GuaTecS

The new natural latex
good for the planet & the people

Europe’s first guayule latex: scaling the biorefinery and valorizing co-products

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Midas

GUAYULE **INDUSTRIAL** STAKEHOLDERS (LATEX & RUBBER)

BRIDGESTONE

10,000 hectares by 2026

EnergyEne

GuaySS
GROWING GUAYULE IS OUR FUTURE...

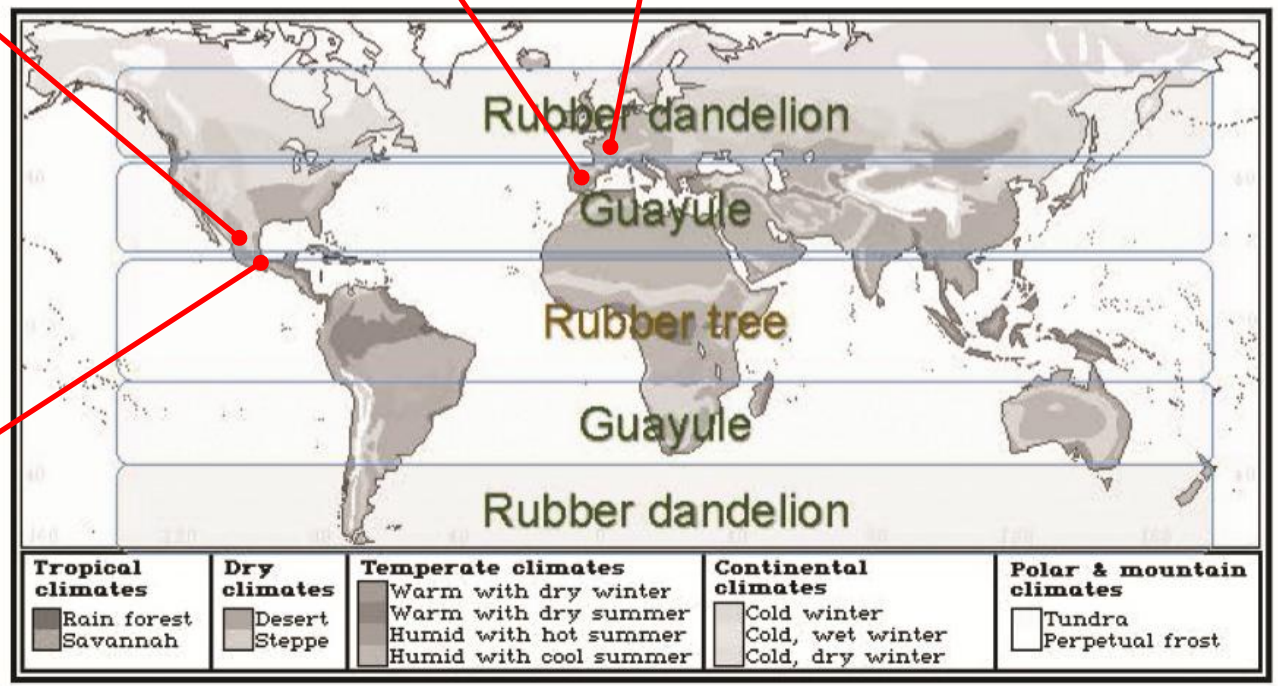


Figure 2. Global climate map, which indicates approximate geographical ranges of the Hevea rubber tree, guayule and rubber dandelion.

BRISGESTONE extraction unit

BRISGESTONE field

WHICH SUSTAINABLE AND PROFITABLE BUSINESS MODELS ?

- Increase agronomical & extraction yields
- Find niche market with highest market value ✓
- Progress in the value chain
- A bio-refinery strategy : co products valorization ✓

A UNIQUE INTEGRATED SOLUTION

Valorhiz

Guayule plantation player to supply non-food compete & climate-resilient biomass

GuaTecS

Biorefinery of guayule biomass, Green production & sales of high-performance bio-chemicals & bio-materials

Latex

Resin

Bagasse

Midas

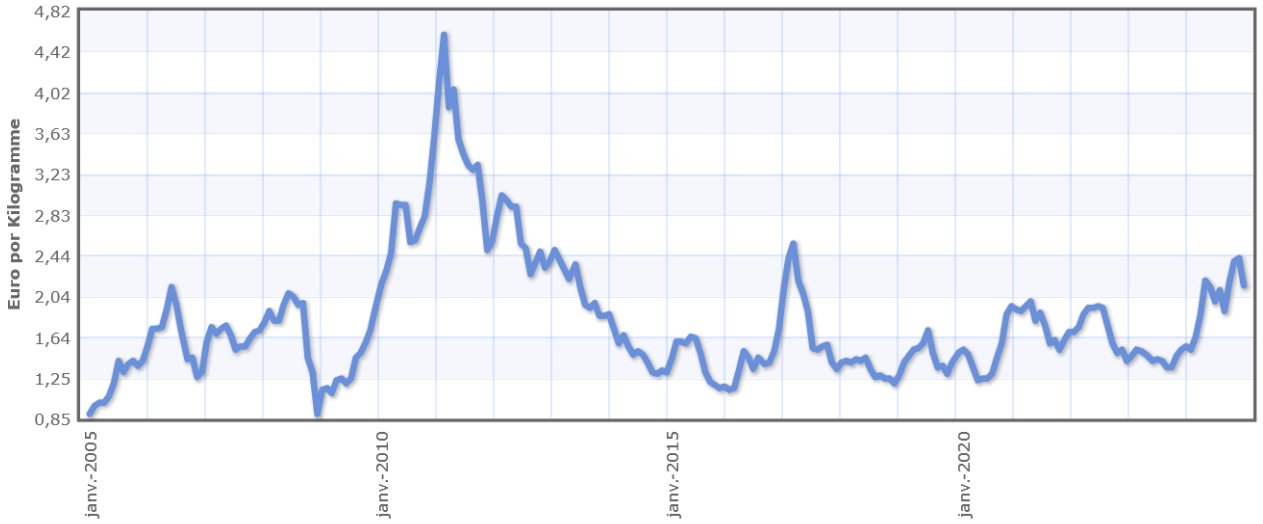
GuaTecs field

GuaTecs 1 kg/h extraction unit

GuaTecs latex

GUAYULE **LATEX** / **GLOVE** APLICATION

Polyisoprene lattices	hevea	guayule	synthetic
Allergenic aspect	--	+	-
Mechanical aspect	+	++	++
Supply chain sustainability	+/-	++	--
Price (€/kg)	**1,5**		**15**



Singapore stock exchange price

ASTM D1076-21

Category 1—Centrifuged *Hevea* natural latex preserved with ammonia only or by formaldehyde followed by ammonia.

Category 2—Creamed *Hevea* natural latex preserved with ammonia only or by formaldehyde followed by ammonia.

Category 3—Centrifuged *Hevea* natural latex preserved with low ammonia with other necessary preservatives.

Category 4—Centrifuged, or centrifuged and creamed, guayule latex, or other natural rubber latex, containing less than 200 µg total protein per gram dry weight of latex, with ammonia or other hydroxide, with other necessary preservatives and stabilizers.

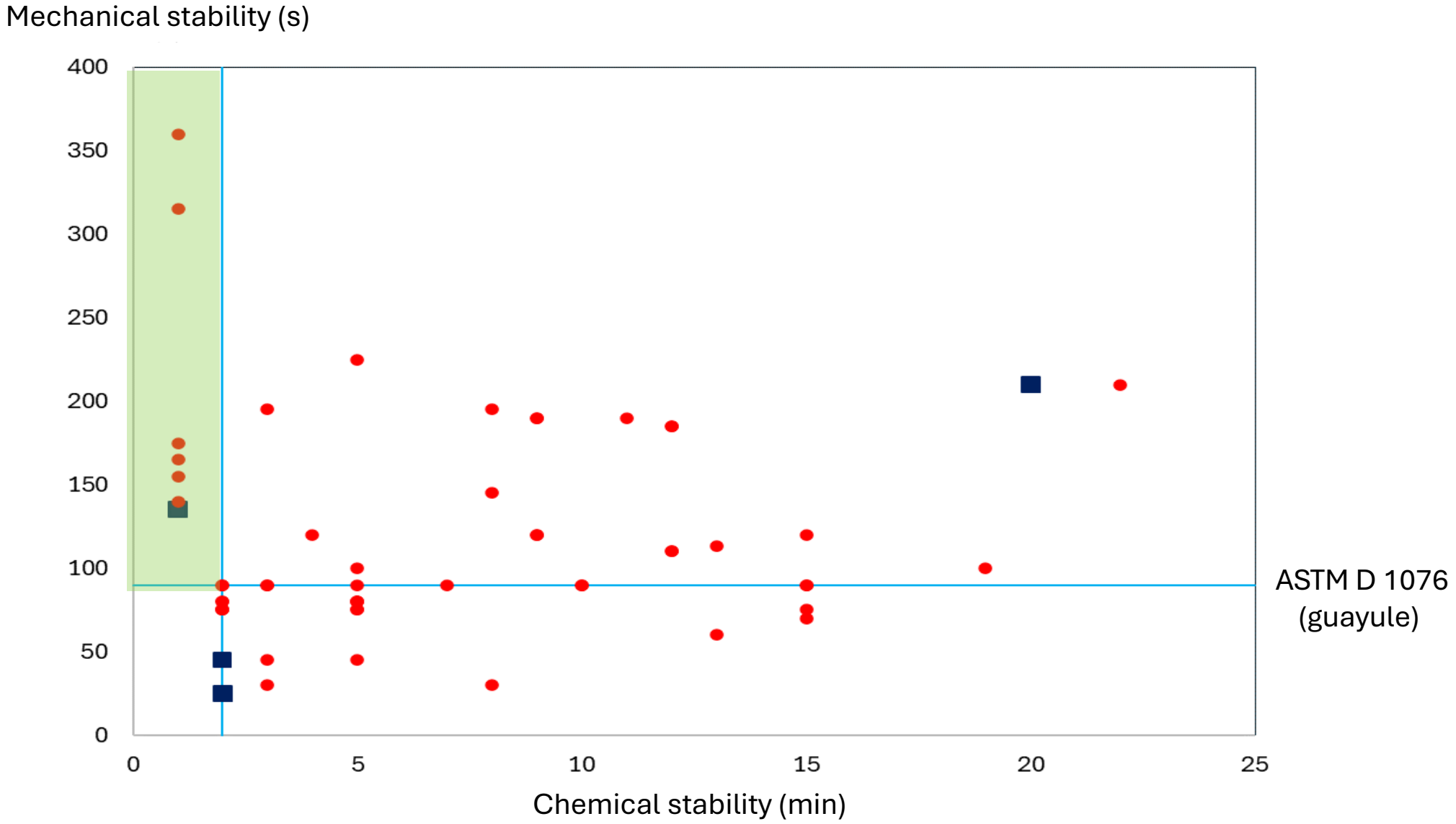
Category 5—Centrifuged Hevea natural latex treated with aluminum hydroxide or by other means, preserved with ammonia only or by formaldehyde followed by ammonia containing less than 0.5 % non-rubber content.

D1076 – 21

TABLE 1 Requirements for Specified Latex Categories

	Category 1	Category 2	Category 3	Category 4	Category 5
Total solids, min,%	61.3	66.0	61.3	44.0	61.3
Dry rubber content (DRC),[A] min, %	59.8	64.0	59.8	42.0	60.8
Total solids content minus dry rubber content, max,%	2.0	2.0	2.0	2.0	0.5
Protein content (µg/g dw latex)					
Total protein by D5712				200 max	
Hevea antigenic protein by D6499				None detectable	
Total alkalinity calculated as ammonia, as % latex	0.60 min	0.55 min	0.29 max	0.60 min	0.60 min
Or: total alkalinity calculated as KOH, as % latex				0.10 min	
Sludge content, max, %	0.10	0.10	0.10	0.10	0.1
Coagulum content, max, %	0.050	0.050	0.050	0.050	0.05
KOH number, max[B]	0.80	0.80	0.80	0.80	0.8
Mechanical stability, s, min	650	650	650	90	650
Copper content, max, % of total solids	0.0008	0.0008	0.0008	0.0008	0.0008
Manganese content, max, % of total solids	0.0008	0.0008	0.0008	0.0008	0.0008
Color on visual inspection		no pronounced blue or gray[C]			
Odor after neutralization with boric acid		no putrefactive odor			

GUAYULE LATEX STABILITY IMPROVEMENT



A NEW GLOVE TECHNOLOGY IS COMING !?

- More **comfortable** because thinner !
- **Safer** because hypoallergenic !
- More **sustainable** !

AND IT IS MADE OF GUAYULE LATEX

The only :

Natural, European,

Hypoallergenic

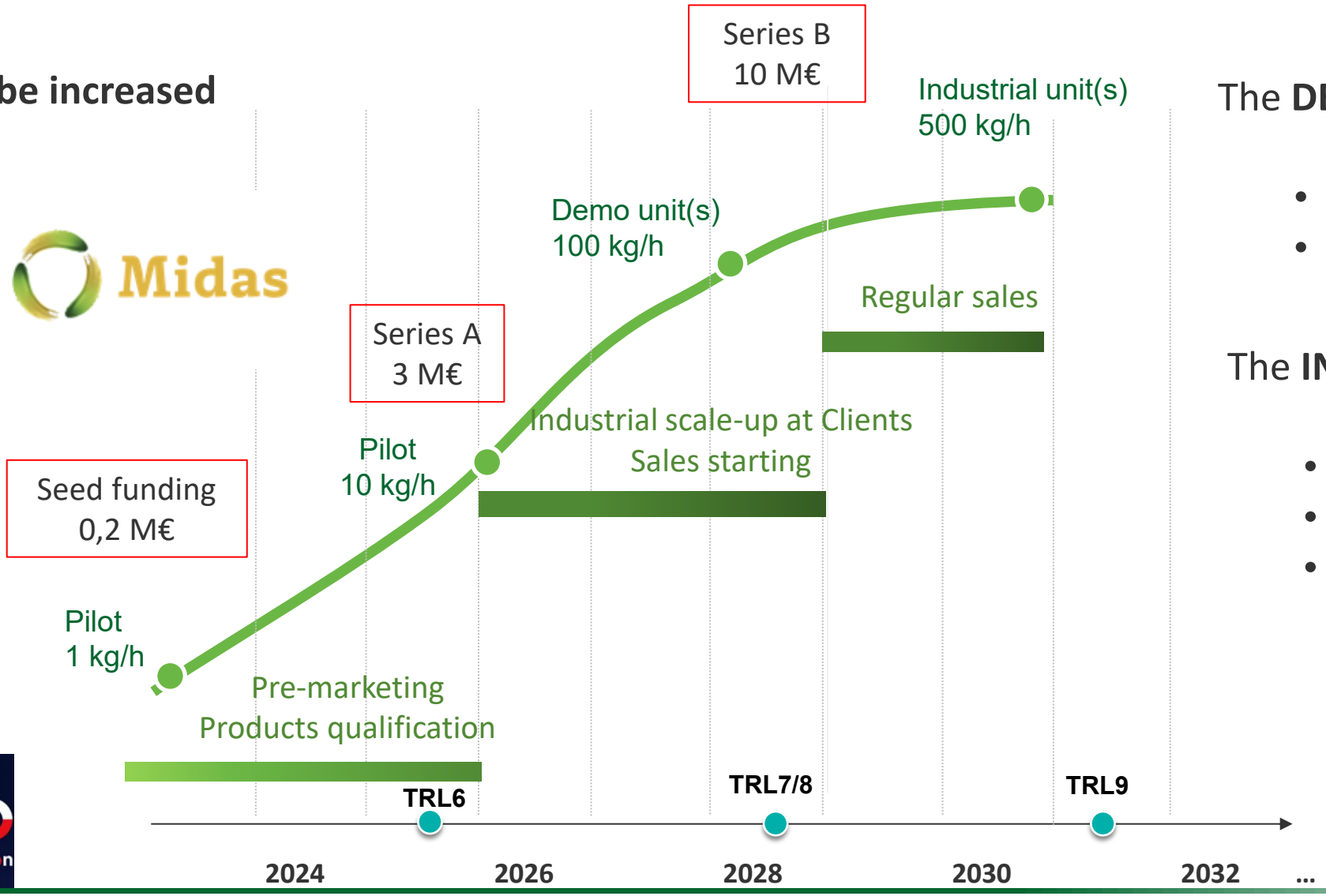
& Flexible Latex

GO TO MARKET STRATEGY

Product Value

TECHNOLOGY & INDUSTRIALISATION ROADMAP

QUALITY : OK
QUANTITY : to be increased



The **DEMO** target is:

- FR unit + 2 000 ha
- 2 M€ turnover

The **INDUS** target is:

- FR unit + 30 000 ha
- 60 M€ turnover / **EU**
- 25% margin

GOOD FOR THE PLANET & THE PEOPLE

- a global latex market of 12 B€ (TAM) with a **3-7% annual growth**
- a 7 B€ soft latex addressable market (SAM)
- & a **3.3 B€ high tech soft latex accessible market** (SOM)

- **sovereignty & reindustrialization**
- safer and more comfortable gloves

- alternative crop adapted to **climate warming & water shortage**
- **eco-extraction & bio-refinery** strategy, no waste


SOLAR IMPULSE
EFFICIENT SOLUTION LABEL

This certifies that

Guayule Latex

by

Guatecs

was attributed the Solar Impulse Efficient Solution Label following an assessment performed by external independent experts and based on verified standards.

May 2023

SOLARIMPULSE FOUNDATION

Bertrand Piccard
Chairman of the Solar Impulse Foundation