



We face the future.

ALPHA KAT Frequently asked Questions and Answers

01: When and what type of catalysts are needed	<p>For pure plant waste no catalyst is needed. Clay Soil and Lime are the main components of the catalyst, the amounts needed depend on the combination of the feedstock. For plastic feedstock, small amounts of AL-MG Silicates may need to be added - which can be obtained locally.</p> <p>Sometimes the use of some specific catalyst from Dr. Koch is of help. This will be explained and discussed when during Dr. Koch's visit. However it has no effect on the running costs</p>
02: Does the catalyst get recovered in the process?	ALPHA KAT works on a 3% loss of Catalyst.



03: What happens to the CO ₂ ?	<p>If CO₂ is contained in the feedstock then this must be removed. E.g. cellulose contains 6 carbon-, 9 hydrogen- and 6 oxygen molecules. Therefore per cellulose molecule 3 CO₂ molecules are freed. In the balance this is of no concern as they come from renewable plant material which anyway does expel this natural CO₂. So we are not adding any CO₂. During the entire process no additional CO₂ is created and expelled into the atmosphere.</p>
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04: When material is very wet like e.g. sewage sludge then what happens to the water very wet greens etc.

In the drying part of the plant heat of 200° develops, the water evaporates and is collected as distilled water. This can then be used in chemistry, pharmacy or medicine, in coolers of cars and industry, irons etc. If one wants to use it for irrigation it must be re-energized which is best done with the Aquakat – please ask us for more info –the AquaKat is available from Penac Products, 021 9753166 - however this depends very much on the type of waste being used as - if it contains heavy metal not suitable for drinking or agricultural irrigation. There are many other avenues where this water can be used

05: How many operating plants are there in the world? And what is the feedstock used?

Mexico - Green waste
 Canada- Plastic/Electro waste
 Germany - Mixed waste x2
 Spain - Mixed waste
 Spain - Biological waste
 Bulgaria - Mixed waste
 Currently there are orders in place for more than 1400 plants, some on long-term contracts. After years of obtaining all the licenses in Germany for the production of the KDVs (EU approved) and internationally – finally in November 2009 ALPHAKAT could start with the production.

Germany



Canada



Bulgaria



Spain





<p>06: How clean must the waste be? i.e. after removing the glass, ceramics & metal what is the allowable amounts of these materials?</p>	<p>Maximum limit of mineral waste is 3%.</p>
<p>07: The ash that is produced – is it usually classed as hazardous?</p>	<p>This depends on your feed stock; if it contains heavy metals then it will be classed as hazardous. We can also provide additional equipment which separates the precious metals, which then of course can be reused or sold.</p>
<p>08: To what ppm can the desulphurization plant reduce the sulphur in the diesel?</p>	<p>The residual sulphur in the diesel will be very low, the ppm will vary according to your feedstock</p>
<p>09: Where would the plant be produced?</p>	<p>The plant will be manufactured in Germany, then shipped and assembled as a turnkey operation on your site.</p>





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<p>10: Does the plant need to take a blend of waste streams or can it take a single waste stream? For e.g. car tires, sludgy oils.</p>	<p>Single or blended the choice is yours. Your plant will be manufactured to your specific feedstock requirements. Also additions can be made at a later stage on site if necessary.</p>
<p>11: Does the high Carbon loading effect the process, therefore blending of other wastes being required?</p>	<p>Not at all, the only thing which may change slightly is the catalyst.</p>
<p>12: Is blended waste preferred, or more efficient, or easier to operate than a single waste stream?</p>	<p>The only preference to the waste is yours, depending on how much diesel you wish to produce. As it stands plastic has the highest conversion. (1 Ton = 900ltr)</p>
<p>13: Is the plant built for a specific waste stream? Or if the feedstock changes/disappears can the plant be used for other streams?</p>	<p>Only if you require it to be. Yes</p>
<p>14: Is there a sorting unit for MSW? If we provide the RSA black bags, filled with waste, is there equipment to sort the waste to get to the <3% mineral content required?</p>	<p>Yes, the equipment will sort the waste and feed the Alphakat.</p>





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<p>15: What is the size the plants/units are manufactured in? Or are they custom made?</p>	<p>KDV 500, 1000, 2000, 3000, 5000, 10,000. (The numeric's resemble the liters of diesel produced per hour) Also possible.</p>
<p>16: If yes, what is the minimum size for an economical viable plant?</p>	<p>All plants are viable if you have a continuous supply of feedstock.</p>
<p>17: What is the price of a typical plant, for xxx tons of waste, to produce yyy tons of diesel?</p>	<p>Please refer to our price list.</p>
<p>18: How many people are needed to run the plant</p>	<p>In general two, one should have some technical understanding and knowledge and one helper. However a mechanical engineer or similar should be prepared to come in if there should be a bigger problem</p>

