

QUARTERLY NEWSLETTER

New Kids On The Block



Our newly employed "kids" are kick-starting their careers at Khush Ingredients. Our **Graduate Scheme**, which has been running since 2018, has 4 new recruits this year, as well as taking on our **first ever Apprentice**. More about them to follow :-)

LIFE IN (FLUORINATED) PLASTIC, IT'S FANTASTIC

We have been researching the durability of mint in plastic containers. In the past, it would have been inconceivable to sell mint in such a vessel. We provide two types of plastic containers, High-Density Polyethylene (HDPE) and Fluorinated High-Density Polyethylene (FHDPE) containers. FHDPE provides an inert PTFE layer (similar to Teflon) inside of the plastic container improving the containers chemical resistance and structural integrity to most chemicals/oils.

We were interested to see whether FHDPEs could provide a safe alternative to store mint in plastic containers. The study took place over three months, in which Arvensis DMO was kept in both plastic types while the physical parameters and appearance of the oil were monitored. To further our investigation, samples were sent for GC analysis to check for changes in chemical composition. We had expected there to be a significant difference in the DMO's physicals, appearance, and chemical composition, however there were no noticeable changes detected.



Figure 1: Comparison between HDPE containers



Figure 2: FHDPE container

The visual inspection of the containers showed a substantial difference between FHDPE and HDPE. The HDPE container exhibited greater flexibility during the three months, whereas the FHDPE container had little to no change in the structure. This indicates that the HDPE container had become weaker and compressed over time. We believe permeation of the oil within the container resulted in structural instability of the container and lead to unsafe storage of the oil. Figure 3 shows the differences between the resistance of the plastic with key components of mint oils.

| Chemical | Resistance | |
|--------------------|------------|-----------|
| | HDPE | FHDPE |
| Menthafuran (Mint) | Poor | Excellent |
| Aldehydes | Medium | Excellent |
| Ketones | Medium | Excellent |
| Terpenes | Excellent | Excellent |

Figure 3: The affect on the containers

We will continue to monitor the changes in both types of container over the next 3 years to ensure that a suitable shelf-life can be given to mint in FHDPE containers.

In summary, HDPEs have shown to become weaker when storing Arvensis DMO. It is reasonable to assume that the structural integrity will also decline with other mint oils. As such, Khush Ingredients will not send mint oils stored in HDPE containers.

Sample our natural Mint Oil from Khush Ingredients

Email: learnmore@khushingredients.net

HIMALAYAN CEDARWOOD OIL



UK REACH REGISTRATION FOR HIMALAYAN CEDARWOOD

Khush Ingredients Technical team have registered another product for UK REACH.

This is the first time Himalayan Cedarwood Oil has been registered in the UK, and Khush Ingredients has volunteered to be lead registrant.

This oil is ideal for use as a woody fragrance. If you are interested in buying a few kilos, or a few tonnes, please let us know and we can arrange samples and technical documentation.

With the help of our producer partner, we are busy carrying out physical tests and acquiring toxicological and environmental data for the oil, which has seen a resurgence in popularity. This is due to ample supply of the high quality and sustainable product, alongside difficulties in sourcing alternative Atlas and Virginian Cedarwoods.

Sample our Cedarwood Oil from Khush Ingredients

Email: learnmore@khushingredients.net

PRODUCT OF THE MONTH



Organic Wintergreen Oil - September

After several years of difficulty sourcing natural Wintergreen Oil, Khush Ingredients have now secured Chinese Wintergreen Oil into its growing portfolio of essential oils, available in the UK and across Europe.

From the botanical gaultheria procumbens, the essential oil is greater than 98% methyl salicylate. BUT, how can the buyer tell if the oil is genuine rather than a low-priced chemical substitute for use in natural cosmetics and potions?

You can trust Khush Ingredients to provide natural Wintergreen Oil that has previously been tested for authenticity with a C14 test.

For those unfamiliar with C14 testing, it is the true (very expensive) technique for knowing whether a product has come from biomass of plants or from a chemical plant. As plants photosynthesise a small amount of natural isotope of carbon called carbon 14 is taken on-board by the plant and converted into biomass.

When a plant is harvested, the biomass contains C14 and this level cannot increase. Over time the C14 reduces in the biomass as it is converted into the more stable and abundant isotope C12.

The main raw material for chemical plants come from fossil fuels, which have been produced over millions of years and have 100% C12 in their hydrocarbon structure.

The results of a C14 test must find sufficient quantity of C14 in the oil to prove it is natural. If it doesn't, it is a pure synthetic made from a chemical plant. Traces of synthetic components pose a problem for those seeking a natural product.

The power of methyl salicylate as an analgesic has been known for several centuries, with the most familiar being the deep heat rubs used to ease muscular pains. Most don't realise that this is a close relation to aspirin (acetyl salicylic acid), which has confirmed medicinal properties. The usage of Wintergreen Oil has to be restricted (typically less than 0.3% for topical applications) due to the product's power and potential to overdose.



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Email: learnmore@khushingredients.net



Learn more at khushingredients.net