



Lavoisier Composites

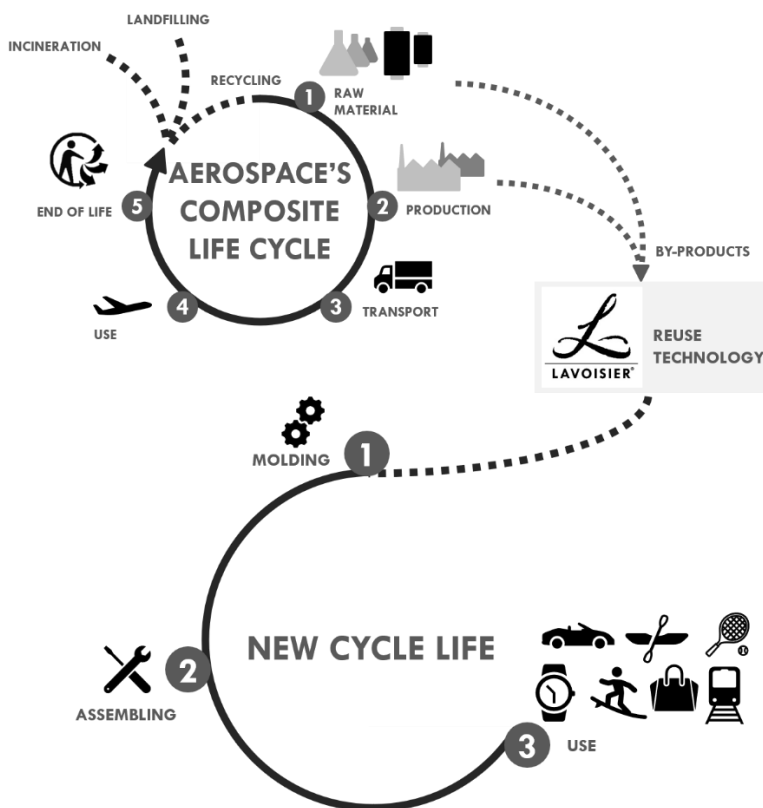
Reveal the best of matter and humans!

Concept & Activity

Lavoisier Composites source aerospace prepreg by-products and recovers them in their entirety in order to design composite parts with low environmental impact for aesthetic or structural applications.

Our know-how:

- **Research and development:**
 - Material science
 - Chemistry/ Formulation
 - Innovative materials and process development
- **Customized service:**
 - Part design assistance, mold conception and manufacture
 - Development of custom composite materials
 - Assistance and decision-making support
- **Sampling:**
 - Units production on standard mold
 - Pre-series (10-20 pieces)
 - Cutting and machining test
- **Production:**
 - Volume production of parts and preforms
 - Molds supply
 - Machining and grinding
 - Quality control



Carbonium® range

Composed of carbon fiber and aerospace grade epoxy resin, Carbonium® is labeled '1000 efficient solutions for the planet' by Solar Impulse Foundation. Thanks to adapted molding and surfacing operations, Carbonium® is available in several pigments, finishes and thicknesses, thus revealing its unique and iridescent veining.

Carbonium® Original



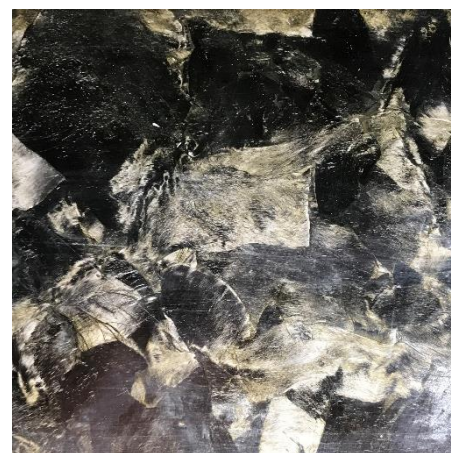
1 cm

Carbonium® Gold



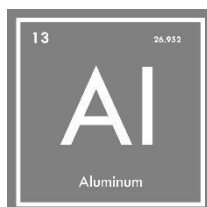
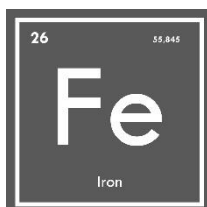
1 cm

Carbonium® Structure



1 cm

Comparison of average properties of a carbon SMC vs. metal



DENSITY

1,6

7,8

2,7

5 times lighter than steel and 1,7 times lighter than aluminum

SPECIFIC STRESS (MPa)

300/1,6=188,7 | 400/7,8=51,3 | 90/2,7=33,3

SPECIFIC MODULUS (GPa)

50/1,6=31,4 | 210/7,8=26,9 | 69/2,7=25,6

At equivalent mass, 1,2 times stiffer than aluminum and 3,5 times tougher than steel

LINEAR DILATATION COEFFICIENT ($\mu\text{m} \cdot \text{C}^{-1}$)

2,1

12

23

4,8 times more stable than steel and 10 times more stable than aluminum

Carbonium® is well suited for tough application because it does not corrode, is not very sensitive to chemical agents, is resistant to high temperatures, humidity and scratches.

Life cycle assessment* - Carbonium®

Global environmental footprint

50%

up to 50 % reduction in overall environmental impact on all criteria.

Climate change criterion

13 kg

13 kg of CO₂ saved per kg of Carbonium® used, i.e. 100km travelled in a standard car.

Energy consumption



72 kWh saved per kg of Carbonium® used, i.e. 72 washing machine cycles.

* Full LCA performed by EVEA - Lyon using the "50/50" method to integrate half of the primary impact of the Carbonium® LCA by-products.

Comparison baseline of the study: BMC/SMC of equivalent performance sourced from virgin raw materials.

e-boutique



Samples of Carbonium® are available on demand on the e-boutique website

Lavoisier team



Esteban VILLALON – President
+33 6 82 93 00 28



Guillaume LOISEAU – Managing director
+33 6 70 89 56 75



Agathe BOUVARD – R&T Engineer
+33 6 20 34 45 24



Baptiste GAUMOND - R&T Engineer / PhD
+33 6 20 34 82 48

Contact

bonjour@lavoisier-composites.com

Location of Lavoisier Composites
10 Rue Ampère, 69680 Chassieu France

