Introduction to the AFIRM Supplier Toolkit

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AFIRM Toolkit History

• First version published October 2008

• Supplier Feedback:
  – Seemed geared toward brands
  – More technical information and examples requested
  – Request for AFIRM combined RSL to meet all brand requirements
Updated 2011 AFIRM Supplier Toolkit

• Published November 2011
• Responds to Supplier Feedback
  – Geared toward suppliers
  – More detailed information on more chemicals
  – Improved formatting and internal links
• Available in Chinese, Vietnamese and Spanish
Updated 2011 AFIRM Supplier Toolkit

• Key Additions
  – RSL Failures with corrective action examples in simple format
  – Detailed Chemical Guidance Document with full Index

• Resources available for all levels of technical expertise
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<th>Plastic, rubber, paint, and coatings</th>
<th>Natural materials (e.g., paper, wood)</th>
<th>Metal</th>
<th>Fusible, padded, feather, and down</th>
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<td>Tin Organic Compounds</td>
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</tr>
</tbody>
</table>

Logos of participating companies are shown at the bottom of the page.
# Background on Restricted Substances

## Restricted Substances

<table>
<thead>
<tr>
<th>Restricted Substances</th>
<th>Description &amp; Where they may be found</th>
</tr>
</thead>
<tbody>
<tr>
<td>Alkylphenol Ethoxylates (APEOs) / Alkylphenols (AP)</td>
<td>APEOS are non-ionic surfactants including NPEOs, OPEOs, NP, and OP. NPEOs and OPEOs degrade into NP and OP, respectively. APEOs can be used as or found in:</td>
</tr>
</tbody>
</table>
| Nonylphenol Ethoxylates (NPEO) | • Detergents  
• Scouring agents  
• Wetting agents  
• Softeners  
• Emulsifier/dispersing agents for dyes and prints  
| Octylphenol Ethoxylates (OPEO) | • Impregnating agents  
• Degreasing agents for leather  
• Leather Finishing  
• De-gumming for silk production  
| Nonylphenol (NP) | • Dyes and pigment preparations  
| Octylphenol (OP) | • Polyester padding  
• Down/feather fillings |

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Appendix B - Factory Management Plan

7. Data Management
   7.1. Access to RSL data throughout the supply chain is a key component in management strategy for the RSL. Strategic testing of materials is critical for streamlining RSL management.
   7.2. Describe how you manage data you collect from sample analysis/testing and how you share that information with your partners
      - Do you have a database for all testing data?
      - Do you send this data for management review on a regular basis?
      - Do you identify suppliers with repeated failures and put them on notice?

8. Tracking Time Table
   8.1. Set up a time table which identifies your RSL Plan of each year. Some items must be included, such as: Four deadlines of reviewing of your RSL Data trend; One training/meeting on RSL to your vendors; Summary of your RSL tracking from Purchasing at the end of the year.

Example:

<table>
<thead>
<tr>
<th>Progress</th>
<th>Target Date</th>
<th>Finish Date</th>
</tr>
</thead>
<tbody>
<tr>
<td>Complete RSL Plan and present to factory management</td>
<td>1/20/13</td>
<td></td>
</tr>
<tr>
<td>Discuss RSL Plan with vendors</td>
<td>2/20/13</td>
<td></td>
</tr>
<tr>
<td>Set up the RSL Action Plan Schedule</td>
<td>4/20/13</td>
<td></td>
</tr>
<tr>
<td>Prepare material for RSL testing</td>
<td>5/20/13</td>
<td></td>
</tr>
<tr>
<td>Finish RSL testing</td>
<td>6/20/13</td>
<td></td>
</tr>
<tr>
<td>Review RSL data trend with vendors</td>
<td>7/20/13</td>
<td></td>
</tr>
<tr>
<td>Review and revise RSL plan for continuous improvement</td>
<td>8/20/13</td>
<td></td>
</tr>
</tbody>
</table>
## Appendix D – Best Practices to Avoid RSL Issues

<table>
<thead>
<tr>
<th>Restricted Substance</th>
<th>Manufacturing Technology That Could Introduce The Substance</th>
<th>Steps to Avoid Restricted Substance in Finished Products</th>
</tr>
</thead>
<tbody>
<tr>
<td>Natural Fibers (cotton, rayon, wool, hemp, etc.)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Formaldehyde</td>
<td>Resins to prevent shrinkage</td>
<td>Use formaldehyde free resins, use low formaldehyde resins &amp; fully cure to chemical supplier specifications to remove free formaldehyde.</td>
</tr>
<tr>
<td></td>
<td>Resins to prevent wrinkling</td>
<td>Use formaldehyde free resins, use low formaldehyde resins &amp; fully cure to chemical supplier specifications to remove free formaldehyde.</td>
</tr>
<tr>
<td></td>
<td>Resins to permanently include winnies</td>
<td>Use formaldehyde free resins, use low formaldehyde resins &amp; fully cure to chemical supplier specifications to remove free formaldehyde.</td>
</tr>
<tr>
<td></td>
<td>Discharge Printing</td>
<td>Water based discharge printing systems rely on Zinc Formaldehyde Sulfoxide (ZFS). Discharge prints must be used according to manufacturers instructions to inset adult formaldehyde requirements.</td>
</tr>
<tr>
<td></td>
<td>Pigment print binder</td>
<td>Use formaldehyde free binders, Use low formaldehyde binders &amp; fully cure to chemical supplier specifications to remove free formaldehyde.</td>
</tr>
<tr>
<td></td>
<td>Heavy metals (mercury, lead, cadmium)</td>
<td>Dye stuff</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Pigment prints</td>
</tr>
<tr>
<td></td>
<td>Azo amines</td>
<td>Dye stuff</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Pigment prints</td>
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<td>Synthetic Fibers (polyester, nylon, acetate, acrylic, etc.)</td>
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<td></td>
</tr>
<tr>
<td>Formaldehyde</td>
<td>Resins to prevent shrinkage</td>
<td>Use formaldehyde free resins, use low formaldehyde resins &amp; fully cure to chemical supplier specifications to remove free formaldehyde.</td>
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<td>Resins to prevent wrinkling</td>
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<td>Resins to permanently include winnies</td>
<td>Use formaldehyde free resins, use low formaldehyde resins &amp; fully cure to chemical supplier specifications to remove free formaldehyde.</td>
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<tr>
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<td>Cross linking agent in coating processes</td>
<td>Use formaldehyde free resins, use low formaldehyde resins &amp; fully cure to chemical supplier specifications to remove free formaldehyde.</td>
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<tr>
<td></td>
<td></td>
<td>Dye stuff</td>
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<td>Stabilizer</td>
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<td></td>
<td></td>
<td>Polymer extrusion contamination</td>
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<td></td>
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<td>Disperse dyes</td>
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<tr>
<td></td>
<td></td>
<td>Azo dyes</td>
</tr>
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Appendix E – RSL Corrective Actions

Restricted Substance Problem Solution Prevention Library

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Appendix E – RSL Corrective Actions

Problem #6

- Socks were tested for VOC’s and found to contain Dimethylformamide, methylene chloride, and acetone
- Supplier was found to be lubricating the knitting yarn with an unlabelled solvent with no MSDS information

SOLUTION:
- Production was stopped immediately
- All current stock/shipments destroyed
- Supplier is under review and production in their facility has been suspended
- Supplier required to prove factory corrective action plan before production can resume

Misc.
Appendix F – Detailed Chemical Guidance Document

AFIRM Chemical Guidance Document

2.3.5 Polyurethane (PU)

Polyurethane polymers are formed by reacting at least two isocyanate functional groups with at least two alcohol groups in the presence of a catalyst (e.g., tertiary amines such as dimethylcyclohexylamine, and organometallic salts such as dibutyltin dilaurate). Dibutyltin dilaurate always contains impurities of tributyltin monolaurate. The first essential component of a polyurethane polymer is the isocyanate. Molecules that contain two isocyanate groups are called diisocyanates. These molecules are also referred to as monomers or monomer units, since they themselves are used to produce polymeric isocyanates that contain three or more isocyanate functional groups. Isocyanates can aromatic compounds such as diphenylmethane diisocyanate (MDI) or toluene diisocyanate (TDI), or aliphatic compounds such as hexamethylene diisocyanate (HDI) or isophorone diisocyanate (IPDI).
Appendix F – Detailed Chemical Guidance Document

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AFIRM Chemical Guidance Document

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Appendix G – MSDS Examples and Explanations

Safety Data Sheet
according to Regulation (EC) No. 1907/2006 (REACH)

Trade name: 
Material-No.: 
Specification: 
Version: 1.0 / EN
Print date: 
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Revision date:

2. HAZARDS IDENTIFICATION

Classification:

Other Hazards

Informations pertaining to special dangers for human and environment:

Adverse physicochemical effect(s):
Adverse human health effect(s) and symptom(s):

Adverse environmental effect(s):
Other adverse hazard(s):

3. COMPOSITION/INFORMATION ON INGREDIENTS

Chemical characterization (substance):

CAS.-No.: 
EC-No.: 
INDEX-No.: 

Purity:

Synonyme(s):

Stabilizer(s):

Hazard(ous) impurity(ies):

Kommentar [HA8]: Distinguish clearly between preparations which are classified as dangerous and preparations which are not classified as dangerous according to Directive 1999/45/EC.

Kommentar [HA9]: The classification of the substance shall be consistent with the classification provided to the classification and labelling inventory according to Title XI.

Kommentar [HA10]: Describe the most important adverse physicochemical, human health and environmental effects and symptoms relating to the uses and possible mixtures of the substance or preparation that can reasonably be foreseen.

Kommentar [HA11]: It may be necessary to mention other hazards, such as dustiness, cross-sensitization, suffocation, freezing, high potency for colour or taste or environment effects, such as hazards to soil-dwelling organisms, ozone depletion, phototoxic or photocatalytic ozone creation potential, etc., which do not result in classification but which may contribute to the overall hazards of the material.
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## Appendix I – Screen Printing Best & Worst Practices

**Screen print Ink Storage Best Practices**

- Storage room dedicated to ink
- Room clean and free of clutter
- Shelves available to organize ink by type and keep containers off the floor
- Shelves clearly labeled
- Ink chemicals containers properly labeled
- Ink containers clean, any spills cleaned immediately
- MSDS, spill clean up equipment available
Ink Room and Storage
Ink Room and Storage
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### Appendix J – Frequently Asked Questions (FAQ)

<table>
<thead>
<tr>
<th>Q</th>
<th>For the sample shown below, is a separate RSL test required for each different color, or could a composite test be performed by combining all colors?</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>Composite testing is allowed by some AFIRM brands and not others. Brands that do allow compositing have different limits for the number of samples that may be included in a composite. This number may vary depending on the materials tested and the restricted substance tested for. If composite testing is allowed, and if, for example, three is the maximum number of materials allowed for composite testing, a composite of equal amounts of the three materials can be tested. Brand policy as well as nominated laboratories will direct suppliers on composite requirements or restrictions.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Q</th>
<th>For an embroidered badge, can RSL testing be performed using a composite test for all colors and all different layers?</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>For those AFIRM brands that allow compositing, RSL testing should be performed by compositing the colors. A separate test of the adhesive layer should be performed if it is possible to separate that adhesive layer.</td>
</tr>
</tbody>
</table>
Appendix L — Additional Online Resources

Chemical Restriction Information

**Restricted Substance Lists and Resources**

**AAFA Restricted Substance List**
[https://www.apparelfootwear.org/Resources/RestrictedSubstances.asp](https://www.apparelfootwear.org/Resources/RestrictedSubstances.asp)

This Restricted Substances List (RSL) was created by a special working group of the American Apparel & Footwear Association’s (AAFA) Environmental Task Force. The RSL is intended to provide apparel and footwear companies with information related to regulations and laws that restrict or ban certain chemicals and substances in finished home textile, apparel, and footwear products around the world. The American Apparel & Footwear Association (AAFA) is the national trade association representing apparel, footwear and other sewn products companies, and their suppliers, which compete in the global market.

**AFIRM Brand Links (available on AFIRM website)**
[http://www.afirm-group.com/companies.htm](http://www.afirm-group.com/companies.htm)
AFIRM Toolkit Website

- [http://www.afirm-group.com/suppliersltool.htm](http://www.afirm-group.com/suppliersltool.htm)
- Contact: [info@afirm-group.com](mailto:info@afirm-group.com)