

ARKEMA, UN LEADER DES MATÉRIAUX DE SPÉCIALITÉS

ATELIER « MATERIAUX COMPOSITES ET
SOLUTIONS DURABLES : DE LA
CONCEPTION À LA FIN DE VIE »

LES TECHNOLOGIES DE RECYCLAGE, DE
VALORISATION ET DE TRANSFORMATION
DES MATERIAUX COMPOSITES

P.ESCALÉ

24 NOVEMBRE 2020



ARKEMA
INNOVATIVE CHEMISTRY



**NOTRE VISION :
DEVENIR UN
LEADER MONDIAL
DES MATÉRIAUX
DE SPÉCIALITÉS,
OFFRANT LES SOLUTIONS
LES PLUS INNOVANTES
ET DURABLES POUR RÉPONDRE
AUX BESOINS DE NOS
CLIENTS, AUJOURD'HUI
ET DEMAIN**

20 500
talents

11 200
en Europe

4 075
en Amérique du Nord

4 320 en Asie

905 dans le reste du
Monde



+ de
10 000
clients

Des
collaborations
avec les plus
grandes
marques
mondiales

**DES FEMMES
ET DES HOMMES
AU CŒUR
DE NOTRE
DÉVELOPPEMENT**



~2 000
recrutements
chaque année

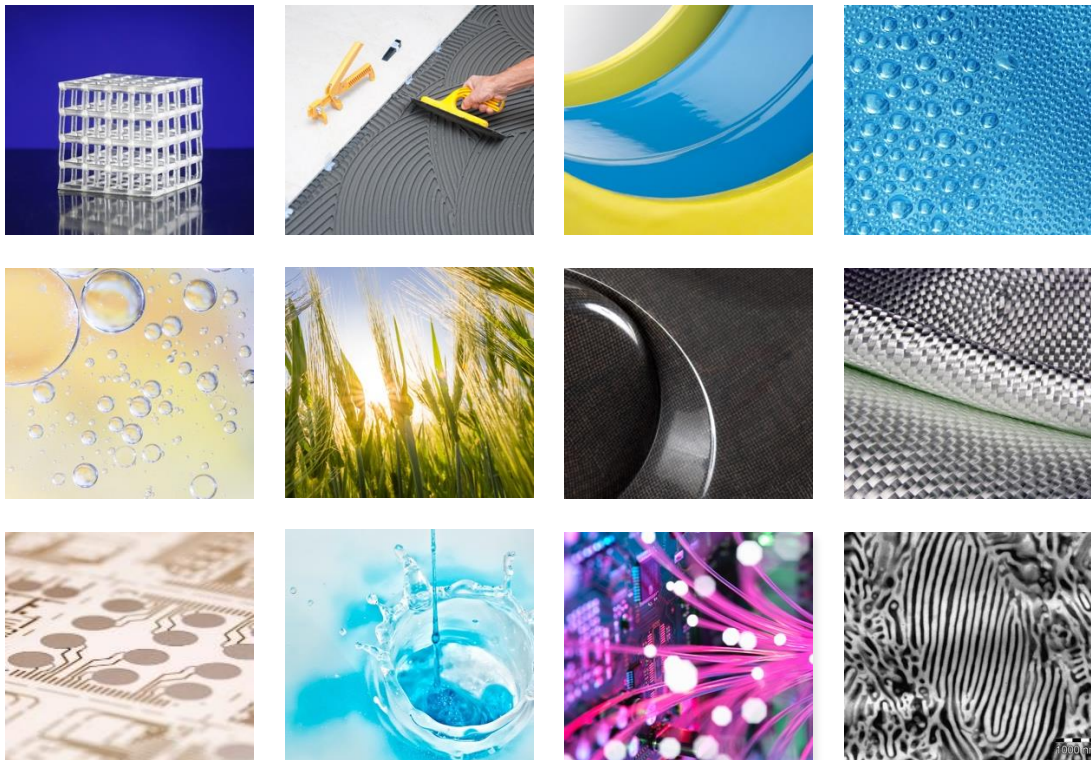


Présence dans
55 pays

144 usines

15 centres
de R&D

NOTRE SAVOIR-FAIRE UNIQUE EN SCIENCE DES MATÉRIAUX EST ORGANISÉ EN 3 SEGMENTS DE CROISSANCE, COHÉRENTS ET COMPLÉMENTAIRES



Adhésifs



Matériaux avancés

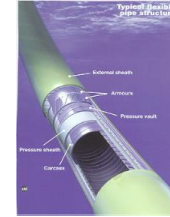


Matériaux de Spécialités



Coating solutions

ARKEMA'S OFFER FOR THERMOPLASTIC COMPOSITES



Woven Prepreg

Unitape

Towpreg

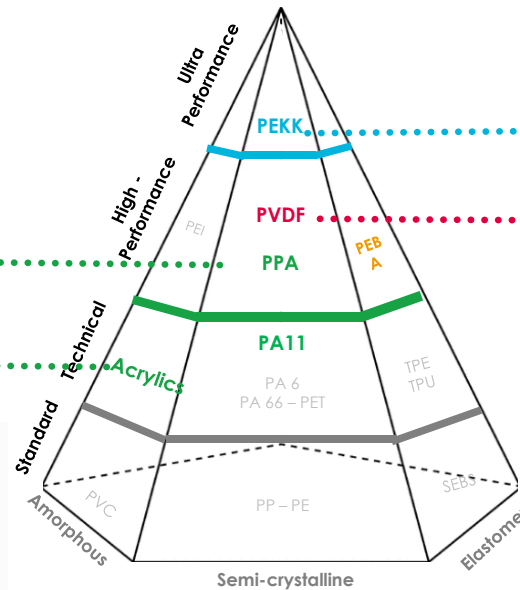


RILSAN
MATRIX
BY ARKEMA

- Carbon/PPA UD Tapes
- Main Market: Automotive

ELIUM
BY ARKEMA

- Liquid reactive acrylic resins
- Main Markets: Wind energy, Transportation, Building & Infrastructure, Sport & Leisure



KEPSTAN
BY ARKEMA

- PEKK powders for composite manufacturing (all markets)

Collaboration agreement
Carbon/PEKK UD tapes
for Aeronautics & Space.



ARKEMA/BARRDAY® JV
UD tapes for Oil and Gas.



KYNAR
BY ARKEMA

- PVDF powders for composite manufacturing (all markets).
- Carbon/PVDF UD Tape (all markets including Oil and Gas)

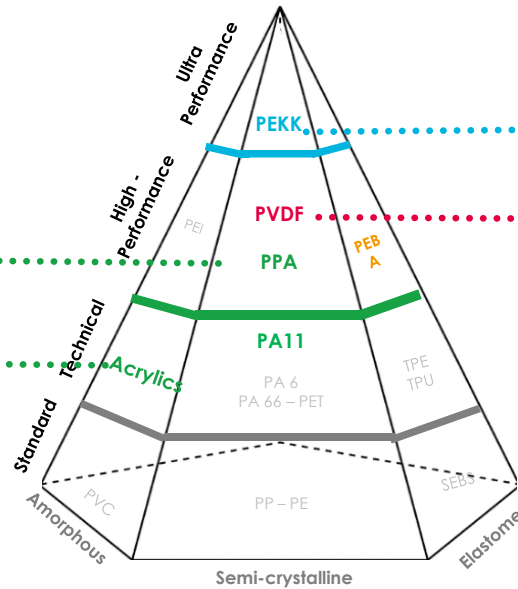
ARKEMA'S OFFER FOR THERMOPLASTIC COMPOSITES

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ELIUM® | A WIDE RANGE OF RESINS



Renewable energy

Elium® for Wind :

Elium® 188 O / 188 XO
Elium® 191 O/SA

Hand layup :

Elium® 351 SO

Pultrusion :

Elium® 591 / C595



Transportation

Room temp. process :

Elium® 158 O / 188 O
Elium® 151 O/SA

Fast RTM :

Elium® C195
Elium® C24

SMC :

Elium® MC1590 / 590



Building & construction

Pultrusion :

Elium® 591 / C595

Casting

Elium® C445



Sport & leisure & marine

Room temp. process :

Elium® 158 O / 188 O
Elium® 151 O
Elium® 191 O/SA

Fast RTM :

Elium® C195

Elium® resins offer two different options for recycling

❖ Mechanical Recycling : Compounding

- Composites parts made of Elium resin can be easily ground
- then compounded with a thermoplastic resin (ABS for instance)
- average performance of the ABS is enhanced by the recycled material

❖ Chemical Recycling : Depolymerization

- Elium resins have a unique capacity to be de-polymerized (unzipped) in quite favorable conditions
- The products from this recycling process are
 - Recycled monomer – fully ready to be reused in a new Elium resin production
 - Glass or Carbon fiber reinforcement



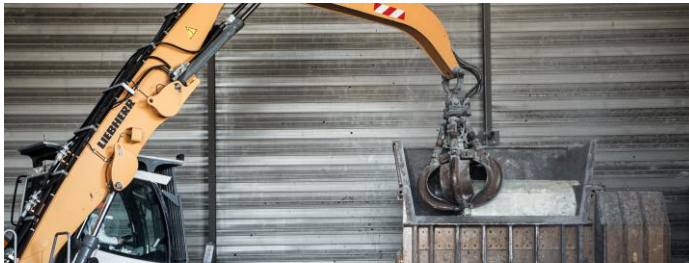
ELIUM[®] RESIN | CHEMICAL RECYCLING PROCESS



Reuse

Waste
conditioning

- Size reduction
- Grinding



Material treatment

- Thermolysis (350°C under N₂)
- Distillation



Fibers

Zero Waste Blade ReseArch - *Recherche sur les pales zéro déchet*

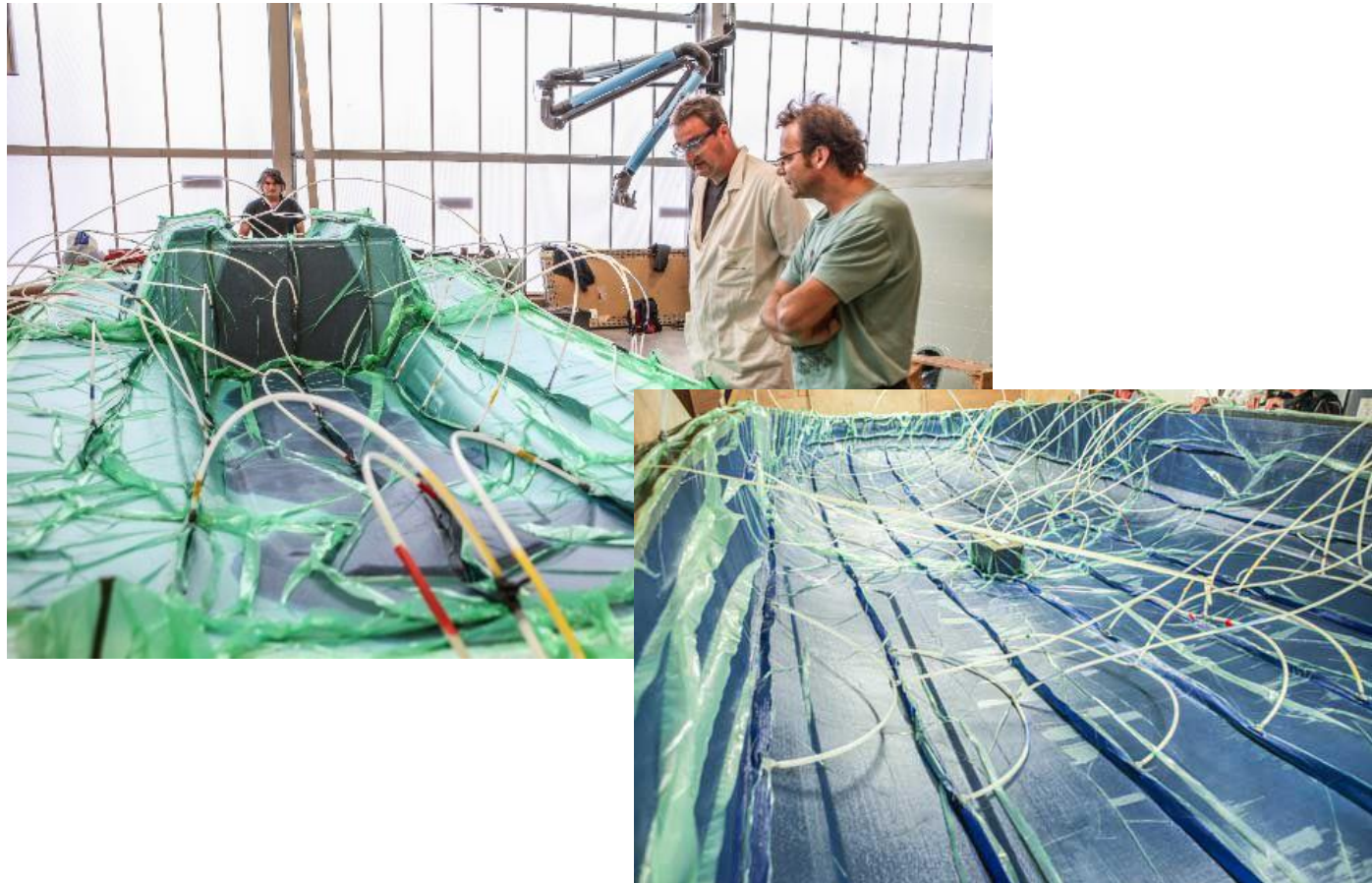


...du développement
des matériaux au
recyclage des pales
d'éoliennes en
passant par la
fabrication,
l'exploitation et le
démantèlement...

SPONSORING : UN GOÛT COMMUN DES DÉFIS

❖ The Mini 6.50, Arkema 3 : fully recyclable racing sailboat

- Carbon fibers reinforced easily processed Elium's resin sailboat hull and deck made by VARI at room temperature



SPONSORING : UN GOÛT COMMUN DES DÉFIS

LALOU
MULTI

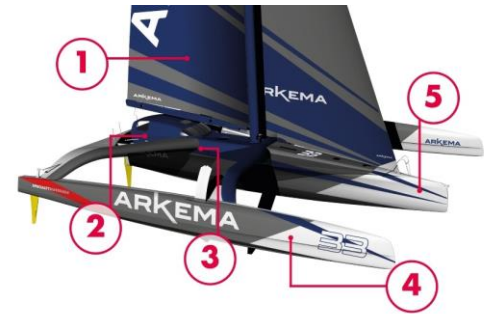
Voile : valorisation
de nos matériaux
et innovations durables

ARKEMA
SAILING



❖ The Multi 50 : ARKEMA 4

- ELIUM resin
- PMMA Altuglas® ShieldUp® Flex
- Bostik adhesives
- Kynar membrane for batterie



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INNOVATIVE CHEMISTRY