Regulatory Strategies
Work Group Webinar for:

- Crawling Bug Insecticide
- Charcoal Lighter Material
- Aerosol Cooking Spray
- Floor Wax Stripper
- Paint Stripper

October 2, 2019
10:00am-12:00pm
Overview

- CARB rulemaking to identify additional required consumer product VOC reductions
- **April 12, 2019:** Kickoff Public Workshop
- **May- July 2019:** Eleven initial work group meetings to evaluate 47 promising categories
- **Summer 2019:** Stakeholder meetings
- **Today:** Kick off next round of three work group meetings covering 17 product categories
Crawling Bug Insecticide
Category Overview:
Crawling Bug Insecticide (Aerosol)

- “Crawling Bug Insecticide” means any insecticide product that is designed for use against ants, cockroaches, or other household crawling arthropods, such as mites, silverfish or spiders. “Crawling Bug Insecticide” does not include products designed to be used exclusively on humans or animals, or any house dust mite product.

- “Aerosol Product” means a pressurized spray system that dispenses product ingredients by means of a propellant contained in a product or a product's container, or by means of a mechanically induced force. “Aerosol Product” does not include “Pump Spray.”

Category Overview (continued):
Crawling Bug Insecticide (Aerosol)

Other insecticide categories that are not Crawling Bug Insecticides include:

- Flea or Tick Insecticide
- Flying Bug Insecticide
- Insecticide Fogger
- Lawn or Garden Insecticide
- Wasp or Hornet Insecticide
- Insect repellent
- Any product designed for direct contact with humans or animals
Category VOC Content: Crawling Bug Insecticide (Aerosol)
Category Ingredient Breakdown: Crawling Bug Insecticide (Aerosol)

Crawling Bug Insecticide (aerosol) Ingredients

- Water (78%)
- Grouped-LVP (1%)
- LVP-VOC (9%)
- VOC (12%)

VOC Breakdown

- Isobutane (31%)
- Propane (26%)
- Hydrocarbon Solvent, Bin #11 VOC Portion (20%)
- Propylene Glycol n-Butyl Ether (19%)
- Isopropyl Alcohol (4%)
## Category Overview: Crawling Bug Insecticide

### Possible VOC Thresholds

<table>
<thead>
<tr>
<th>Crawling Bug Insecticide</th>
<th>Possible Threshold (Percent VOC)</th>
<th>Possible Threshold (VOC Tons Per Day Reduced)</th>
<th>Possible Threshold (Complying Market Share (Product-Formulations))</th>
<th>Possible Threshold (Complying Market Share (Mass))</th>
<th>Possible Threshold (Number of Companies)</th>
<th>Possible Threshold (Number of Products)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Percent VOC</td>
<td>15%</td>
<td>0</td>
<td>100%</td>
<td>100%</td>
<td>19</td>
<td>113</td>
</tr>
<tr>
<td>VOC Tons Per Day Reduced</td>
<td>12%</td>
<td>0.19</td>
<td>35%</td>
<td>25%</td>
<td>14</td>
<td>65</td>
</tr>
<tr>
<td>Complying Market Share (Product-Formulations)</td>
<td>10%</td>
<td>0.36</td>
<td>26%</td>
<td>21%</td>
<td>14</td>
<td>40</td>
</tr>
<tr>
<td>Complying Market Share (Mass)</td>
<td>8%</td>
<td>0.55</td>
<td>22%</td>
<td>14%</td>
<td>11</td>
<td>28</td>
</tr>
<tr>
<td>Number of Companies</td>
<td>5%</td>
<td>0.87</td>
<td>18%</td>
<td>7%</td>
<td>10</td>
<td>18</td>
</tr>
<tr>
<td>Number of Products</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Discussion & Questions
Charcoal Lighter Material
Category Definition and Regulatory History: Charcoal Lighter Material

- Charcoal Lighter Material” means any combustible material designed to be applied on, incorporated in, added to, or used with charcoal to enhance ignition. “Charcoal Lighter Material” does not include any of the following: (A) electrical starters and probes, (B) metallic cylinders using paper tinder, (C) natural gas, (D) propane, and (E) fat wood.

- Only Category Certified by CARB.

- Current VOC limit is 0.020 lb/start (SCAQMD Rule 1174 Ignition Method Compliance Testing Protocol)
## Category Overview:
### Charcoal Lighter Material

<table>
<thead>
<tr>
<th>Charcoal Lighter Material</th>
<th>Charcoal Lighter Briquettes</th>
<th>Charcoal Lighter Fluid</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Reporting Companies: 14</td>
<td>• Reporting Companies: 6</td>
<td>• Reporting Companies: 14</td>
</tr>
<tr>
<td>• Reporting Products: 46</td>
<td>• Reported Products: 20</td>
<td>• Reported Products: 26</td>
</tr>
<tr>
<td>• SWA-VOC Content: 54.09%</td>
<td>• SWA-VOC Content: 11.88%</td>
<td>• SWA-VOC Content: 95.61%</td>
</tr>
<tr>
<td>• VOC (tpd): 1.98</td>
<td>• VOC (tpd): 0.22</td>
<td>• VOC (tpd): 1.76</td>
</tr>
<tr>
<td>• VOC Emission Rate Range (lbs/start): 0.0042 – 0.02</td>
<td>• VOC Emission Rate Range (lbs/start): 0.0042 – 0.0117</td>
<td>• VOC Emission Rate Range (lbs/start): 0.0173 – 0.02</td>
</tr>
<tr>
<td>• SWA-VOC Emission Rate (lbs/start): 0.0125</td>
<td>• SWA-VOC Emission Rate (lbs/start): 0.0117</td>
<td>• SWA-VOC Emission Rate (lbs/start): 0.0173</td>
</tr>
</tbody>
</table>
Number of CARB Certified Briquette Products (2012-Present)
Charcoal Lighter Fluid:
Number of CARB Certified Lighter Fluids (2012-present)
# Possible VOC Thresholds: Charcoal Lighter Material

<table>
<thead>
<tr>
<th>Charcoal Lighter Material</th>
<th>Possible Threshold</th>
<th>Possible Threshold</th>
<th>Possible Threshold</th>
<th>Possible Threshold</th>
<th>Possible Threshold</th>
</tr>
</thead>
<tbody>
<tr>
<td>VOC Emission Rate (lbs./start)</td>
<td>0.018</td>
<td>0.016</td>
<td>0.015</td>
<td>0.014</td>
<td>0.012</td>
</tr>
<tr>
<td>VOC Tons Per Day Reduced</td>
<td>0.00</td>
<td>0.012</td>
<td>0.22</td>
<td>0.33</td>
<td>0.53</td>
</tr>
<tr>
<td>Complying Market Share (Mass)(^1)</td>
<td>98%</td>
<td>50%</td>
<td>50%</td>
<td>50%</td>
<td>47%</td>
</tr>
<tr>
<td>Number of Certified Charcoal Lighter Fluid Products(^2)</td>
<td>18</td>
<td>5</td>
<td>2</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Number of Certified Charcoal Lighter Briquette Products(^2)</td>
<td>155</td>
<td>151</td>
<td>151</td>
<td>146</td>
<td>94</td>
</tr>
</tbody>
</table>

\(^1\) Products Reported in 2015 Survey.
\(^2\) CARB Certified products since 2012.
Discussion & Questions
Aerosol Cooking Spray
Aerosol Cooking Spray Overview:

- Definition
- Background
- Survey Results
  - Companies
  - Products
  - VOC Content
  - Product Weighted Maximum Incremental Reactivity (PWMIR)
  - Product Groups
- VOC Breakdown
- Possible PWMIR Thresholds
- Discussion and Questions
Definition

- Aerosol Products designed to reduce sticking on cooking and baking surfaces or to be applied on food, or both.
Background

- Aerosol Products designed to reduce sticking on cooking and baking surfaces or to be applied on food, or both. Product form introduced in the early 1960’s
- Product regulated in the Phase II consumer products regulation in the early 1990’s
- Current limit = 1995 VOC limit of 18%
- About 6 million pounds of product sold in 2013
Survey Results

- Number of Companies Reporting - 5
- Number of Products Reported - 72
- Category VOC Range - 13.9 - 17.9 percent
- Average Product VOC - 17 percent
- Average Product Weighted MIR - .154
Aerosol Cooking Spray Product Histogram
Aerosol Cooking Spray VOC Breakdown

- Propellant
  - Iso-butane
  - Propane
  - N-Butane
- Ethanol
Aerosol Cooking Spray VOC Details

- Propane: 48%
- Isobutane: 50%
- n-Butane: 1%
- Ethanol: 1%
## Possible PWMIR Limits

<table>
<thead>
<tr>
<th>Aerosol Cooking Spray</th>
<th>Possible Threshold</th>
<th>Possible Threshold</th>
<th>Possible Threshold</th>
<th>Possible Threshold</th>
</tr>
</thead>
<tbody>
<tr>
<td>PWMIR</td>
<td>0.025</td>
<td>0.05</td>
<td>0.10</td>
<td>0.15</td>
</tr>
<tr>
<td>Ozone Tons Per Day Reduced</td>
<td>1.64</td>
<td>1.41</td>
<td>0.94</td>
<td>0.48</td>
</tr>
<tr>
<td>Complying Market Share (Product-Formulations)</td>
<td>0%</td>
<td>0%</td>
<td>0%</td>
<td>42%</td>
</tr>
<tr>
<td>Complying Market Share (Mass)</td>
<td>0%</td>
<td>0%</td>
<td>0%</td>
<td>31%</td>
</tr>
</tbody>
</table>
Discussion & Questions
Paint Remover or Stripper
Category Overview: Paint Remover or Stripper

“Paint Remover or Stripper” means any product designed to strip or remove paints or other related coatings, by chemical action, from a substrate without markedly affecting the substrate. “Paint Remover or Stripper” does not include “Multi-purpose Solvent,” paint brush cleaners, products designed and labeled exclusively as “Graffiti Remover,” and hand cleaner products that claim to remove paints and other related coatings from skin.

50% VOC limit effective on January 1, 2005
U.S. EPA Prohibition on Methylene Chloride (MeCl) in Paint Stripper

- MeCl exposure can cause death due to nervous system exposure
  - Less harmful substitutes available
- U.S. EPA announced ban on March 15, 2019
  - Does not apply to workplace uses
  - Action eliminates MeCl, an Exempt VOC, as a compliance option to meet paint stripper VOC content limits
- DTSC Safer Consumer Product Program also evaluating MeCl use in paint stripper
Category Overview: Paint Remover or Stripper

- Number of Companies: 32
- Number of Products: 181
- VOC Emissions (tpd): 0.93
- Methylene Chloride Emissions (tpd): 2.32
- Sales Weighted Average VOC: 24.81%
- PWMIR: 0.47
- TOG MIR: 0.51
Category Overview: Paint Remover or Stripper VOC Content Histogram
Category Overview: Paint Remover or Stripper
TOG Speciation

- Methylene Chloride 67%
- Other LVPs 3%
- Other VOCs 5%
- Toluene 2%
- n-Methyl-2-Pyrrolidone 3%
- Acetone 4%
- Methanol 16%
Discussion & Questions
Floor Wax Stripper
Category Overview: Floor Wax Stripper

“Floor Wax Stripper” means a product designed to remove natural or synthetic floor polishes or waxes through breakdown of the polish or wax polymers, or by dissolving or emulsifying the polish or wax. “Floor Wax Stripper” does not include aerosol floor wax strippers or products designed to remove floor wax solely through abrasion.
Category Overview: Floor Wax Stripper

- Category is currently regulated for post-dilution VOC content at two levels
- “Light or medium build-up of polish”: 3% by weight or less
- “Heavy build-up of polish”: 12% by weight or less
- 266 unique products in 2015 survey
- 136 product-formulations
- 9.00 tpd product sales
- 1.34 tpd VOC, 1.73 tpd TOG, 7.94 tpd OFP
Category Overview: Floor Wax Stripper

- Average PWMIR of 0.88
- 49% of product sales and 48% of product formulations are above 0.9 PWMIR
- High MIR LVP species are used in some formulations which makes traditional VOC reduction strategies ineffective
  - Benzyl Alcohol: MIR 5.11
  - Ethylene Glycol Phenyl Ether: MIR 4.49
## Category Overview: Floor Wax Stripper Product Comparison

<table>
<thead>
<tr>
<th>Floor Wax Stripper</th>
<th>Product #1</th>
<th>Product #2</th>
</tr>
</thead>
<tbody>
<tr>
<td>Product VOC %</td>
<td>24%</td>
<td>20%</td>
</tr>
<tr>
<td>As-Sold PWMIR</td>
<td>1.01</td>
<td>2.13</td>
</tr>
<tr>
<td>Dilution Claim (Heavy)</td>
<td>1:4 (hot water)</td>
<td>1:4 (cool water)</td>
</tr>
<tr>
<td>Substrate intended</td>
<td>Vinyl composition, rubber, asphalt-tile, terrazzo, concrete, and no-wax vinyl</td>
<td>Vinyl composition, vinyl, vinyl asbestos</td>
</tr>
<tr>
<td>Substrate Not Recommended</td>
<td>Marble, wood, natural stone</td>
<td>Marble, wood, linoleum, rubber, painted</td>
</tr>
<tr>
<td>Soak Time</td>
<td>5-8 Minutes</td>
<td>5-10 Minutes</td>
</tr>
<tr>
<td>Hand Scrub?</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>Machine Scrub?</td>
<td>Yes</td>
<td>Yes</td>
</tr>
</tbody>
</table>
Category Overview: Floor Wax Stripper
As-Sold Reactivity Histogram
Category Overview: Floor Wax Stripper With Light-Medium Buildup Dilutions
Category Overview: Floor Wax Stripper With Heavy Buildup Dilutions
## Category Overview: Floor Wax Stripper

### Possible MIR Thresholds (Light-Medium and Heavy Buildup)

<table>
<thead>
<tr>
<th></th>
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<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Post-Dilution PWMIR Limit</td>
<td>0.05</td>
<td>0.10</td>
<td>0.10</td>
<td>0.20</td>
<td>0.12</td>
<td>0.25</td>
<td>0.15</td>
<td>0.30</td>
</tr>
<tr>
<td>Ozone Tons Per Day Reduced</td>
<td>4.8</td>
<td>5.0</td>
<td>2.7</td>
<td>2.9</td>
<td>2.0</td>
<td>2.0</td>
<td>1.4</td>
<td>1.5</td>
</tr>
<tr>
<td>Complying Market Share Product-Formulation</td>
<td>20%</td>
<td>17%</td>
<td>36%</td>
<td>33%</td>
<td>42%</td>
<td>41%</td>
<td>53%</td>
<td>52%</td>
</tr>
<tr>
<td>Complying Market Share (Mass)</td>
<td>43%</td>
<td>38%</td>
<td>58%</td>
<td>47%</td>
<td>72%</td>
<td>70%</td>
<td>82%</td>
<td>79%</td>
</tr>
</tbody>
</table>
Discussion & Questions
Next Steps:

- Regulatory Definitions Work Group Meeting
  - October 4th: Sacramento, CA and by teleconference

- Regulatory Strategies Work Group Webinars:
  - October 10th: Hair Finishing Spray, Dry Shampoo, Aerosol Sunscreen, Mouthwash, PFP with 20% or less fragrance, APDO
  - October 17th: Hand Sanitizer, Air Freshener, Laundry Detergent, Fabric Softener, Non-Aerosol Glass Cleaner

- Fall Workshop
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- Bulletin signup
  - Enter your email and check “Consumer Products Program”