrates: Alloys, Aluminum, Brass, Carbon Steel, Ceramics, Copper, Galvanized Steel, Glass/Quartz, Gold, Nickel, Plastic, Rubber, Stainless Steel, Steel, Sterling/Silver, Tin MSDS / TDS: SC Aircraft & Metal Cleaner TURI TDS, SC Aircraft MSDS, SC Aircraft TDS-SCAQMD 2012, SC Aircraft TDS-Test List, SC Aircraft TDS

Safety Screening Information																																																																																															
Micro 90 [x]	Smart Solve 605 [x]	SC Aircraft & Metal Cleaner [x]																																																																																													
Safety Score Help	Safety Score Help	Safety Score Help																																																																																													
<table> <tr> <th>Indicator</th><th>Value</th><th>Points</th></tr> <tr> <td>VOC:</td><td>0</td><td>10</td></tr> <tr> <td>GWP:</td><td>0</td><td>10</td></tr> <tr> <td>ODP:</td><td>0</td><td>10</td></tr> <tr> <td>HMIS</td><td>2</td><td></td></tr> <tr> <td>H:</td><td></td><td></td></tr> <tr> <td>HMIS F:</td><td>0</td><td>8</td></tr> <tr> <td>HMIS</td><td>0</td><td></td></tr> <tr> <td>R:</td><td></td><td></td></tr> <tr> <td>pH:</td><td>9.7</td><td>8</td></tr> <tr> <td>Total:</td><td>46</td><td></td></tr> </table>	Indicator	Value	Points	VOC:	0	10	GWP:	0	10	ODP:	0	10	HMIS	2		H:			HMIS F:	0	8	HMIS	0		R:			pH:	9.7	8	Total:	46		<table> <tr> <th>Indicator</th><th>Value</th><th>Points</th></tr> <tr> <td>VOC:</td><td>0</td><td>10</td></tr> <tr> <td>GWP:</td><td>0</td><td>10</td></tr> <tr> <td>ODP:</td><td>0</td><td>10</td></tr> <tr> <td>NFPA H:</td><td>1</td><td></td></tr> <tr> <td>NFPA F:</td><td>1</td><td>8</td></tr> <tr> <td>NFPA R:</td><td>0</td><td></td></tr> <tr> <td>pH:</td><td>NA</td><td>10</td></tr> <tr> <td>Total:</td><td>48</td><td></td></tr> </table>	Indicator	Value	Points	VOC:	0	10	GWP:	0	10	ODP:	0	10	NFPA H:	1		NFPA F:	1	8	NFPA R:	0		pH:	NA	10	Total:	48		<table> <tr> <th>Indicator</th><th>Value</th><th>Points</th></tr> <tr> <td>VOC:</td><td>0</td><td>10</td></tr> <tr> <td>GWP:</td><td>0</td><td>10</td></tr> <tr> <td>ODP:</td><td>0</td><td>10</td></tr> <tr> <td>HMIS</td><td>0</td><td></td></tr> <tr> <td>H:</td><td></td><td></td></tr> <tr> <td>HMIS F:</td><td>0</td><td>10</td></tr> <tr> <td>HMIS</td><td>0</td><td></td></tr> <tr> <td>R:</td><td></td><td></td></tr> <tr> <td>pH:</td><td>8.4</td><td>9</td></tr> <tr> <td>Total:</td><td>49</td><td></td></tr> </table>	Indicator	Value	Points	VOC:	0	10	GWP:	0	10	ODP:	0	10	HMIS	0		H:			HMIS F:	0	10	HMIS	0		R:			pH:	8.4	9	Total:	49	
Indicator	Value	Points																																																																																													
VOC:	0	10																																																																																													
GWP:	0	10																																																																																													
ODP:	0	10																																																																																													
HMIS	2																																																																																														
H:																																																																																															
HMIS F:	0	8																																																																																													
HMIS	0																																																																																														
R:																																																																																															
pH:	9.7	8																																																																																													
Total:	46																																																																																														
Indicator	Value	Points																																																																																													
VOC:	0	10																																																																																													
GWP:	0	10																																																																																													
ODP:	0	10																																																																																													
NFPA H:	1																																																																																														
NFPA F:	1	8																																																																																													
NFPA R:	0																																																																																														
pH:	NA	10																																																																																													
Total:	48																																																																																														
Indicator	Value	Points																																																																																													
VOC:	0	10																																																																																													
GWP:	0	10																																																																																													
ODP:	0	10																																																																																													
HMIS	0																																																																																														
H:																																																																																															
HMIS F:	0	10																																																																																													
HMIS	0																																																																																														
R:																																																																																															
pH:	8.4	9																																																																																													
Total:	49																																																																																														

Lab Evaluation Summary		
Micro 90 [x]	Smart Solve 605 [x]	SC Aircraft & Metal Cleaner [x]
Number of Trials: 258 136 effective/122 ineffective Tested Contaminants: Coatings, Buffing/Polishing Compounds, Oil, Alcohol, Greases, Pitch, Phthalates, Inks, Lubricating/Lapping Oils, Adhesive, Waxes, Carbon Deposits, Hucker's Soil, Abrasive, Cutting/Tapping Fluids, Fluxes, Starch, Resins/Rosins, Graphite, Paints, Metal fines Tested Substrates: Aluminum, Brass, Steel, Ceramics, Alumina, Stainless Steel, Glass/Quartz, Copper, Nickel, Plastic, Alloys, Titanium, Carbon Fiber, Liquid Tested Equipment: Immersion/Soak, Ultrasonics, Mechanical Agitation, Manual Wipe	Number of Trials: 58 33 effective/25 ineffective Tested Contaminants: Coatings, Cutting/Tapping Fluids, Oil, Inks, Adhesive, Lubricating/Lapping Oils, Resins/Rosins, Carbon Deposits, Greases Tested Substrates: Steel, Aluminum, Galvanized Steel, Glass/Quartz, Ceramics Tested Equipment: Immersion/Soak, Ultrasonics, Manual Wipe	Number of Trials: 206 142 effective/64 ineffective Tested Contaminants: Waxes, Oil, Lubricating/Lapping Oils, Dirt, Cutting/Tapping Fluids, Coatings, Greases, Fluxes, Alcohol, Carbon Deposits, Inks, Hucker's Soil, Paints, Buffing/Polishing Compounds, Mold Releases, Resins/Rosins, Starch, Graphite, Salts Tested Substrates: Aluminum, Steel, Stainless Steel, Brass, Alumina, Ceramics, Alloys, Plastic, Copper, Nickel, Titanium, Carbon Fiber, Fiberglass, Liquid, Glass/Quartz Tested Equipment: Immersion/Soak, Manual Wipe, Ultrasonics, Mechanical Agitation

Reviewing The Results



Laboratory Clients and Test

- Find a Cleaner
- Replace a Solvent
- Safety Screening Search
- Part Description Search
- Browse Clients and Trials

Vendor Supplied Information

- Vendor Search
- Browse Vendors and Products

Forms

- Vendor Forms
- Client Forms

CleanerSolutions Home

- About CleanerSolutions
- Database Demos
- Help Topics
- TURI Laboratory Home
- Contact the Lab



Find a Cleaner Search Results | [Search Again](#)

Current Search Information

Search Criteria

Contaminant: Resins/Rosins
Substrate: Aluminum
 Effective trials only

Results

Found 57 records
 Showing records 1 - 50

Help

[Search Results](#) [Field Definitions](#)
[Contact the lab](#)

<< <

Showing records 1 - 50 of 57

| [Field Definitions](#)

> >>

Company Name Product Name	Safety Score	Classification	Contaminant	Substrate	Equipment	Client #			Effective
						Project #			
						Trial #			
Gemtek Products SC Aircraft & Metal Cleaner [compare]	49	Alkaline Aqueous	Resins/Rosins	Aluminum	Manual Wipe	243	1	0	Y
United Laboratories International Smart Solve 605 [compare]	48	Biobased	Resins/Rosins	Aluminum	Immersion/Soak	304	1	8	Y
United Laboratories International Smart Solve 605 [compare]	48	Biobased	Resins/Rosins	Aluminum	Immersion/Soak	304	1	7	Y
United Laboratories International Smart Solve 605 [compare]	48	Biobased	Resins/Rosins	Aluminum	Immersion/Soak	304	1	5	Y
United Laboratories International	48	Biobased	Resins/Rosins	Aluminum	Immersion/Soak	304	1	1	Y

Product Overview

Product Information

SC Aircraft & Metal Cleaner

[Add to Comparison List](#)

Vendor Provided Information

Product information cited in this section is supplied directly by the vendors. The Institute has not verified the accuracy of any of this information and is not liable for any claims made by the vendors. TURI is likewise not responsible for any typographical errors.

Vendor Name: [Gemtek Products](#)

Product Classification: Alkaline Aqueous

Recommended Contaminants: Buffing/Polishing Compounds, Carbon Deposits, Cutting/Tapping Fluids, Greases, Lubricating/Lapping Oils, Oil, Waxes

Recommended Equipment: Cold Solvent, High Pressure Spray, Immersion/Soak, Low Pressure Spray, Manual Wipe, Mechanical Agitation, Ultrasonics, Vapor Degreasing

Recommended Substrates: Alloys, Aluminum, Brass, Carbon Steel, Ceramics, Copper, Galvanized Steel, Glass/Quartz, Gold, Nickel, Plastic, Rubber, Stainless Steel, Steel, Sterling/Silver, Tin

MSDS / TDS: [SC Aircraft & Metal Cleaner TURI TDS](#), [SC Aircraft MSDS](#), [SC Aircraft TDS-SCAQMD 2012](#), [SC Aircraft TDS-Test List](#), [SC Aircraft TDS](#)

Safety Screen | [Help](#)

Indicator	Value	Points
VOC:	0	10
GWP:	0	10
ODP:	0	10
HMIS		
H:	0	
HMIS F:	0	10
HMIS	0	
R:		
pH:	8.4	9
Total: 49/50 (higher is better)		

Product Overview Continued

Laboratory Evaluation of SC Aircraft & Metal Cleaner | Field Definitions

Client #	Project #	Trial #	Contaminant	Substrate	Equipment	Effective
7	2	0	Waxes	Aluminum	Immersion/Soak	N
27	2	0	Waxes	Aluminum	Manual Wipe	Y
27	2	1	Waxes	Aluminum	Manual Wipe	N
27	2	2	Oil	Aluminum	Manual Wipe	Y
27	2	3	Oil	Aluminum	Manual Wipe	Y
27	2	4	Oil	Aluminum	Manual Wipe	Y
27	2	5	Oil	Aluminum	Manual Wipe	Y
27	2	6	Oil	Aluminum	Manual Wipe	Y
27	2	7	Oil	Aluminum	Manual Wipe	Y
27	2	8	Lubricating/Lapping Oils	Aluminum	Manual Wipe	Y
27	2	9	Oil	Steel	Manual Wipe	Y
27	2	9	Oil	Aluminum	Manual Wipe	Y
27	2	9	Oil	Steel	Manual Wipe	Y
27	2	9	Waxes	Steel	Manual Wipe	Y

Vendor Information

Vendor Information

Gemtek Products

Address

3808 N. 28th Avenue
Phoenix, Az 85017

Phone

Toll Free: 800 331 7022
Local: 602 265 8586
Fax: 602 265 7241

Internet

Website: www.gemtek.com


Products | [Field Definitions](#)

Product Name	Classification	Safety Score
SC 1000	Alkaline Aqueous	47
SC Supersolve	Biobased	47
SC Aircraft & Metal Cleaner	Alkaline Aqueous	49
ODOR-EX	Alkaline Aqueous	48
EZ Solv	Biobased	39
Maxi Solv	Biobased	37
SC Actisolv	Biobased	38
SC Toilet Bowl Cleaner	Biobased	47
SC Oven & Grill Cleaner	Biobased	47
SC More Than Glass Cleaner	Biobased	49
SC 2000 All Purpose	Biobased	47

Search Products by Safety Screening

CleanerSolutions Database

Toxics Use Reduction Institute • Surface Solutions Laboratory



Laboratory Clients and Test

- Find a Cleaner
- Replace a Solvent
- Safety Screening Search
- Part Description Search
- Browse Clients and Trials

Vendor Supplied Information

- Vendor Search
- Browse Vendors and Products

Forms

- Vendor Forms
- Client Forms

CleanerSolutions Home

- About CleanerSolutions
- Database Demos
- Help Topics
- TURI Laboratory Home
- Contact the Lab

Safety Screening Search

Search for cleaners matching minimum **safety** or **environmental** criteria.

VOC Content	Global Warming Potential	Ozone Depletion Potential	HMIS/NFPA Rating	pH Range
Maximum 0 grams/liter	GWP Any	ODP Any	Maximum H: Any	Minimum Any
			Maximum F: Any	Maximum Any
			Maximum R: Any	

Overall Safety Score Range


Minimum 40 Maximum 50

Reset Submit

Search by Parts Similar to Yours

CleanerSolutions Database

Toxics Use Reduction Institute • Surface Solutions Laboratory



Laboratory Clients and Test

- Find a Cleaner
- Replace a Solvent
- Safety Screening Search
- Part Description Search
- Browse Clients and Trials

Vendor Supplied Information

- Vendor Search
- Browse Vendors and Products

Forms

- Vendor Forms
- Client Forms

CleanerSolutions Home

- About CleanerSolutions
- Database Demos
- Help Topics
- TURI Laboratory Home
- Contact the Lab

Parts Search


Search for clients who have tested cleaners on similar parts to yours.

Part Description

What is the finished product used for:

Parts Properties

Surface Type:	Surface Geometry:	Surface Hardness:	Part Size:	Part Weight:
<input type="text" value="Rough"/>	<input type="text" value="Complex"/>	<input type="text" value="Hard"/>	<input type="text" value="Medium"/>	<input type="text" value="Any"/>
				<input type="button" value="Reset"/> <input type="button" value="Submit"/>



Vendor/Product/Equipment Forms

CleanerSolutions Database

Toxics Use Reduction Institute • Surface Solutions Laboratory



Laboratory Clients and Test

[Find a Cleaner](#)
[Replace a Solvent](#)
[Safety Screening Search](#)
[Part Description Search](#)
[Browse Clients and Trials](#)

Vendor Supplied Information

[Vendor Search](#)
[Browse Vendors and Products](#)

Forms

[Vendor Forms](#)
[Client Forms](#)

CleanerSolutions Home

[About CleanerSolutions](#)
[Database Demos](#)
[Help Topics](#)
[TURI Laboratory Home](#)
[Contact the Lab](#)

TURI

Vendor/Product Submission Forms

There are three forms that can be filled out.

- The first is your contact information. You only need to fill this out once.
- The second is for the cleaning product(s) you would like to submit for inclusion in the lab's database. Fill out one form for each product you would like to submit.
- The third is for cleaning related equipment.

For your convenience, both pdf and word versions are included for downloading.


PDF Forms	Word Forms
Vendor Contact Form	Vendor Contact Form
Product Form	Product Form
Equipment Form	Equipment Form

Before products can be entered, the lab will also need to receive and approve Material Safety Data Sheets and Technical Data Sheets. Upon approval, sample delivery to the lab of cleaning chemicals will be arranged.

Request Testing of Products

CleanerSolutions Database

Toxics Use Reduction Institute • Surface Solutions Laboratory



Laboratory Clients and Test

- Find a Cleaner
- Replace a Solvent
- Safety Screening Search
- Part Description Search
- Browse Clients and Trials

Vendor Supplied Information

- Vendor Search
- Browse Vendors and Products

Forms

- Vendor Forms
- Client Forms

CleanerSolutions Home

- About CleanerSolutions
- Database Demos
- Help Topics
- TURI Laboratory Home
- Contact the Lab

Client Forms

The test request form describes the cleaning process that you are using. With this information the TURI lab can better select possible cleaning products for your specific needs.

- [Test Request Form](#)

For companies outside of Massachusetts please contact the lab directly to determine pricing of testing: sclab@cleanersolutions.org

Activity 1: Replacing a Solvent

Step 1: Go to “Replace a Solvent”

Step 2: Enter in Search Criteria:

- **Solvent:** Trichloroethylene (TCE)
- **Contaminant:**
 - Cutting/Tapping Fluids
 - Greases
- **Substrate:** Aluminum
- **Equipment:** Any
- **Product Cleaning Type:** Parts Cleaning
- Click on *Return Only Effective Results*

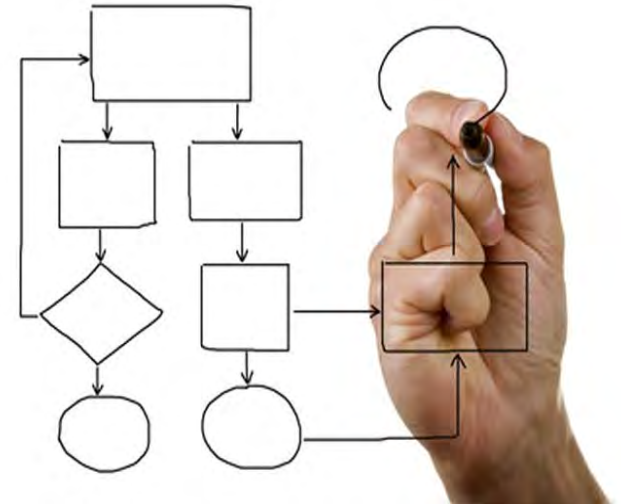
Step 3: Search and organize by a high Safety Score

Let's Pick Out Cleaners to Evaluate

Showing records 1 - 10 of 10 Field Definitions									
Company Name Product Name	Safety Score	Classification	Contaminant	Substrate	Equipment	Client #			Effective
						Project #			
						Trial #			
Gemtek Products SC Aircraft & Metal Cleaner [compare]	49	Alkaline Aqueous	Cutting/Tapping Fluids	Aluminum	Mechanical Agitation	299	1	8	Y
Gemtek Products SC Aircraft & Metal Cleaner [compare]	49	Alkaline Aqueous	Cutting/Tapping Fluids	Aluminum	Mechanical Agitation	299	1	7	Y
Oakite Products Inproclean 3800 [compare]	42	Alkaline Aqueous	Cutting/Tapping Fluids	Aluminum	Mechanical Agitation	299	1	7	Y
Brulin Corporation Aquavantage 1400 [compare]	46	Alkaline Aqueous	Cutting/Tapping Fluids	Aluminum	Mechanical Agitation	299	1	5	Y
Oakite Products Inproclean 3800 [compare]	42	Alkaline Aqueous	Cutting/Tapping Fluids	Aluminum	Mechanical Agitation	299	1	4	Y
Gemtek Products SC Aircraft & Metal Cleaner [compare]	49	Alkaline Aqueous	Cutting/Tapping Fluids	Aluminum	Mechanical Agitation	299	1	4	Y
Brulin Corporation Aquavantage 1400 [compare]	46	Alkaline Aqueous	Cutting/Tapping Fluids	Aluminum	Mechanical Agitation	299	1	4	Y
Bio Chem Systems Solsafe 245 [compare]	37	Petroleum Distillate	Cutting/Tapping Fluids	Aluminum	Immersion/Soak	299	1	2	Y
AG Environmental									

Information to Gather

- Safety Data Sheet (SDS)
- Technical Data Sheet (TDS)
- Current Engineering Controls, Personal Protective Equipment, and Management Controls
- Your Current Process & Equipment Specs.
 - Capabilities for other options (i.e. new equipment, space, cleaning time, waste stream)



Future Upgrades to Cleaner Solutions

- Overall Face-Lift
- Different shading for Unavailable Products/Vendors
- Search by only Available Vendors/Products option
- Add P2OASys Scores and Link

**But the question still stands...
Is it Safer?**

**Let's Take A Closer Look at the
Chemistry and Process**



Pollution Prevention Options Analysis System Hazard Discussion Tool (P2OASys)

Alicia McCarthy
Toxics Use Reduction Institute
University of Massachusetts Lowell

P2OASys Hazard Assessment Tool

- Allows user to assess potential impacts of alternative chemistries/technologies
 - Environmental
 - Worker
 - Public health
- Help users use a more comprehensive and systematic way of thinking about
 - Current and alternative processes
 - Based on quantitative and qualitative factors

Welcome to P2OASys

Get Started

What is P2OASys?

P2OASys allows companies to assess the potential environmental, worker, and public health impacts of alternative technologies aimed at reducing toxics use. The goal is more comprehensive and systematic thinking about the potential hazards posed by current and alternative processes identified during the TUR planning process. The tool can assist companies:

Systematically examine the potential environmental and worker impacts of options, examining the total impacts of process changes, rather than simply those of chemical changes

Compare options with current processes based on quantitative and qualitative factors.

Embedded formulae in P2OASys provide a numerical hazard score for the company's current process and identified options, which can then be combined with other information sources and professional expertise to make decisions on adoption of alternatives. Companies input both quantitative and qualitative data on the chemical toxicity, ecological effects, physical properties, and changes in work organization likely as a result of the proposed option.

Any question or comments can be directed at Jason Marshall by phone or by email.

Jason Marshall:
Tel: (978) 934-3133
Email: Jason@turi.org

This web site is maintained by the Toxics Use Reduction Institute at the University of Massachusetts, Lowell.

The Massachusetts Toxics Use Reduction Institute
University of Massachusetts Lowell
600 Suffolk Street

Lowell, Massachusetts 01854-2866
Tel: 978-934-3275 Fax: 978-934-3050



http://p2oasys.turi.org/

Welcome to the P2OASys Tool!

Information about P2OASys can be found on the TURI webpage [here](#).

New Assessment

Load From Database

Name	P2OASys Format	SDS Format	Remove
Sample Chemical	Enter Data	Enter Data	Remove

Score Summary

Compare Raw Data

Upload A Chemical/Product to the P2OASys Database

Export Data to CSV

Import Data from CSV

Hazard Score Matrix

Adding a New Assessment



Name:*	<input type="text" value="Enter Name Here"/>
Cas Number:	<input type="text" value="Ex: 7732-18-5"/>
SDS Source:	<input type="text" value="Ex: Sigma, Dupont..."/>
SDS Year:	<input type="text" value="Ex: 2018"/>

Is this a chemical or a product?

☐ Chemical ☒ Product

P2OASys Categories & Scores

Expand All

Collapse All

Hide

Categories

Trichloroethylene

Acute Human Effects

Inhalation Toxicity

Oral Toxicity

Dermal Toxicity

Respiratory Irritation

Dermal Irritation

Eye Irritation

Exposure Limits

IDLH

Health

8

8

Dermal Irritation

Units	Value	Score
Key Phrases	Evidence in humans or anim ▼	8
GHS Category Level	1C, 2 ▼	6
GHS H Phrases	H315 ▼	8

Eye Irritation

Exposure Limits

IDLH

Health

Recalculate weights

Reset

Loading from Database

Welcome to the P2OASys Tool!

Information about P2OASys can be found on the TURI webpage [here](http://p2oasys.turi.org/).

New Assessment

Load From Database

Name	P2OASys Format	SDS Format	Remove
Sample Chemical	Enter Data	Enter Data	Remove

Score Summary

Compare Raw Data


Upload A Chemical/Product to the P2OASys Database

Export Data to CSV

Import Data from CSV

Hazard Score Matrix

Looking for Chemicals/Products

P2OASys Tool [Home](#) [Help](#) [About](#) [Contact Us](#)

[Back](#)

Search P2OASys database for chemicals or products by name, CAS number, date created, or score.

Search Specifications: Contains

Index:

Name:

Cas Number:

Created in the past:

Score that is: value:

[Search Database](#)

Displaying entire Database

[Add Chemicals To Session](#)

Filter Results:

Add	Index	Name	CAS	Score	Entries	Date Created	Reviewed	SDS Source	SDS Year
<input type="checkbox"/>	711	Dow OS 10		6.4	56	2019-01-28	Yes	Dow Corning	2016
<input type="checkbox"/>	710	Safe Strip 5896		5.8	49	2019-01-28	Yes	Brunin Corp	2012
<input type="checkbox"/>	695	Lenium GS		8.1	46	2019-01-24	Yes	Petroferm Inc	2004
<input type="checkbox"/>	694	Ensolv		9.4	84	2018-01-29	Yes	Enviro Tech International	2005
<input type="checkbox"/>	693	Lenium ES		8.1	46	2019-01-24	Yes	Petroferm Inc	2004
<input type="checkbox"/>	567	Thiourea	62-56-6	6.8	58	2019-01-02	Yes	Sigma Aldrich	2017
<input type="checkbox"/>	566	Mercury(II) chloride	7487-94-7	8.0	61	2019-01-02	Yes	Sigma Aldrich	2017
<input type="checkbox"/>	565	DEHP	117-81-7	7.8	46	2019-01-02	Yes	Sigma Aldrich	2016

Welcome to the P2OASys Tool!

Information about P2OASys can be found on the TURI webpage [here](#).

New Assessment		Load From Database	
Name	P2OASys Format	SDS Format	Remove
Trichloroethylene	<input type="button" value="Enter Data"/>	<input type="button" value="Enter Data"/>	<input type="button" value="Remove"/>
Score Summary		Compare Raw Data	
<input type="button" value="Upload A Chemical/Product to the P2OASys Database"/>			
Export Data to CSV		Import Data from CSV	
<input type="button" value="Hazard Score Matrix"/>			

Process and Lifecycle Factors

You are currently editing: Trichloroethylene

CAS: 79-01-6

Save Changes

Expand All

Collapse All

Acute Human Effects

Chronic Human Effects

Ecological Hazards

Environmental Fate & Transport

Atmospheric Hazard

Physical Properties

Process Factors

Life Cycle Factors

Process Factors

Process Factors

Heat

Noise Generation

Vibration

Ergonomic Hazard

Psychosocial Hazard

High Pressure System

High Temperature System

Water Use

Energy Use

Exposure Potential

Process Factors

Process Factors

Heat

Units	Value	Score
WBGT, deg C	<input type="text"/>	<input type="text"/>

Noise Generation

Units	Value	Score
dBA/hr	<input type="text"/>	<input type="text"/>

Vibration

Units	Value	Score
Class 1 Small Machine (mm/s)	<input type="text"/>	<input type="text"/>
Class 2 Medium Machine (mm/s)	<input type="text"/>	<input type="text"/>
Class 3 Large Rigid Foundation (mm/s)	<input type="text"/>	<input type="text"/>
Class 4 Large Soft Foundation (mm/s)	<input type="text"/>	<input type="text"/>

Ergonomic Hazard

Units	Value	Score
Occurrence	<input type="text" value="Possible"/>	<input type="text" value="6"/>
Hazard Level	<input type="text" value="Moderate injury, loss of consciousness"/>	<input type="text" value="6"/>

Process Factors Continued

Psychosocial Hazard

Units	Value	Score
Work Overload and Pace: Work Load	<input type="text"/>	<input type="text"/>
Work Overload and Pace: Machine Pacing	<input type="text"/>	<input type="text"/>
Work Overload and Pace: Time Constraints	<input type="text"/>	<input type="text"/>
Work Schedule: Shift Work	<input type="text"/>	<input type="text"/>
Work Schedule: Work Isolation	Process creates iso	8
Control	Process doesn't allc	8
Work Environment & Equipment: Equipment Stability	<input type="text"/>	<input type="text"/>
Work Environment & Equipment: Work Space	<input type="text"/>	<input type="text"/>

High Pressure System

Units	Value	Score
Pressure (Delta % Change From Ambient)	0.00	2

High Temperature System

Units	Value	Score
Temperature (Delta % Change From Ambient)	25.00	6

Water Use

Units	Value	Score
% Water Change	<input type="text"/>	<input type="text"/>
Reuse	<input type="text"/>	<input type="text"/>

Process Factors Continued

Energy Use

Units	Value	Score
% Energy Change	<input type="text"/>	<input type="text"/>
% Renewable Energy	<input type="text"/>	<input type="text"/>

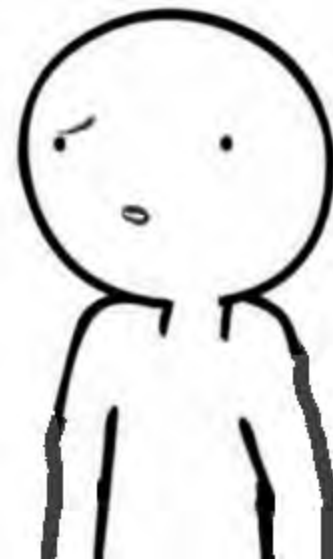
Exposure Potential

Units	Value	Score
Occurrence: Near Certain	<input type="text"/>	<input type="text"/>
Occurrence: Highly Likely	<input type="text"/>	<input type="text"/>
Occurrence: Likely	Critical hazard	6
Occurrence: Unlikely	<input type="text"/>	<input type="text"/>
Occurrence: Remote	<input type="text"/>	<input type="text"/>

But... It Looks Populated...

Why Do I Need to Check It/Add Things?

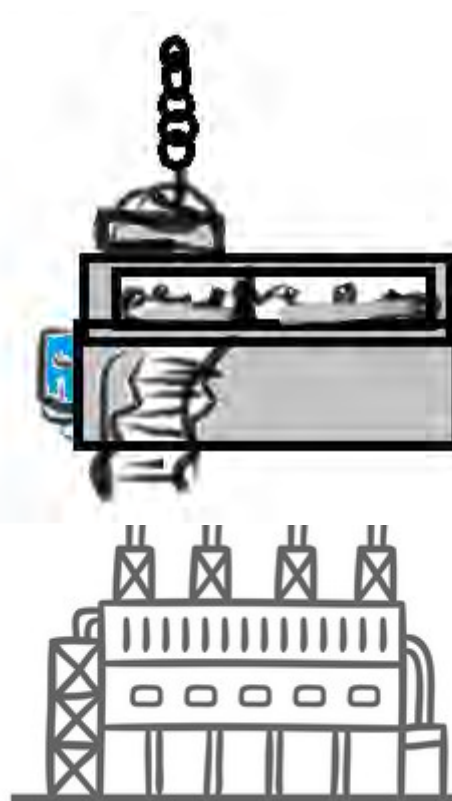
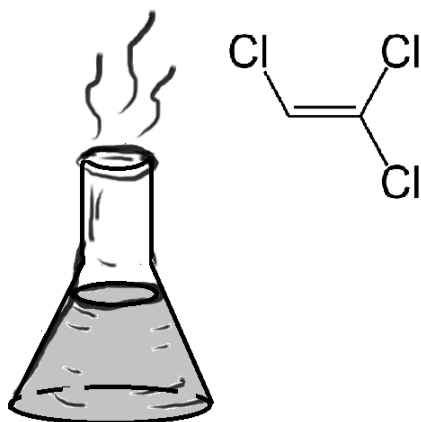
- Taken from a specific SDS
 - SDSs can differ slightly depending on date and timing of new information
- Some of the chemicals in the database have not been verified by the TURI lab
- **Your cleaning process is different than my cleaning process**



Same Chemical, Different Process

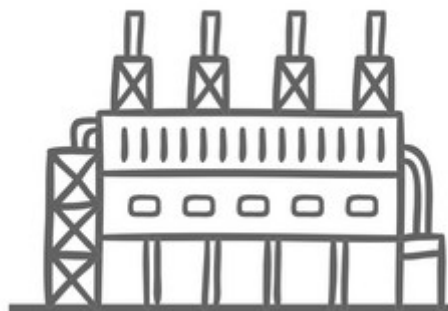
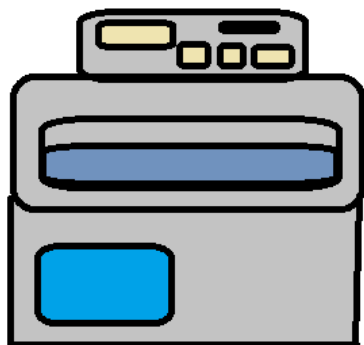
Company A

Company B

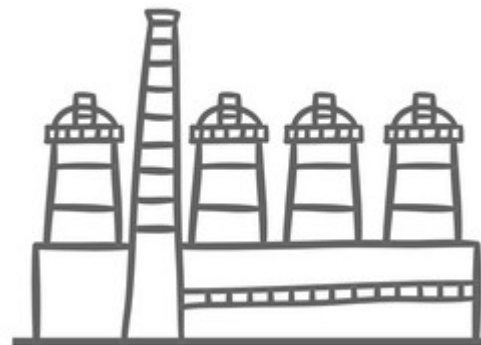


Evaluating Your Chemical and Process

Company A



Company B



Activity 2: Cleaning Process

Step 1: Go to p2oasys.turi.org

Step 2: Click on *“Load from Database”*

Step 3: Search for Trichloroethylene, click the box next to the first one, and click on *“Add to Session”*

Step 4: Repeat step 3 to add each identified alternatives from Activity 1

Step 5: Go Back to the main page and click on Score Summary

Welcome to the P2OASys Tool!

Information about P2OASys can be found on the TURI webpage [here](#).

New Assessment

Load From Database

Name	P2OASys Format	SDS Format	Remove
Trichloroethylene	Enter Data	Enter Data	Remove
SC Aircraft and Metal Cleaner	Enter Data	Enter Data	Remove
Inproclean 3800	Enter Data	Enter Data	Remove
Aquavantage 1400 GD	Enter Data	Enter Data	Remove

Score Summary

Compare Raw Data

Upload A Chemical/Product to the P2OASys Database

Export Data to CSV

Import Data from CSV

Hazard Score Matrix

Categories	Trichloroethylene	SC Aircraft and Metal Cleaner	Inproclean 3800	Aquavanta ge 1400 GD		
Acute Human Effects	8	3	10	7	<input type="text"/>	1
Chronic Human Effects	9	2	2	4	<input type="text"/>	1
Ecological Hazards	8	4	4	6	<input type="text"/>	1
Environmental Fate & Transport	9	4	6	8	<input type="text"/>	1
Atmospheric Hazard	6	2	2	2	<input type="text"/>	1
Physical Properties	10	7	8	8	<input type="text"/>	1
Process Factors	7	4	6	3	<input type="text"/>	1
Life Cycle Factors	10	2	7	6	<input type="text"/>	1
Product Score	8.4	3.5	5.6	5.5		
Final Score	8.4	3.5	5.6	5.5		

Recalculate Weight

Reset



Step 6: Use the information given to fill out some of the endpoints in the Process Factors section

Chemical / Product	Method	Temp (F)	Dilution with Water	Rinse Step	Automated?
Trichloroethylene	Vapor Degreasing	180 F	0	No	No
SC Aircraft & Metal Cleaner	Immersion	68 F	0	No	Yes
Inproclean 3800	Heated Ultrasonics	130 F	10% dilution	No	No
Aquavantage 1400	Ultrasonics	68 F	10% Dilution	Yes	No

Section 7: Create a list of resources you would use to fill out the rest of the information.

Life Cycle Factors

You are currently editing: Trichloroethylene

CAS: 79-01-6

Save Changes

Expand All

Collapse All

Acute Human Effects

Chronic Human Effects

Ecological Hazards

Environmental Fate & Transport

Atmospheric Hazard

Physical Properties

Process Factors

Life Cycle Factors

Life Cycle Factors Continued

Life Cycle Factors
Upstream Effects
Consumer Hazard
Disposal Hazard (landfill, incineration)
Reportable Quantity
Recycling
Renewable to Nonrenewable Resource

Life Cycle Factors

Upstream Effects

Units	Value	Score
Key Phrases	<input type="text"/>	<input type="text"/>

Consumer Hazard

Units	Value	Score
Key Phrases	<input type="text"/>	<input type="text"/>

Disposal Hazard (landfill, incineration)

Units	Value	Score
Key Phrases	<input type="text"/>	<input type="text"/>

Reportable Quantity

Units	Value	Score
Pounds	<input type="text"/>	<input type="text"/>

Recycling

Units	Value	Score
% Recyclable at End of Life	<input type="text"/>	<input type="text"/>
Uses Products With % Recycled Material	<input type="text"/>	<input type="text"/>

Renewable to Nonrenewable Resource

Units	Value	Score
% Renewable Materials	<input type="text"/>	<input type="text"/>
Key Words	<input type="text"/>	<input type="text"/>

Activity 3

Step 1: Go back into the P2OASys Format for each chemical and fill out (to the best of your knowledge) the endpoints based on expert judgement and external resources (Help Section on P2OASys).

Step 2: Create a list, with your group, of other resources where you may be able to get information that you had trouble answering.

Step 3: Use the *Test Instructions* excel sheet to create an EHS color code table of your evaluated products.

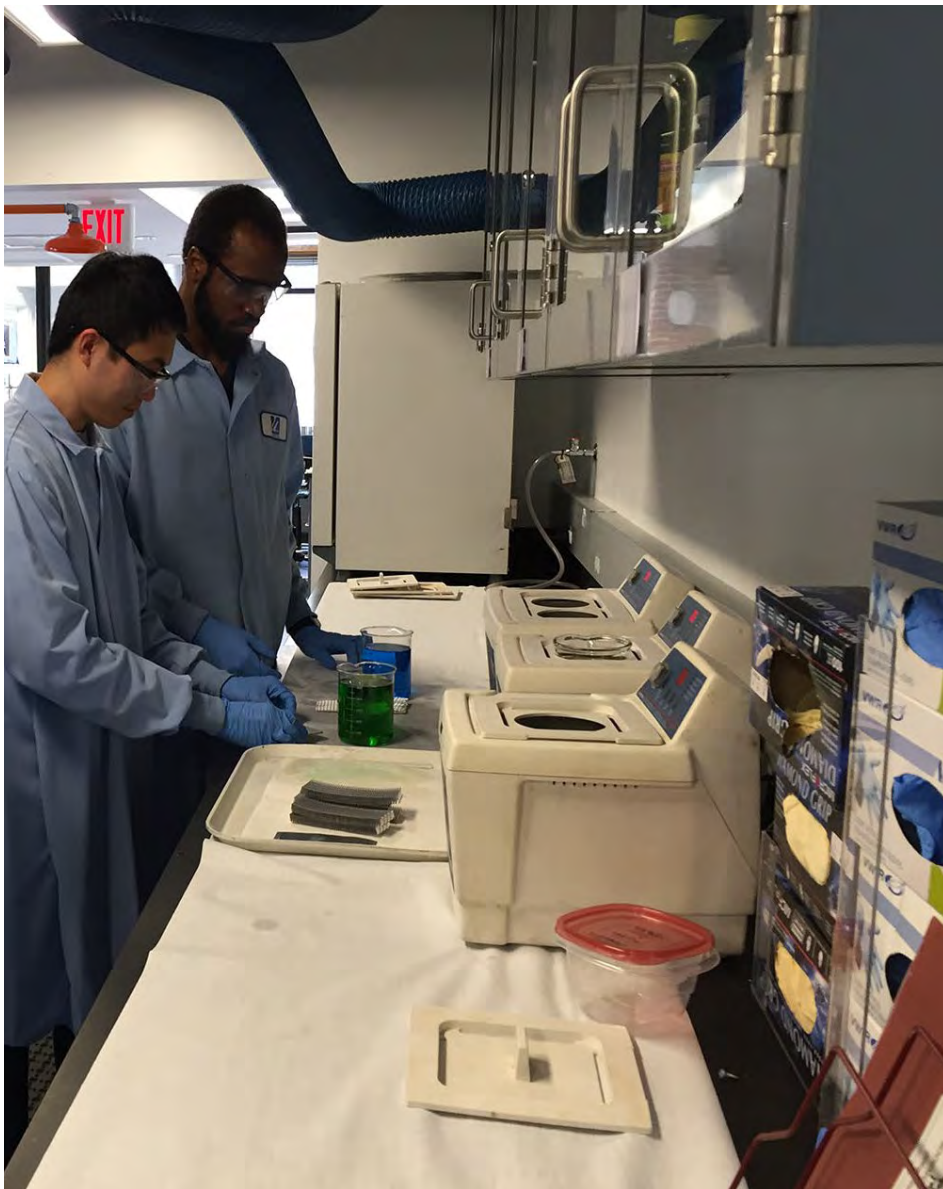
Step 4: Decide which potential alternative(s) should you move forward with performance testing and why.

Discussion

- What alternatives did you decide to move forward with testing?
 - Why or why not?
- What was the hardest information to gather?
 - Easiest?
- Was there a change in scoring due to process differences?
 - Take a moment to play with the process section and lifecycle section

Review

- Cleanersolutions.org can be a great starting point
 - Request testing for chemicals not in database
- P2OASys is a great tool to organize your options and review the pros and cons of each alternative you are considering
- Resources available through TURI
 - <http://guides.turi.org/beyondmsds>
 - Alternative Assessments – byproducts
 - Alternative laboratory testing



Toxics Use Reduction Institute

www.turi.org

978-934-3275

The Offices at Boott Mills West
126 John Street, Suite 14
Lowell, MA 01852



Alicia McCarthy,
Laboratory Specialist
Alicia_McCarthy@uml.edu
978-934-3889