Company Overview

MCAT Services offers a patented process to recover equilibrium catalyst. The process recovers usable equilibrium catalyst, a by-product of the refining process, from spent catalyst previously considered a waste material. Weekly, thousands of tons of equilibrium catalyst are sent to landfills or costly disposal outlets. The MCAT process captures this opportunity through a process that magnetically separates the ‘younger reusable’ equilibrium catalyst (15-40%) from the ‘older discard’ equilibrium catalyst (60-85%). This process extends the life cycle of equilibrium catalyst to embrace the concept of industrial ecology.

Processed Ecat – Case Study

Sample data is from a resid unit in North America. The original ecat reported nickel (Ni) at 8459 ppm, vanadium (V) at 1031 ppm, iron (Fe) at 5652 ppm and activity of 71. MCAT recovered > 20% of the original ecat for reuse. The MCAT process produced an ecat yielding reduced Ni, V & Fe with an activity of 78. Through the use of this processed ecat, a refiner can save over $1,500 per ton compared to virgin FCC catalyst.

<table>
<thead>
<tr>
<th>Percent Recovered</th>
<th>Ni, ppm</th>
<th>V, ppm</th>
<th>Fe, ppm</th>
<th>Activity</th>
</tr>
</thead>
<tbody>
<tr>
<td>ECAT (feed)</td>
<td>8459</td>
<td>1031</td>
<td>5652</td>
<td>71</td>
</tr>
<tr>
<td>21.4</td>
<td>10985</td>
<td>1135</td>
<td>6722</td>
<td>65</td>
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<tr>
<td>20.7</td>
<td>10718</td>
<td>1155</td>
<td>6254</td>
<td>67</td>
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<td>25.9</td>
<td>8254</td>
<td>1050</td>
<td>5700</td>
<td>73</td>
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<td>19.7</td>
<td>5527</td>
<td>937</td>
<td>4834</td>
<td>76</td>
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<td>12.4</td>
<td>3592</td>
<td>877</td>
<td>4327</td>
<td>78</td>
</tr>
</tbody>
</table>

Contact

Sales and Marketing
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Operations
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Mail initial evaluation samples to:
MCAT Services
30625 Solon Road, Unit G
Cleveland, OH 44139
Attn: Claude Kennard

Samples should be labeled and should be about 1 quart.