

Sean Raspet  
Deformulation  
26<sup>th</sup> February – 28<sup>th</sup> March

## 1a.

### *Program for Continuous Controlled Vaporization*

Chromatographic molecular separation and time-temperature based diffusion of a cross section of commercially produced substances\* using HeraTherm Advanced Protocol oven† with programmable temperature increase.

Substances (including natural and artificial flavors, cosmetics and cleaning products) are separated into their individual molecular components, each one of which has a distinct olfactory profile (or in some cases may be odorless). Each of these component molecules is vaporized and diffused into the surrounding air at a specific time within the oven sequence based on its boiling point and its interaction with a chromatographic sorbent as the oven temperature gradually rises.

Three programmable ovens are used in an alternating sequence to fully vaporize one substance per hour. The same hourly oven program is used on all substances:

(warm up to 60 °C 10 minutes prior to program initiation)  
starting temperature 60 °C  
+ 4.0 °C per minute increase for 60 minutes (to 300 °C)  
hold 300 °C for 5 minutes  
(cool down)

2014 - 2015, dimensions variable

## 1b.

### *Negative Air*

Airborne vaporized materials produced by 1a. are re-collected by an Omniaire 600V negative air machine with an activated carbon filter. The separated and volatized compounds are re-condensed onto the filter in the original ratio of the mixture prior to diffusion, transporting the formulation from one location to another within the space. All vaporized materials are collected onto the filter throughout the exhibition and the filter consists of the overall average of the component molecules of all vaporized formulations.

2013 – 2015, dimensions variable; flow rate 600 cfm

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\* See vaporization schedule or enquire with the gallery for information on vaporized substances

† OMH60-S HERATHERM Advanced Protocol Security Trockenschrank mit Sicherheitsausstattung, Edelstahl-Außengehäuse, Umluft, 62 l, 50 bis 330 °C

## 2.

[(+) / (-)] (*cleaner*)

2 enantiomerically opposite cleaning solutions

2013 - 2014, dimensions variable; 10 L displayed for each formulation

Cleaning schedule:

(+) optically active version: one hour before opening, once per week on Mondays at 12 pm for all surfaces in the northeast wing of the gallery; one hour after closing for all surfaces of the northwest wing of the gallery

(-) optically active version: one hour before opening, once per week on Mondays at 12 pm for all surfaces in the northwest wing of the gallery; one hour after closing for all surfaces of the northeast wing of the gallery

Optically active ingredients of (+) (*cleaner*):

(+)-limonene  
(+)-pinene  
(+)-carvone  
(+)-menthol

Optically active ingredients of (-) (*cleaner*):

(-)-limonene  
(-)-pinene  
(-)-carvone  
(-)-menthol

(all other functional components of the mixture are achiral)

### 3.

*Fruit Intersection Average: (Apple ( ) Pear)*

Propyl acetate, butyl acetate, isoamyl acetate, 1-butanol, pentyl acetate, 2-methyl-1-butanol, hexyl acetate, 1-hexanol, hexyl butanoate

*Fruit Intersection Average: (Pear ( ) Banana)*

Propyl acetate, 2-methylpropyl acetate, butyl acetate, 2-methyl-1-propanol, isoamyl acetate, 1-butanol, hexyl acetate, 3-methylbutyl 3-methylbutanoate

*Fruit Intersection Average: (Banana ( ) Apple)*

Ethyl acetate, 2-methylpropanol, 1-butanol, 2-methylpropyl acetate, hexanal, butyl acetate, (E)-2-hexanal, 2-methylpropyl butanoate, butyl butanoate, hexyl acetate, 3-methylbutyl butanoate, 1-hexanol

2013 – 2014, dimensions variable; 5 litres of each formulation displayed

### 4.

(-)

Enantiomerically<sup>‡</sup> opposite formulation of Coca-Cola™ soft drink, e.g all the components of Coca-Cola™, with reversed chirality, reassembled in identical proportions to the pre-existing product:

[carbonated water (achiral), (-)-sucrose [hydrolyzed 50:50 (-)-glucose and (+)-fructose mixture], (-)-caramel color, E338 phosphoric acid (achiral), (-)-(natural and artificial flavors), caffeine (achiral)]

2012 – 2015, dimensions variable, 100 mL displayed

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<sup>‡</sup> a chemical mirror image; a spatially reversed 3-dimensional structure of a molecule having opposite optical activity in relation to plane polarized light, the same physical properties (e.g. boiling point and density), and differences in biological interaction with the chiral chemical structures of biological organisms

(N.B. – chemical substances such and water or caffeine which contain an internal plane of symmetry do not have a separate enantiomeric form—they are achiral and exist as the same form both forwards and backwards)