Como leer resultados de reometria y Viscosidad

Representaciones Gummy

Objetivos

- Asegurar la produccion de un mezclado conforme a lo especificado.
- Tratar de identificar variabilidad en el compuesto.
- Identificar a tiempo productos no conformes.

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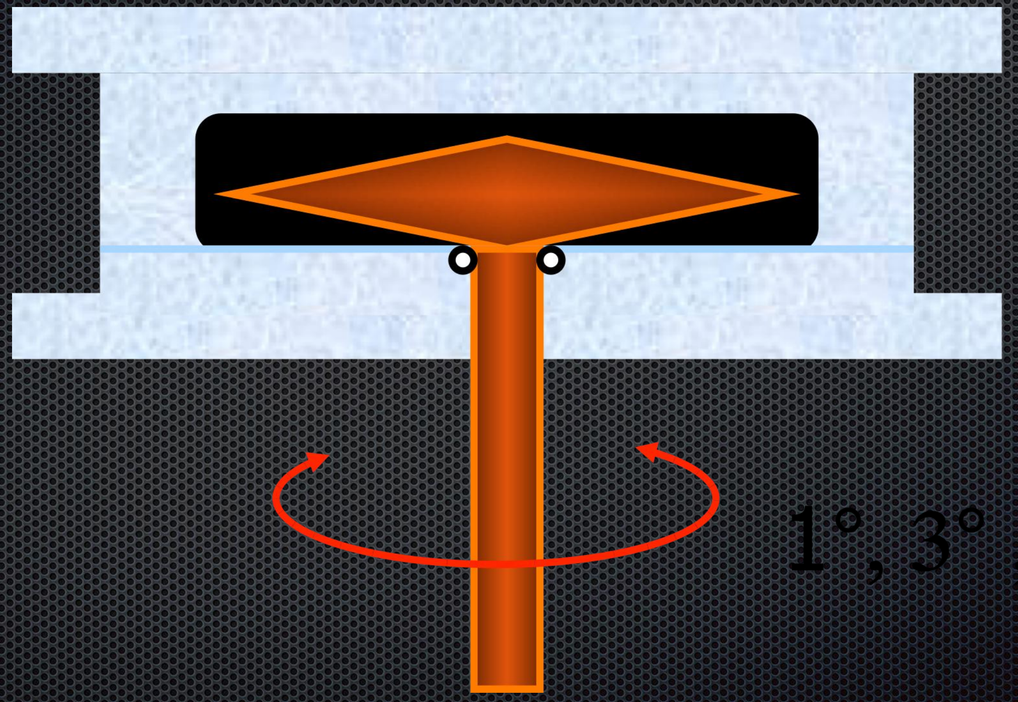
Reometría
Viscosidad

www.RepresentacionesGummy.com

COMO FUNCIONA?



1°, 3° ,5°

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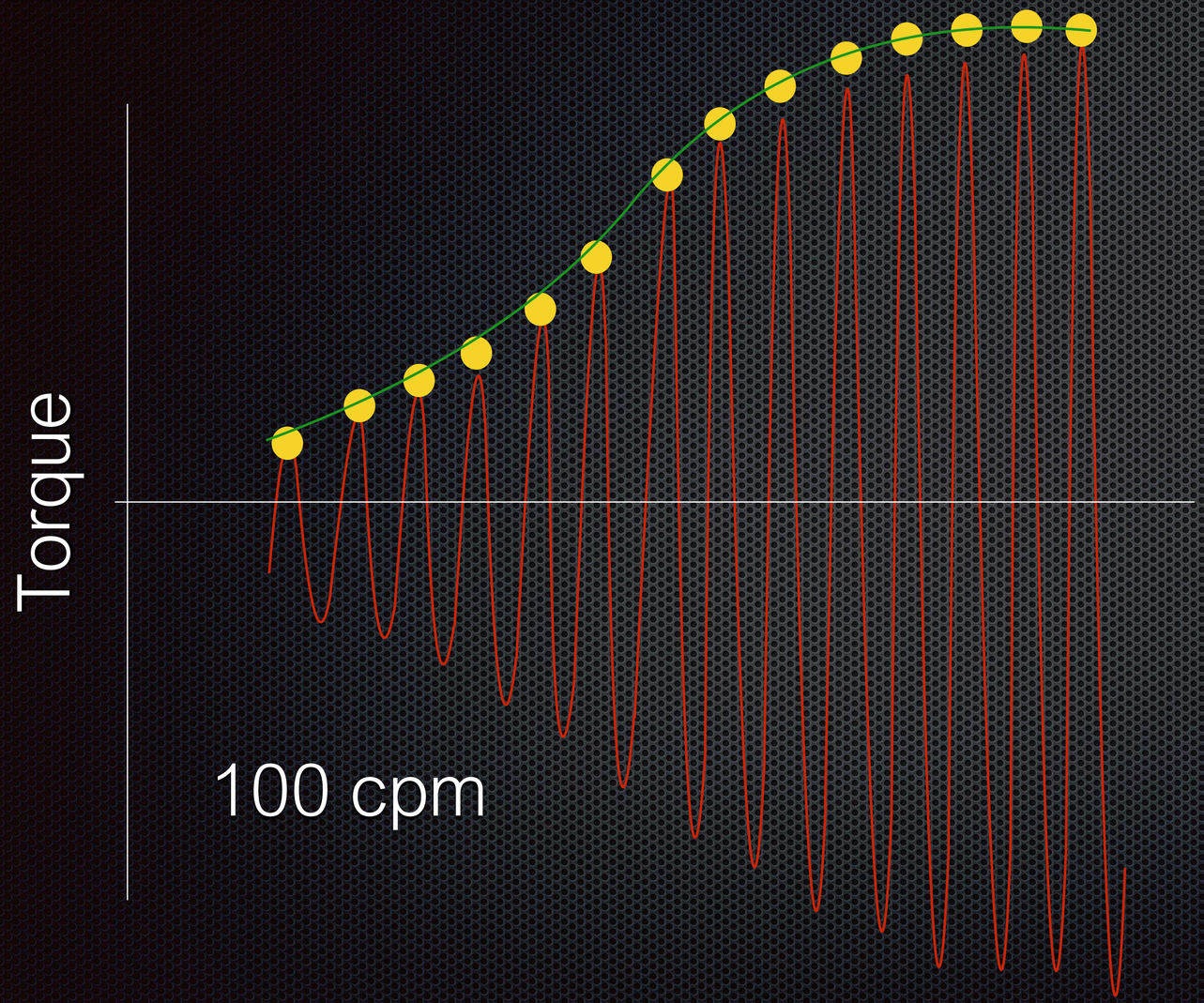
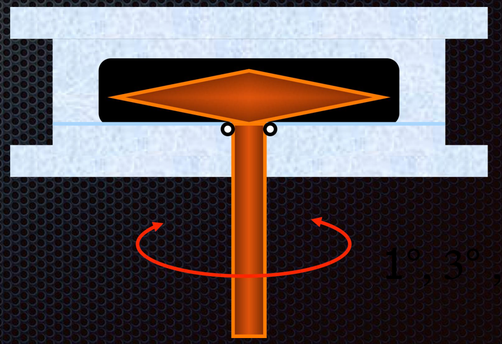
REÓMETROS DE DISCO OSCILANTE

"R100"

COMO FUNCIONA?





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- Propiedades:
  - **Reometría:**
  - Viscosidad:
  - Dispersión:
  - Tensión Elongación

R100-ODR

Normas:

ASTM D2084

Standard Test Method For Rubber

Property—Vulcanization Using

Oscillating Disk Cure Meter

Normas:

ASTM D5289

ISO 6502

Standard Test Method For Rubber

Property - Vulcanization Using

Rotorless Cure Meters

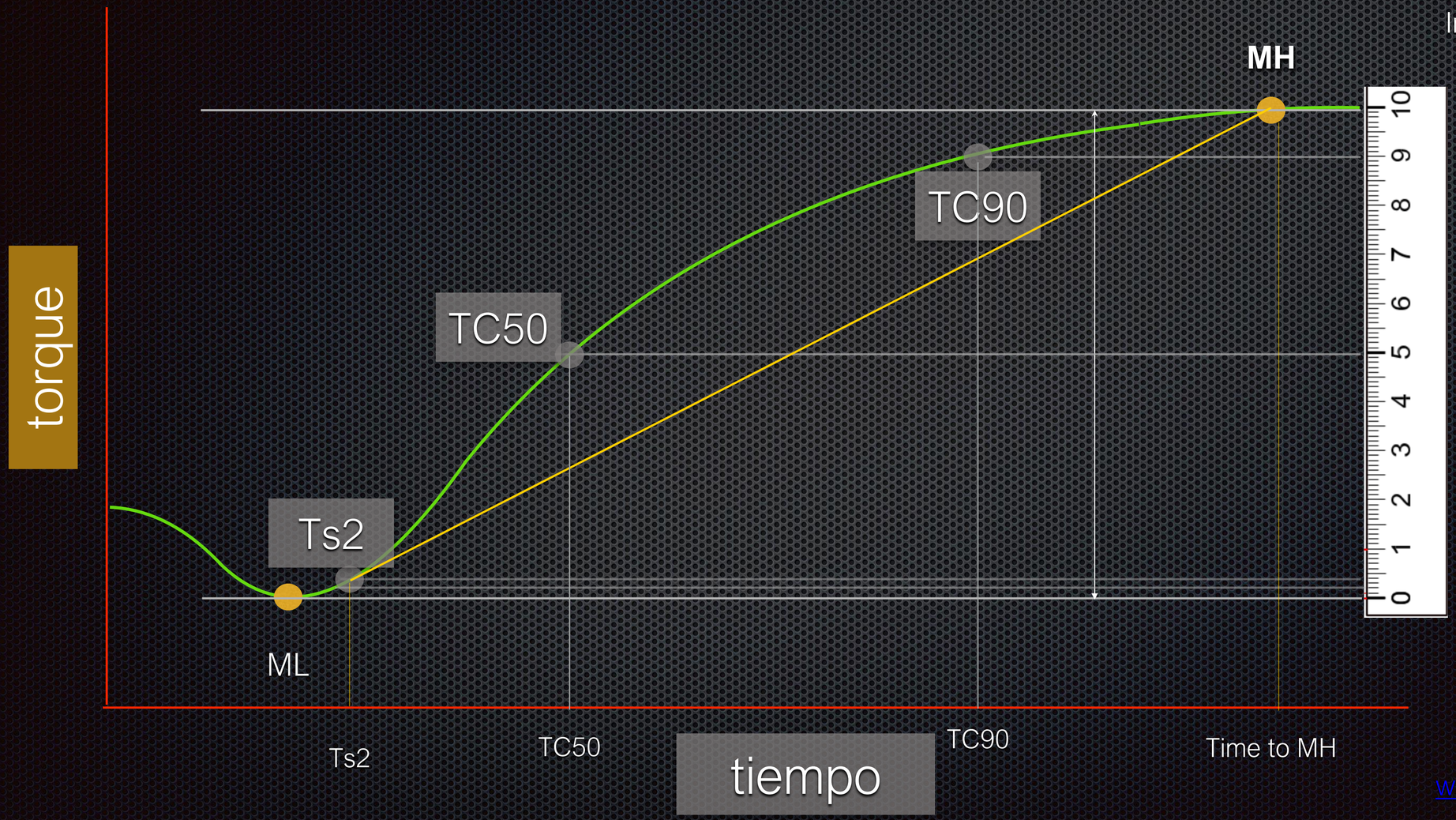
Measurement Of

Vulcanization Characteristics

Using Curemeters

PUNTOS ASTM D2084

Cure rate Index =100 / (-)



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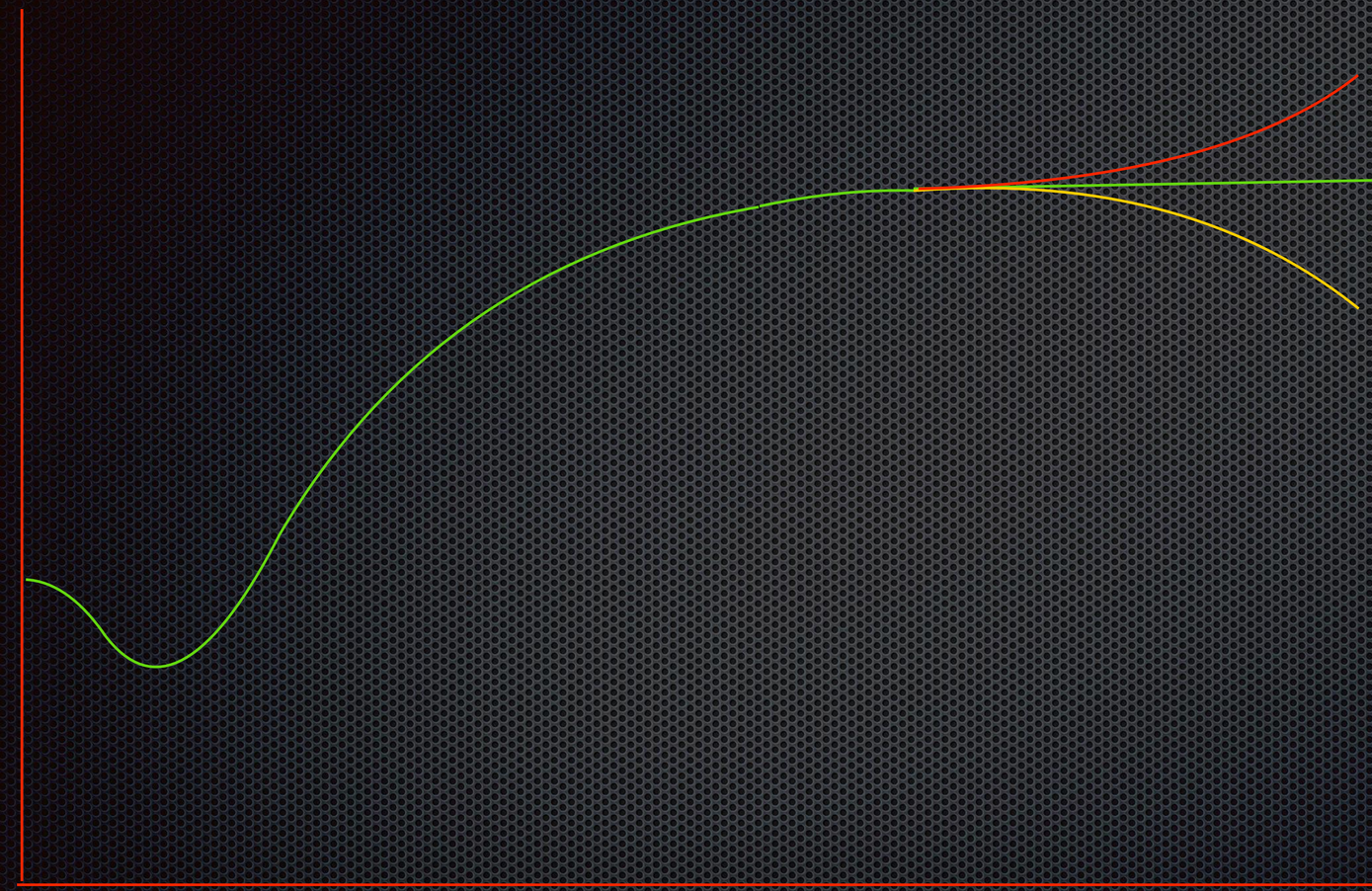
Tipos de curva Reometrica



MH Curva sin Max
Tipica del CR

MH_F Curva en Equilibrio
Tipica del SBR

MH_R Curva con Reversion
Tipica del NR

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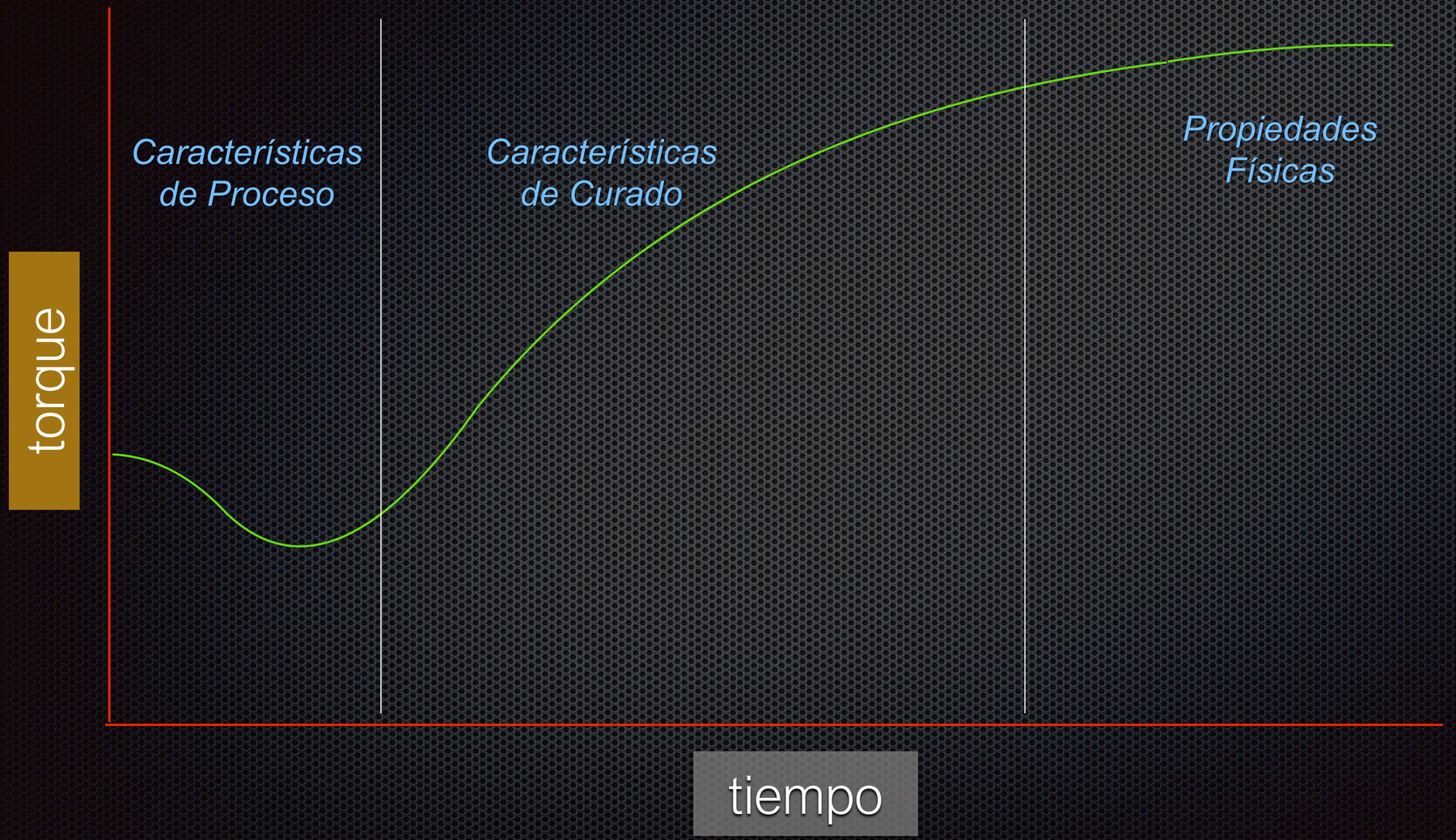
Curva Reómetro



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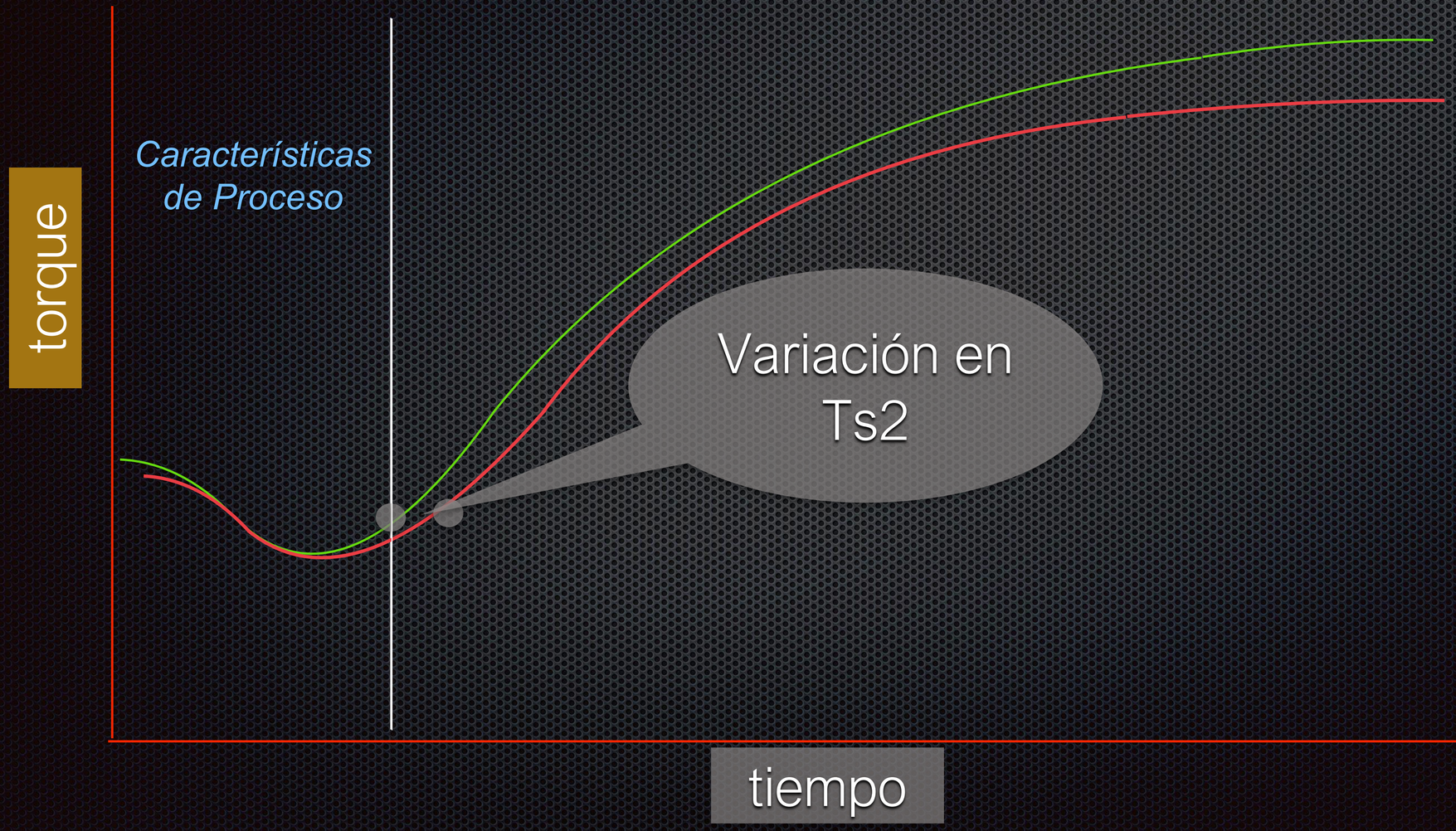
Características de Proceso

Variación en T_s2



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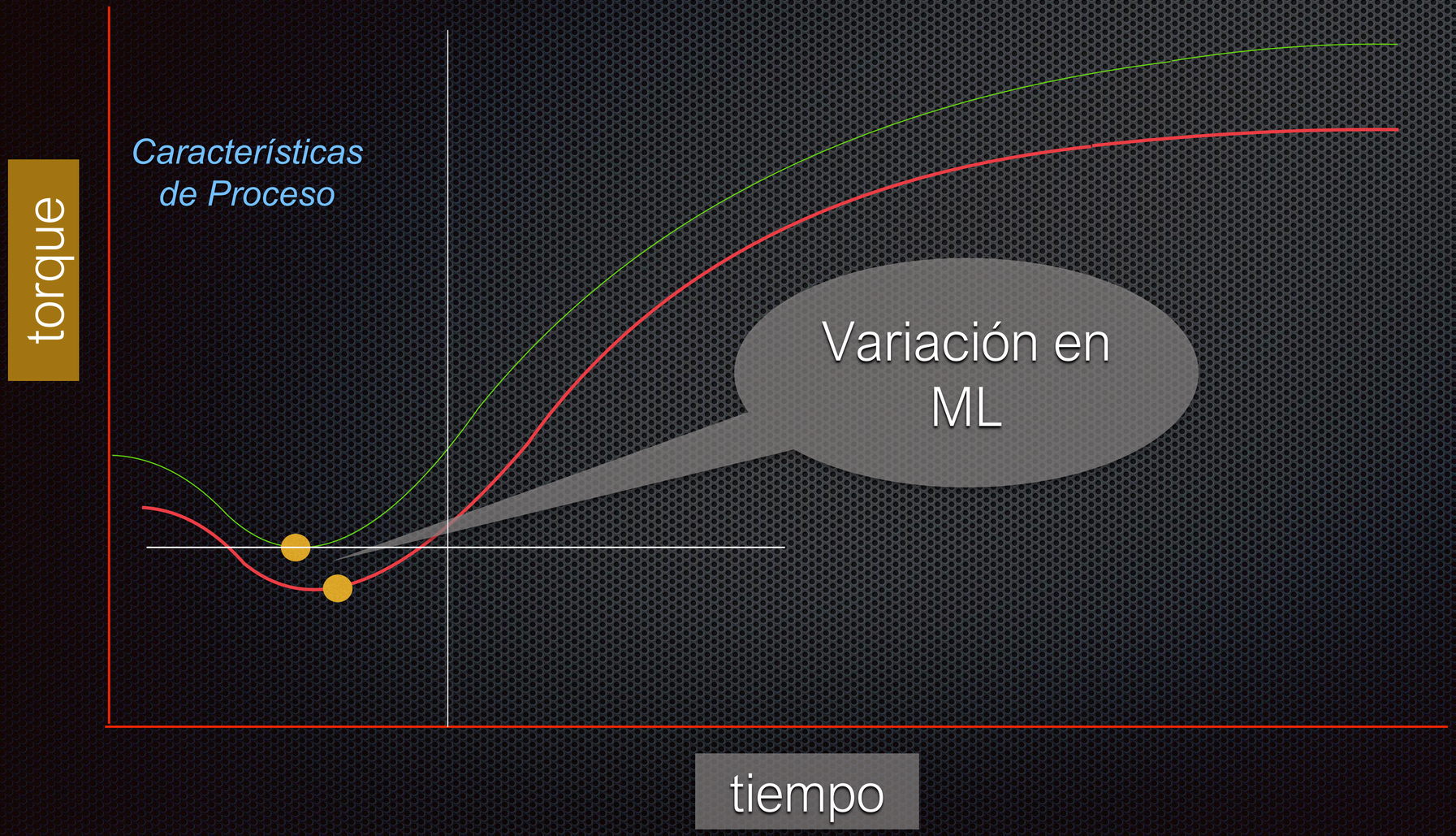
Características de Proceso
Variación en ML



Polimero	100	100
Carga	50	50
Plastificante	10	**15**
Sistema de Vulcanizacion	3.5	3.5
Sistema de Protección	5	5

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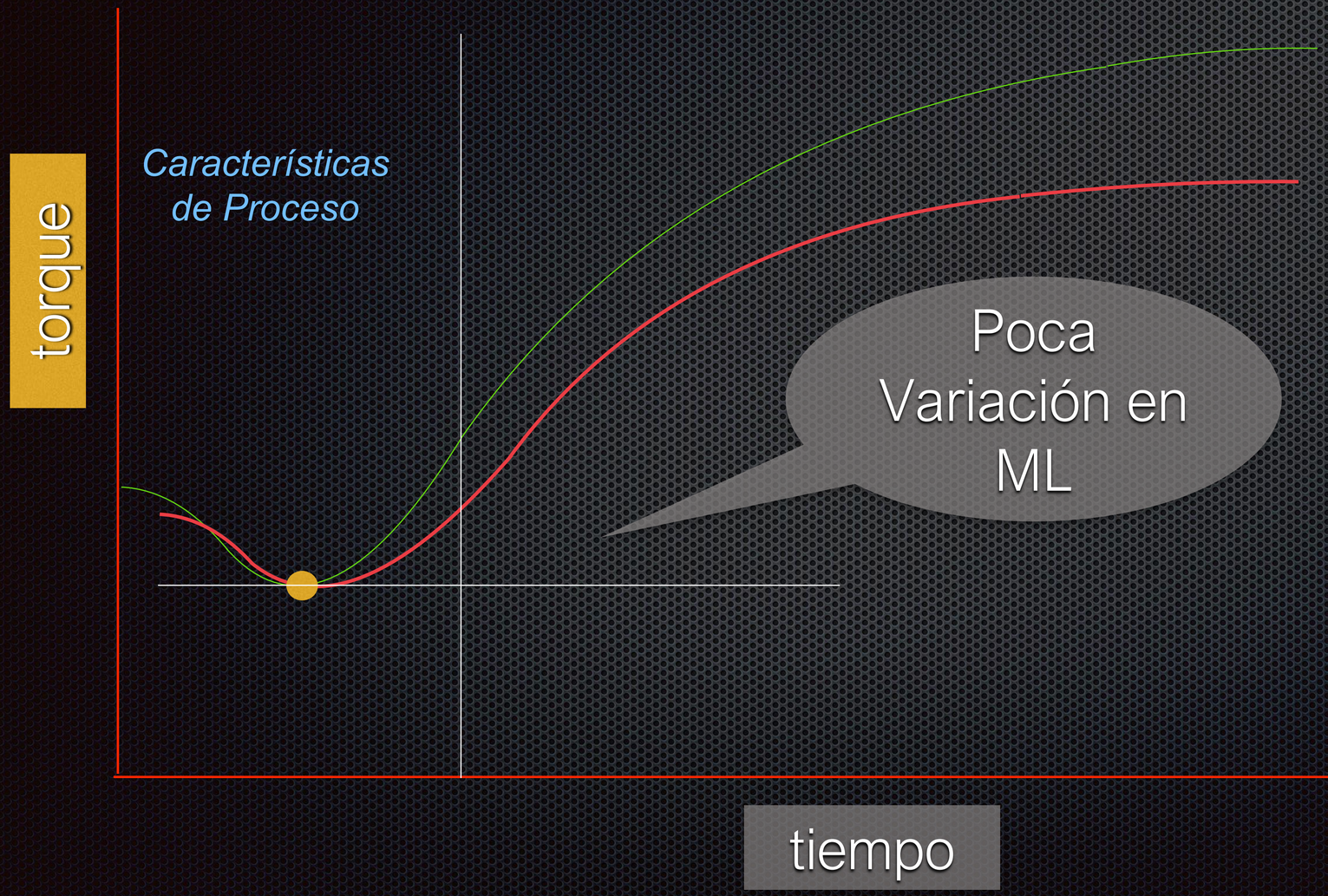
Características de Proceso

Variación en cantidad



Polimero	100	100
Carga	50	50
Plastificante	10	10
Sistema de Vulcanizacion	4.5	**3.5**
Sistema de Protección	5	5

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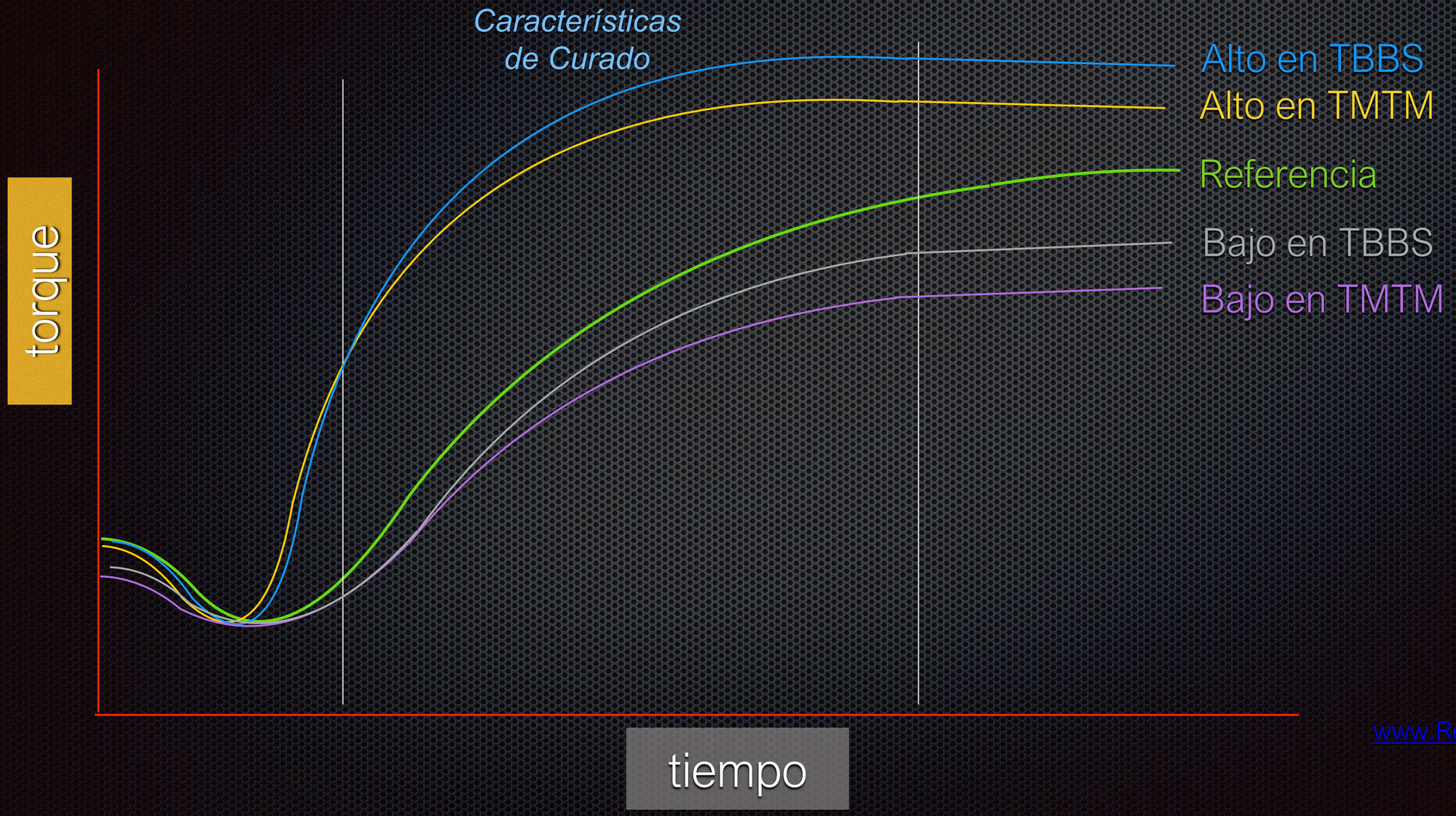
Características de Proceso



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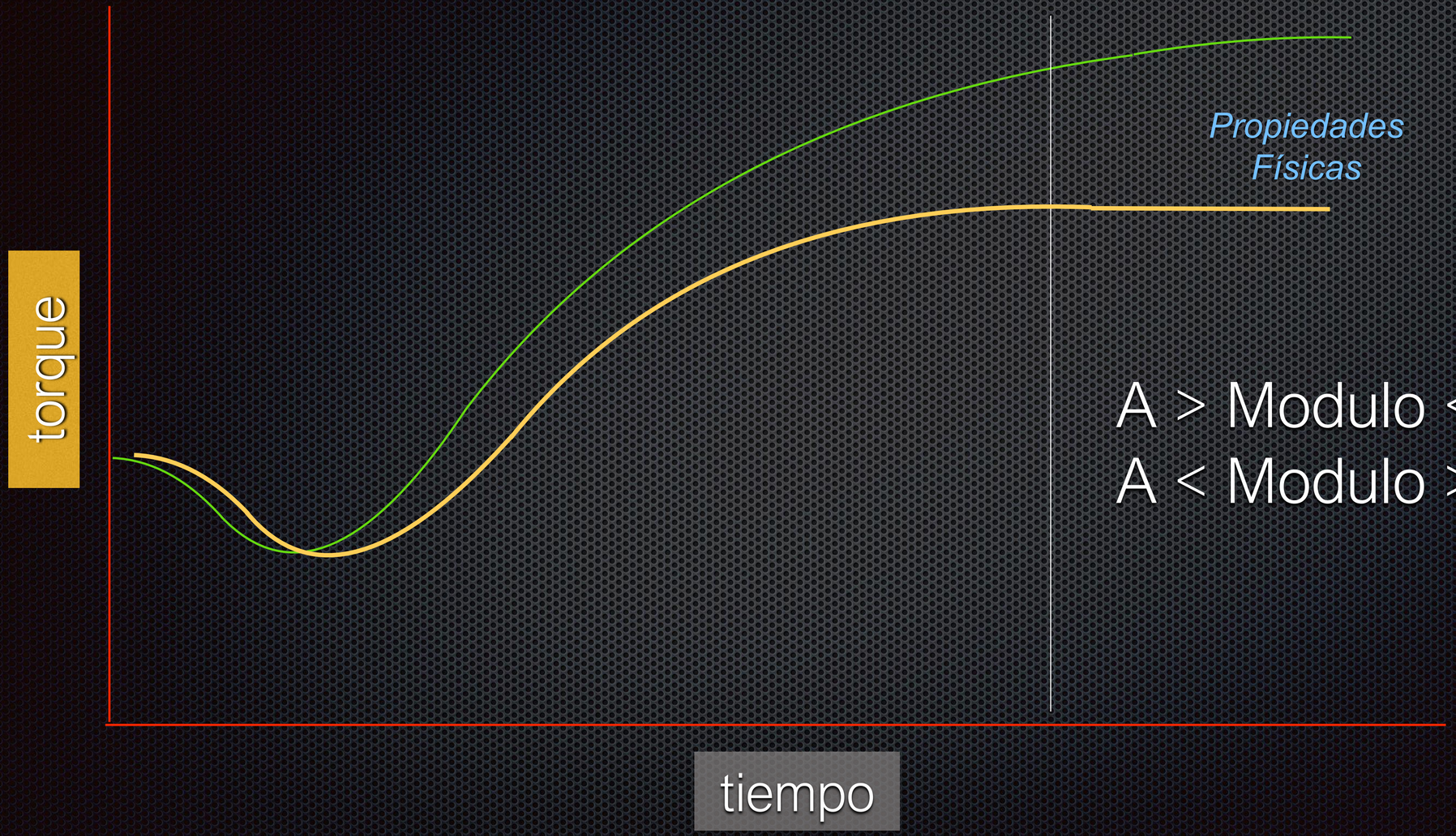
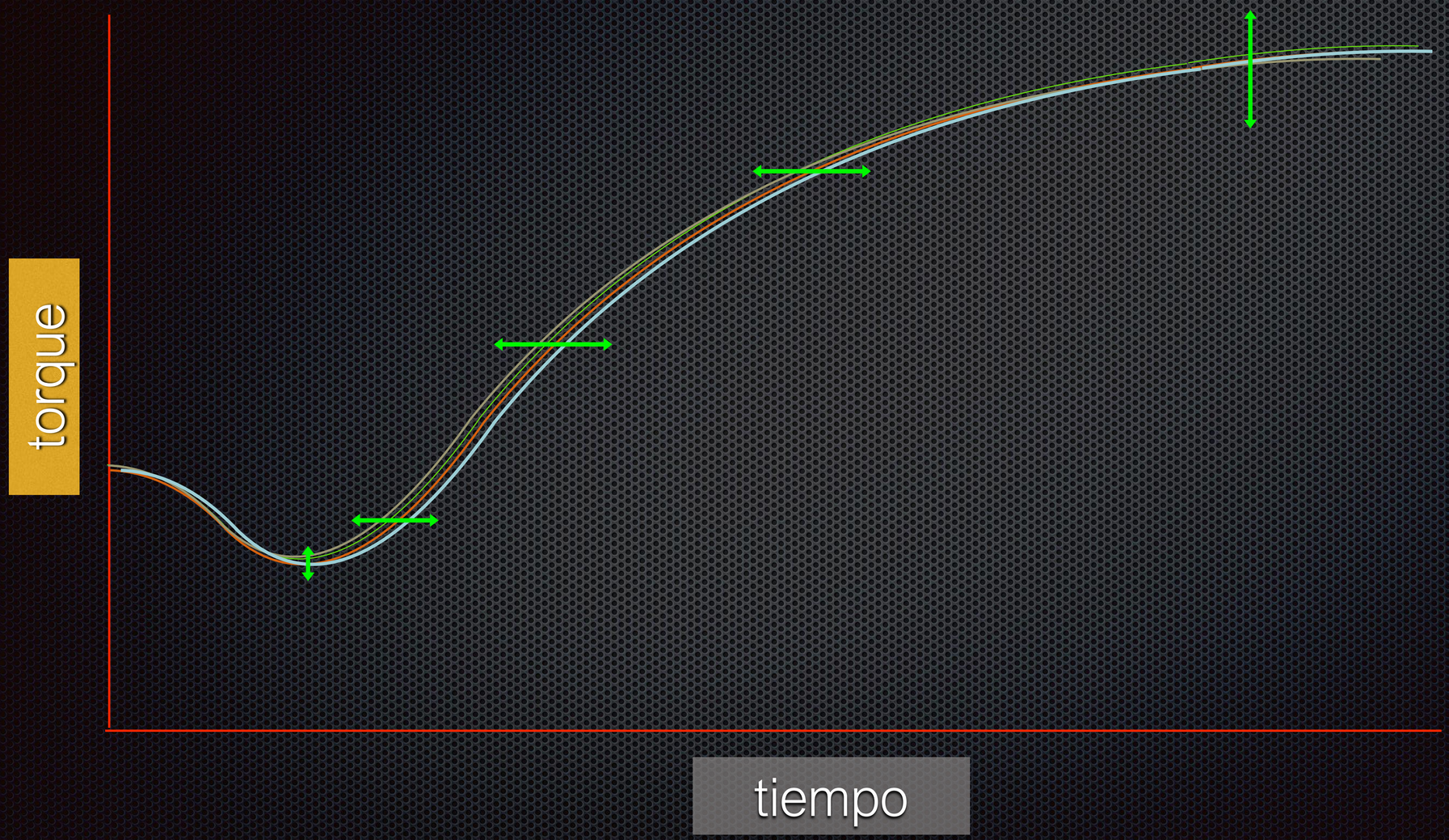
Características de Proceso



A > Modulo < Elongacion
A < Modulo > Elongacion

Proceso bajo control



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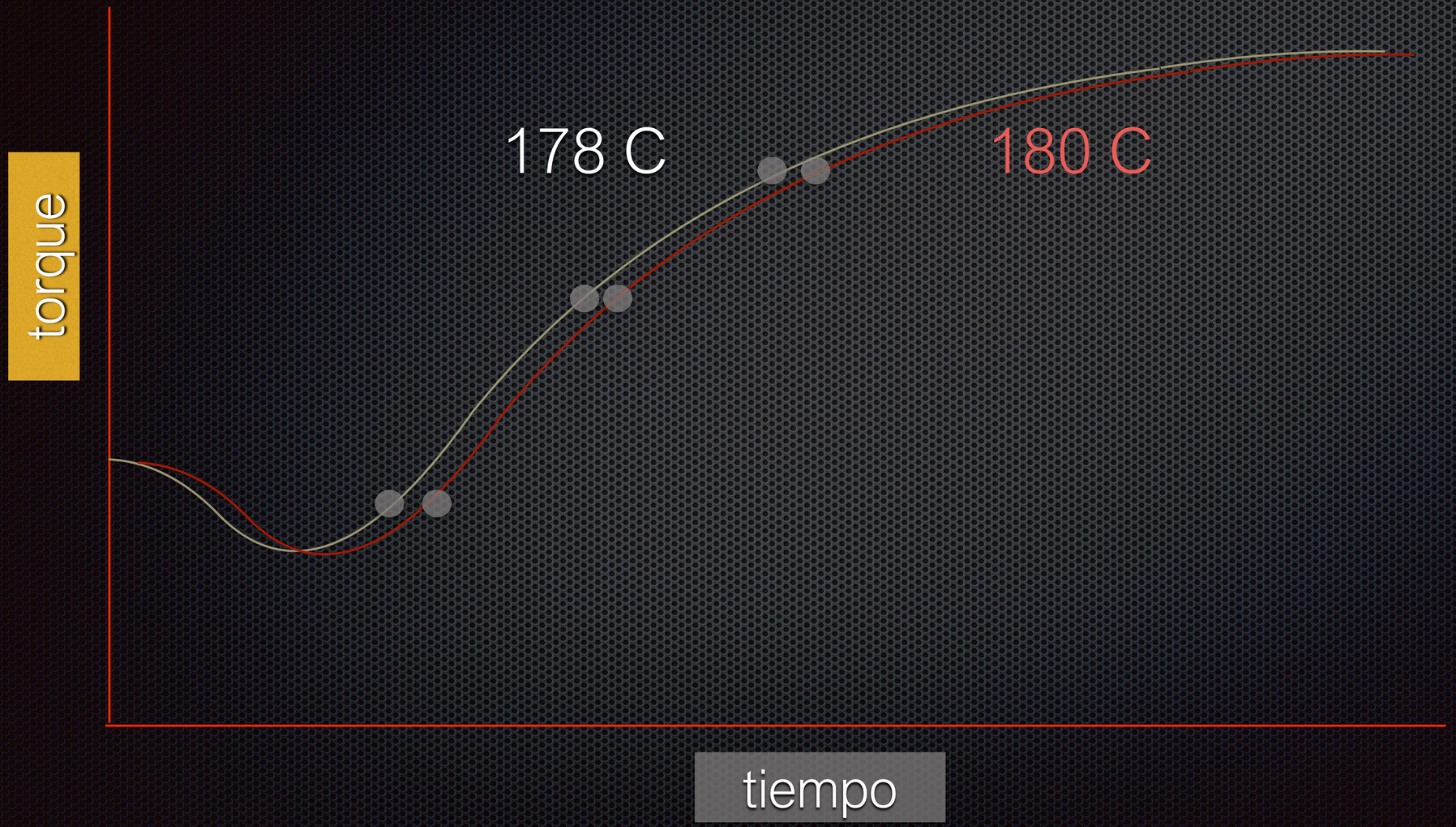
Efecto de la Temperatura

en Ts2, Tc50, TC90



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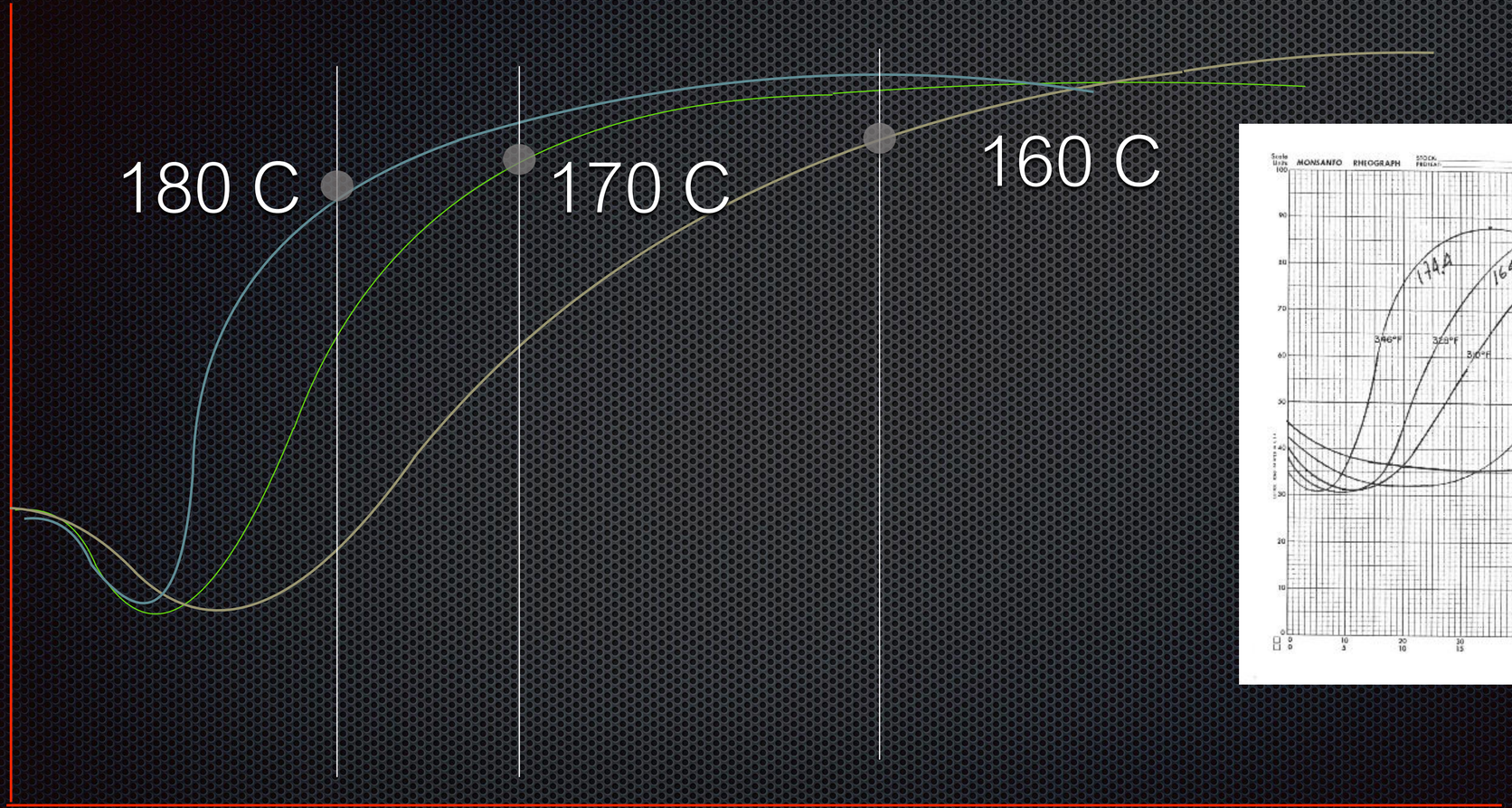
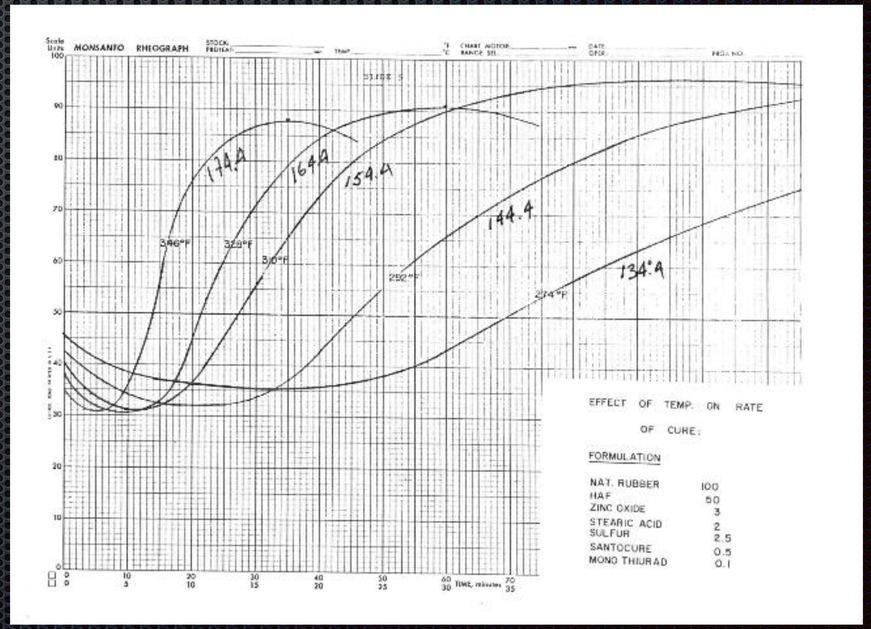
Efecto de la Temperatura en TC90





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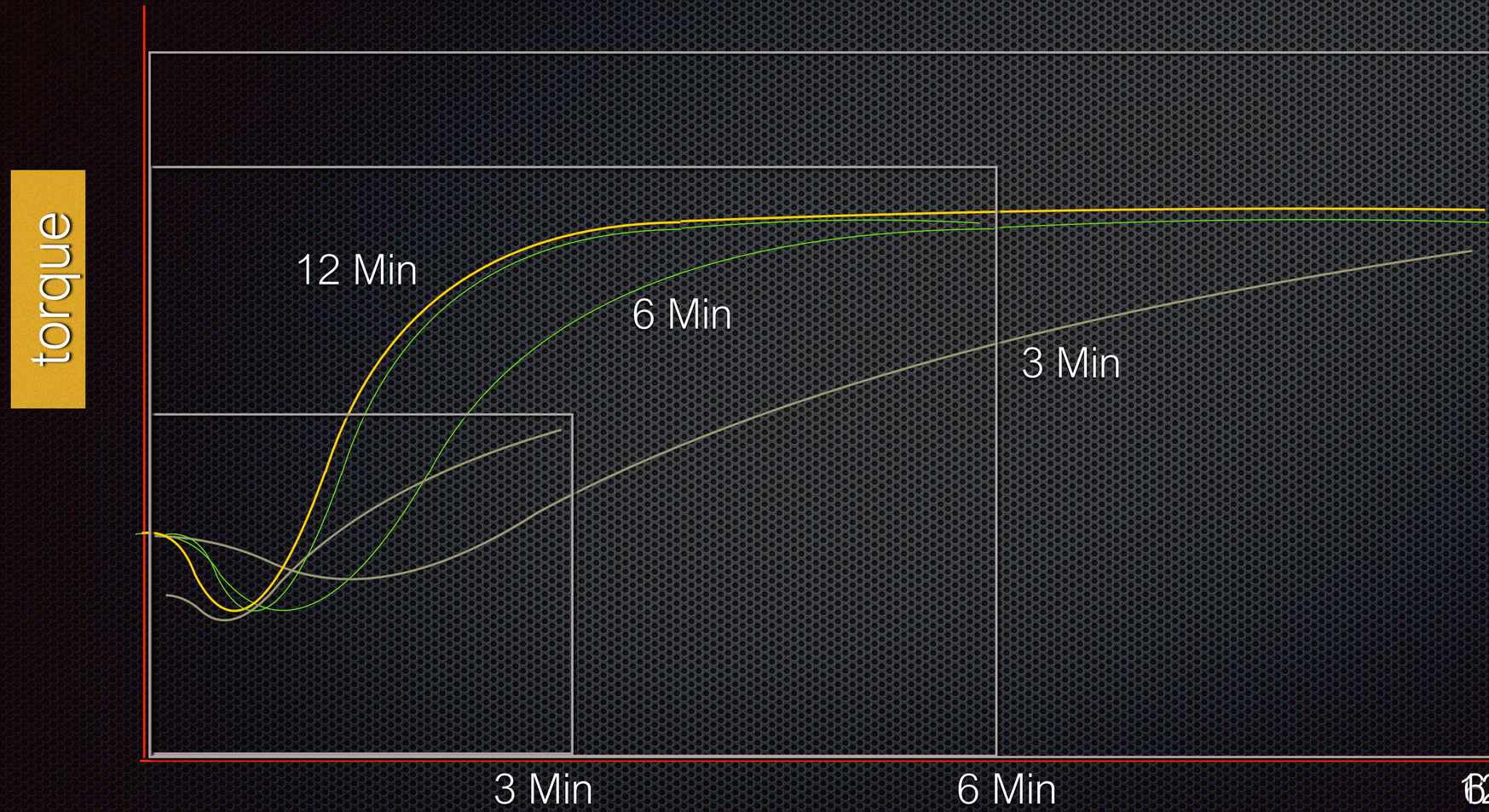
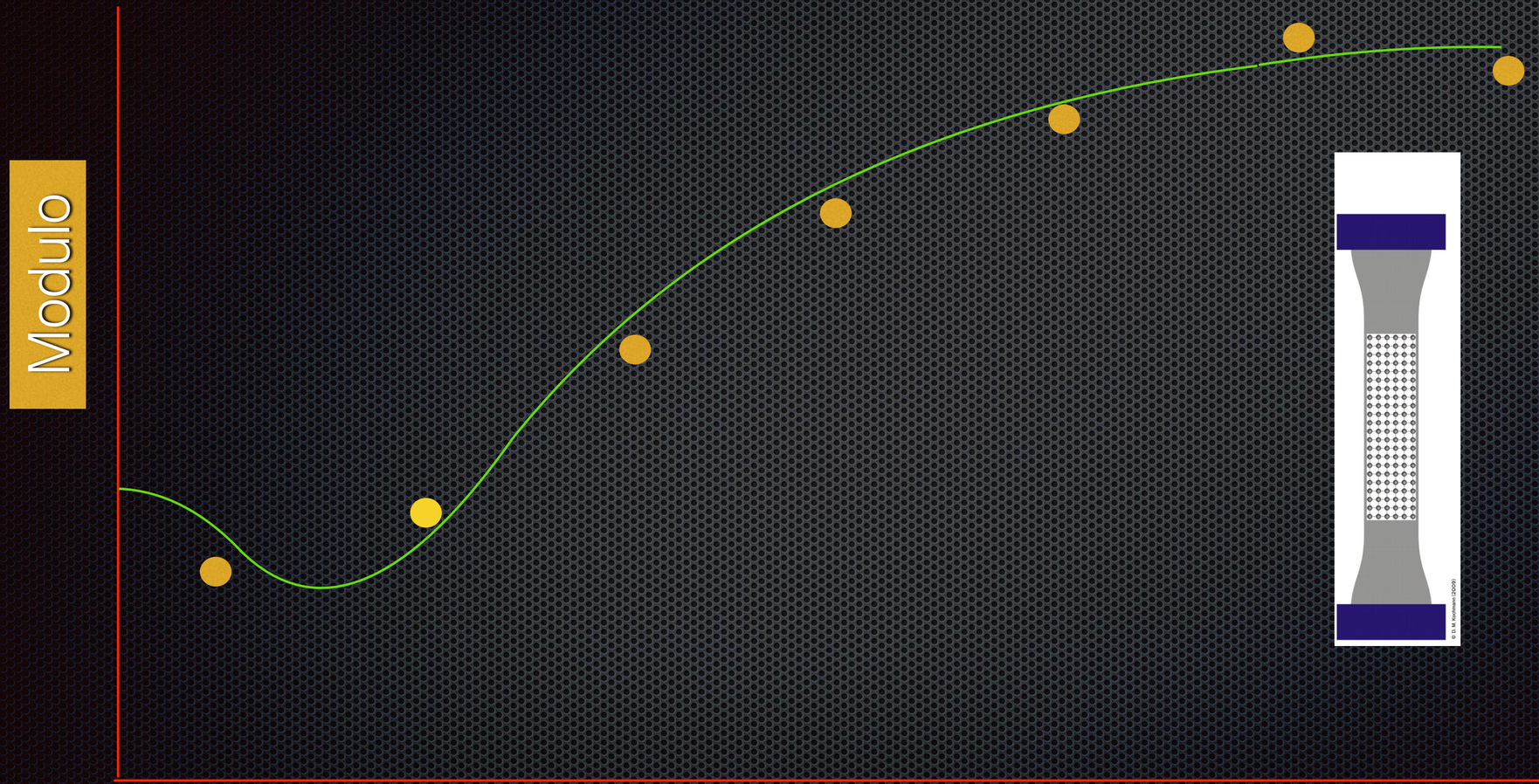
Efecto del tiempo del test



Correlación

el Modulo al 300%



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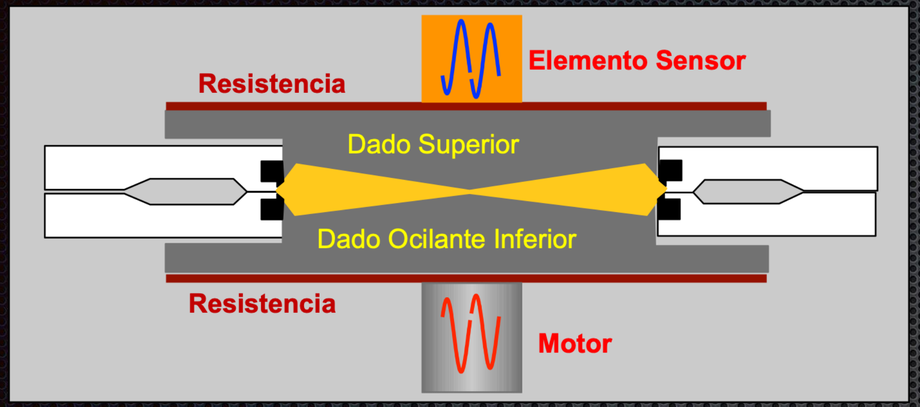
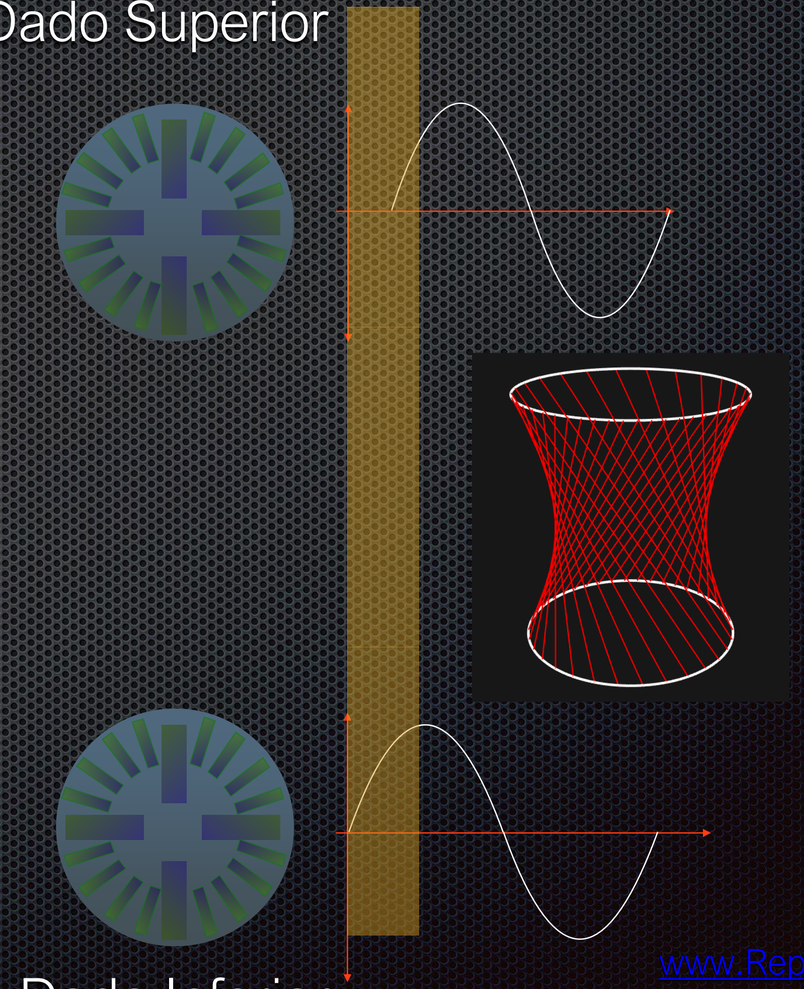
Reómetros de dado oscilante “MDR2000”

www.RepresentacionesGummy.com

Como funciona





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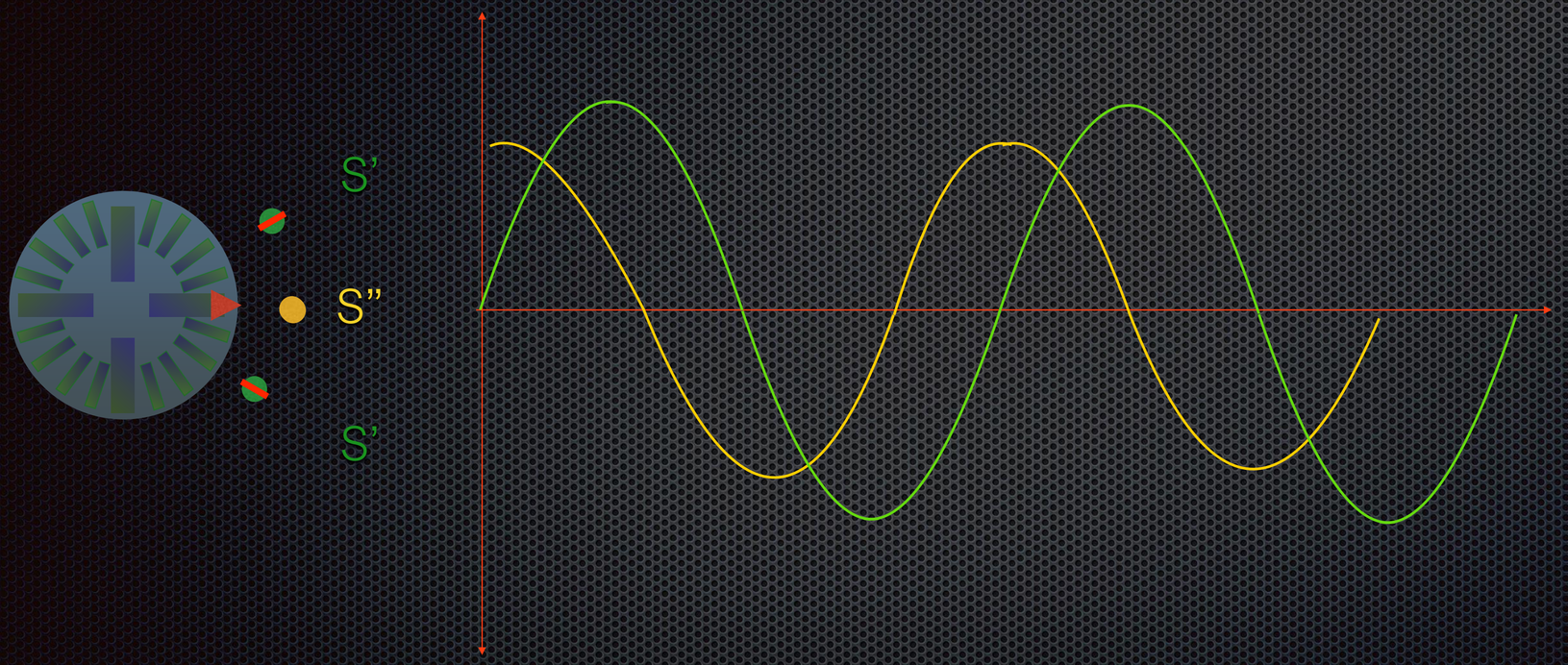
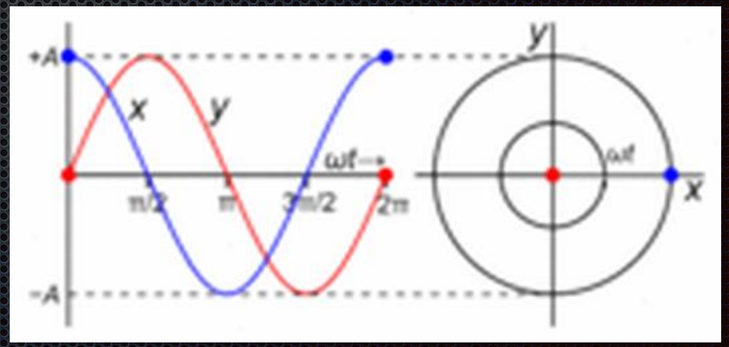
Como Funciona MDR





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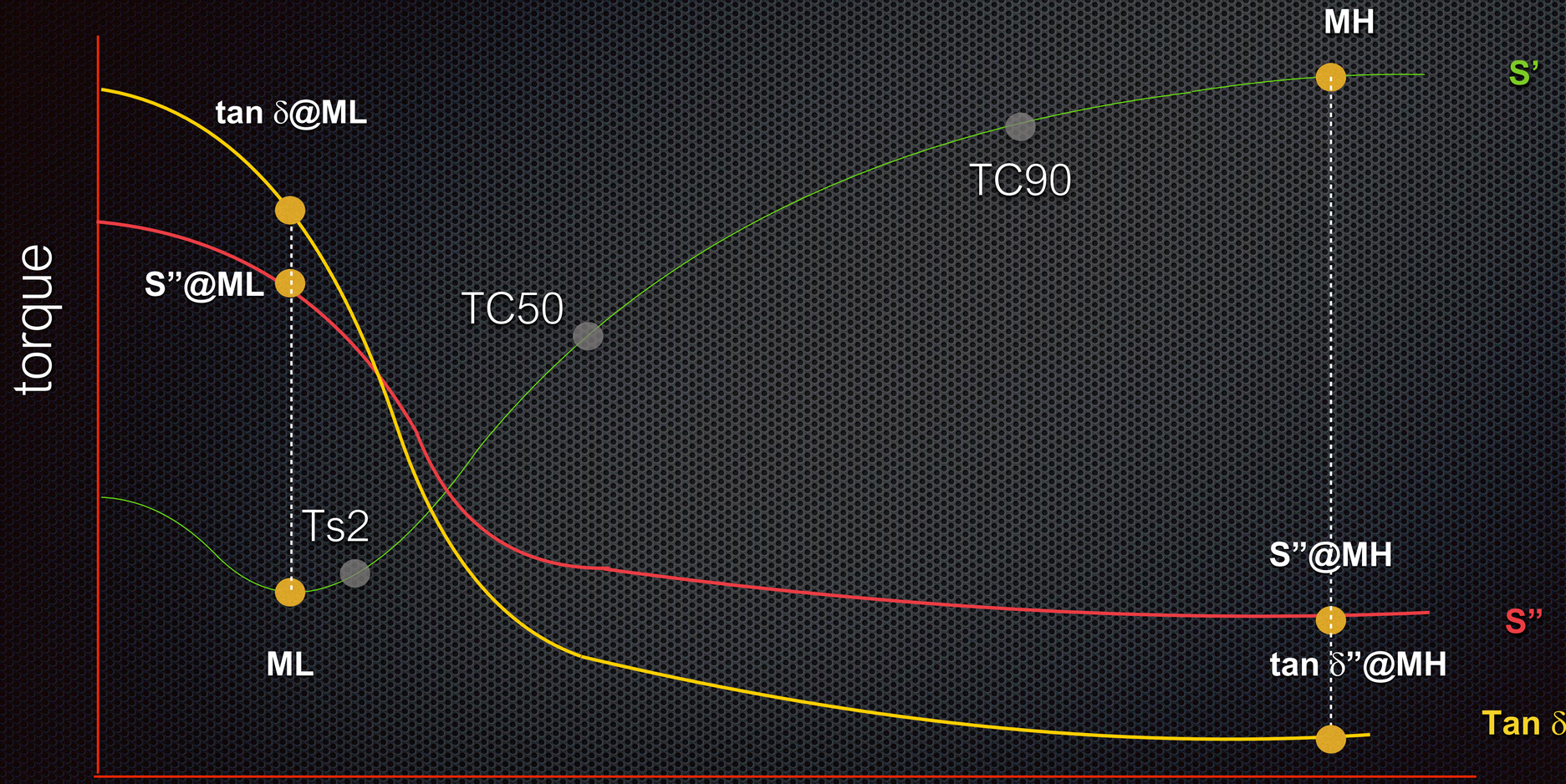
Curva Reómetrica en MDR



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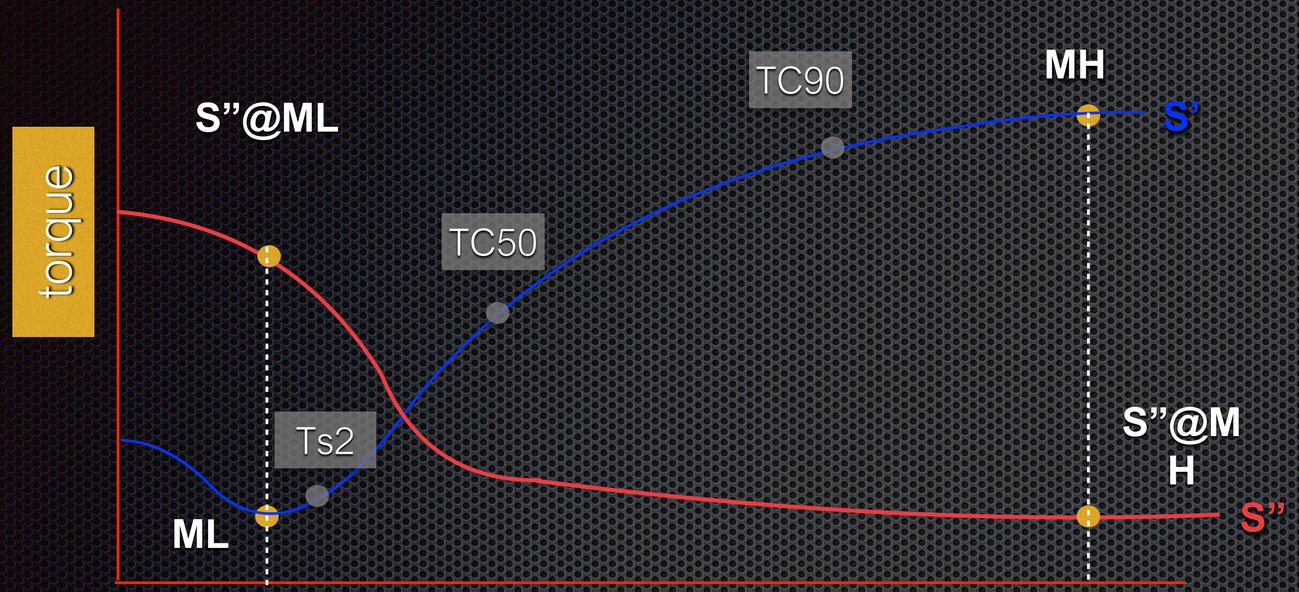
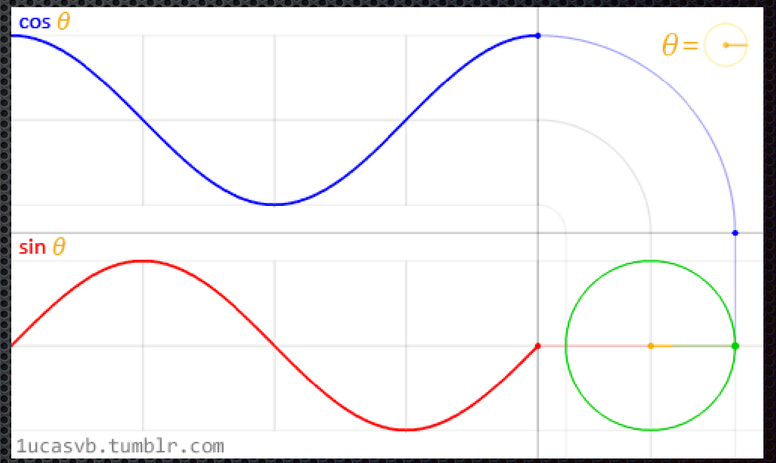
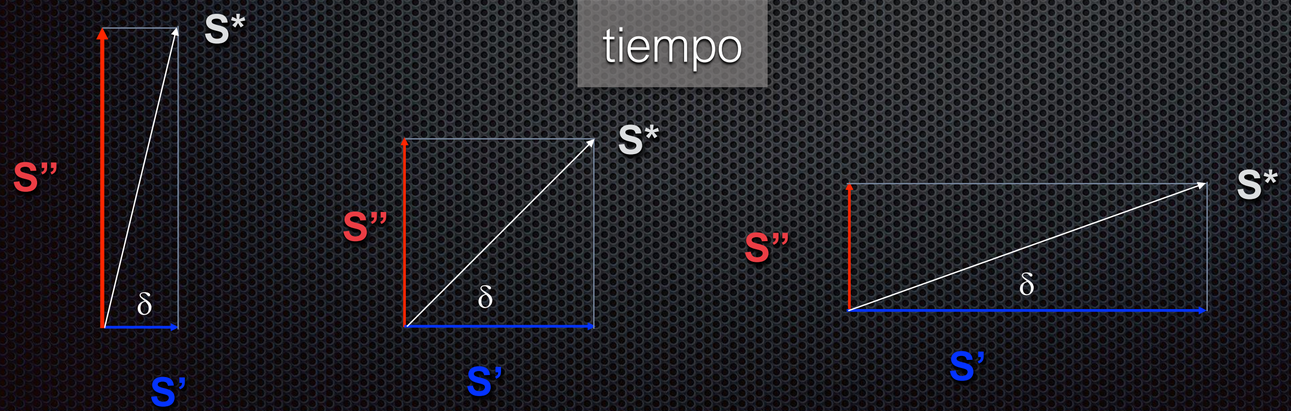
Análisis Vectorial







Tan δ=S″/S′

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- Propiedades:
  - **Reometría:**
  - Viscosidad:
  - Dispersión:
  - Tensión Elongación

MDR

Normas:

ASTM D2084

Standard Test Method For Rubber Property—Vulcanization Using Oscillating Disk Cure Meter

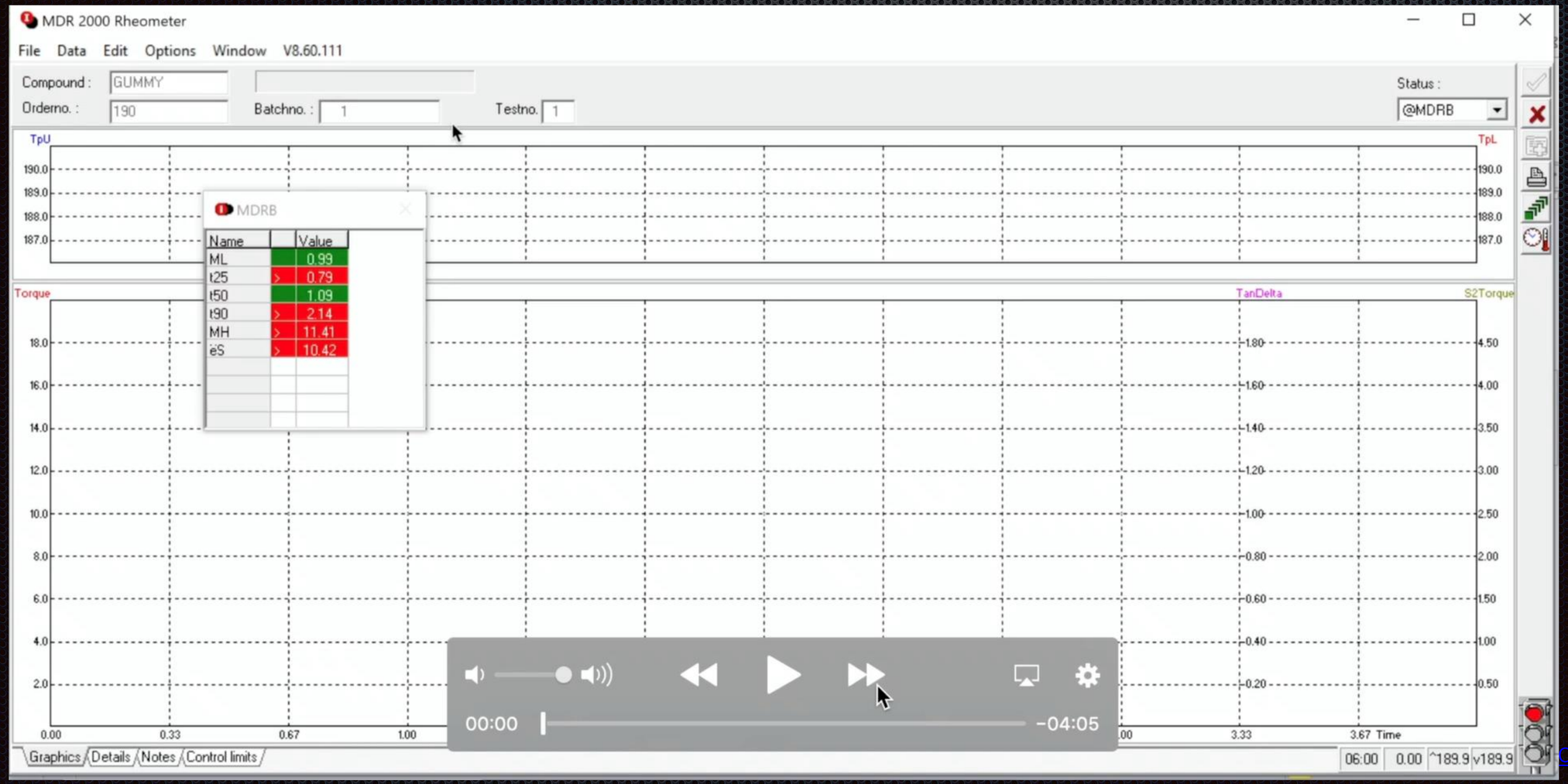
Normas:

ASTM D5289

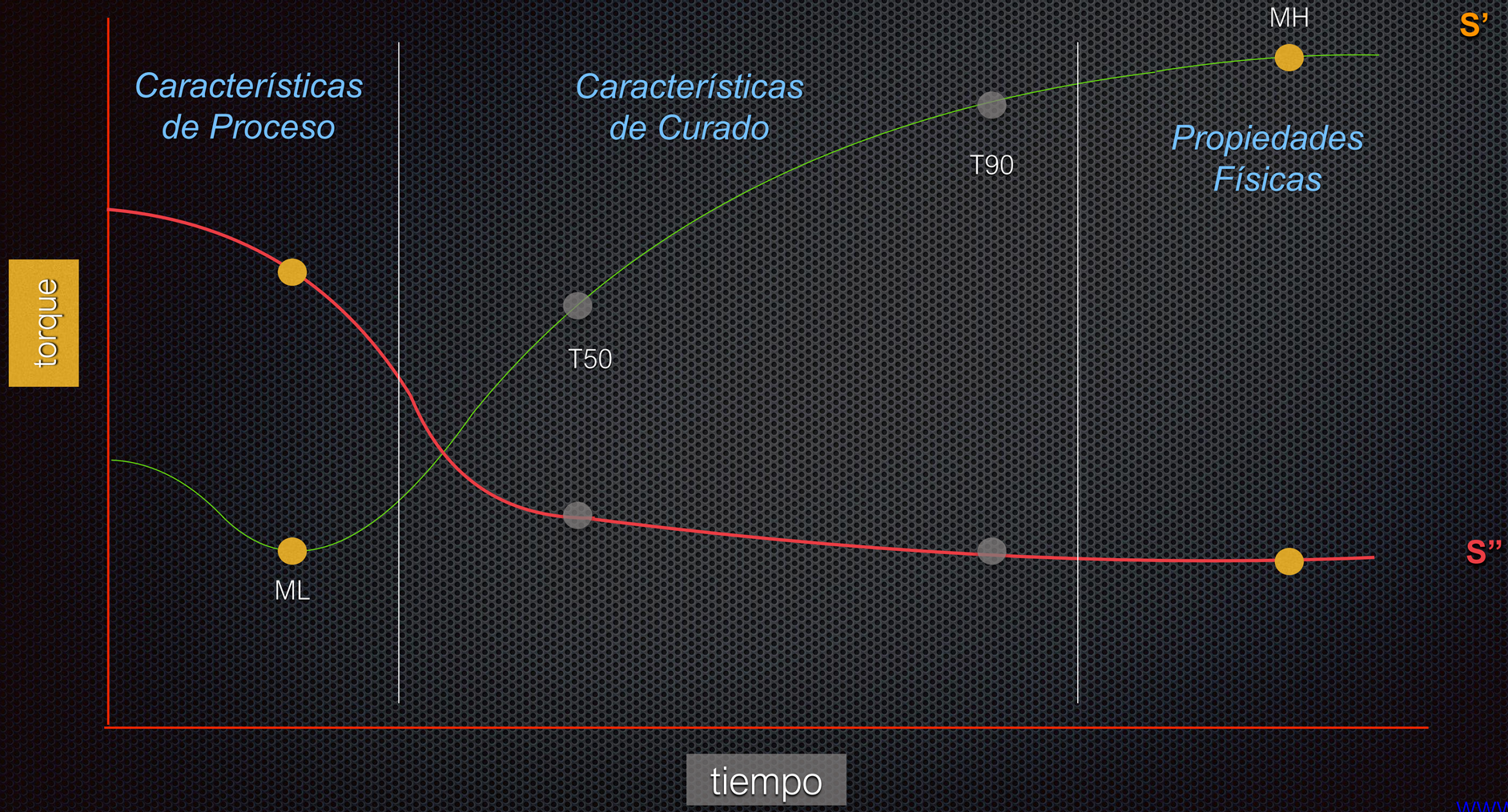
ISO 6502

Standard Test Method For Rubber Property - Vulcanization Using Rotorless Cure Meters Measurement Of Vulcanization Characteristics Using Curemeters

Test real 10X



Zonas Reómetricas



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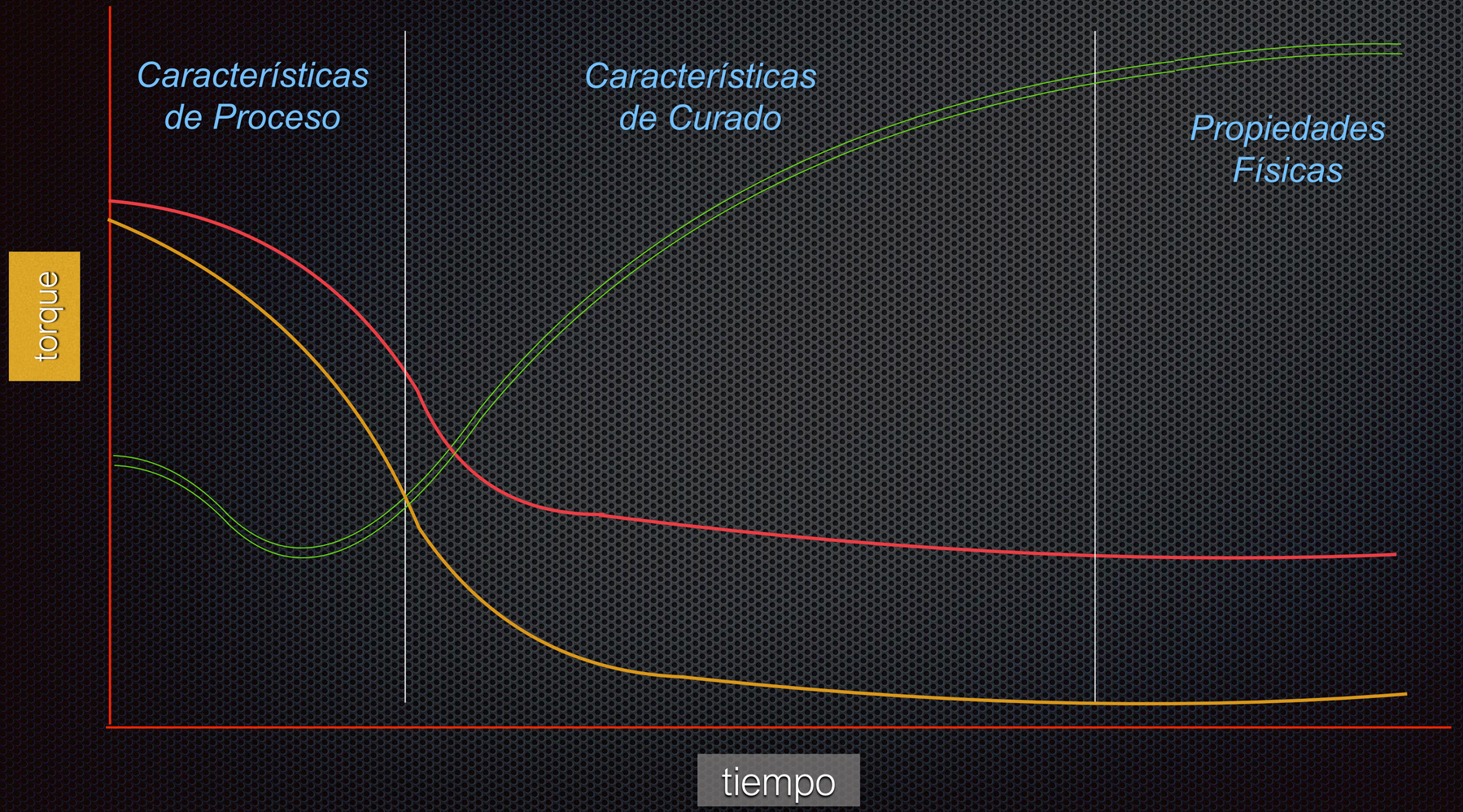
Ejemplo variación

en el Tipo de N. de H.



N550	30
N330	30

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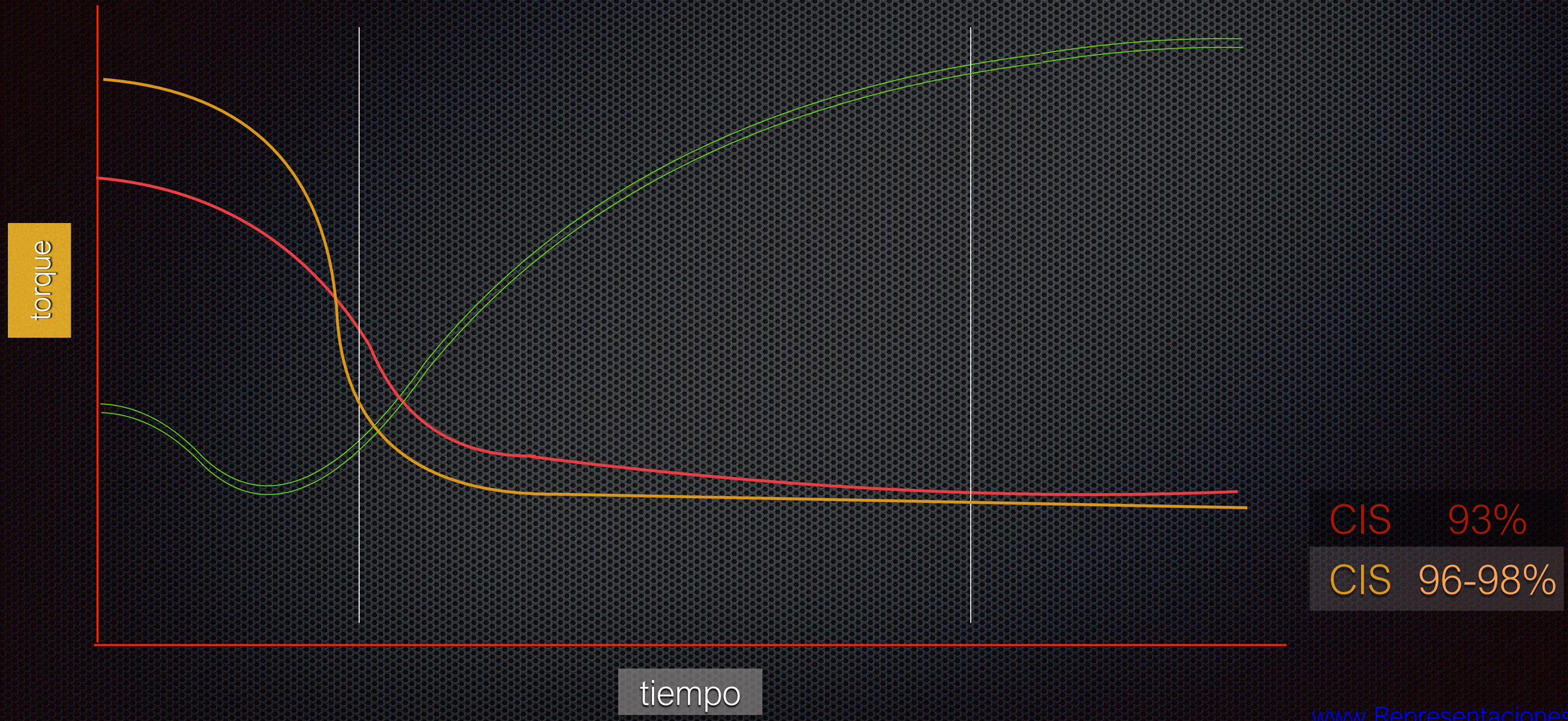
Ej: Influencia del contenido CIS



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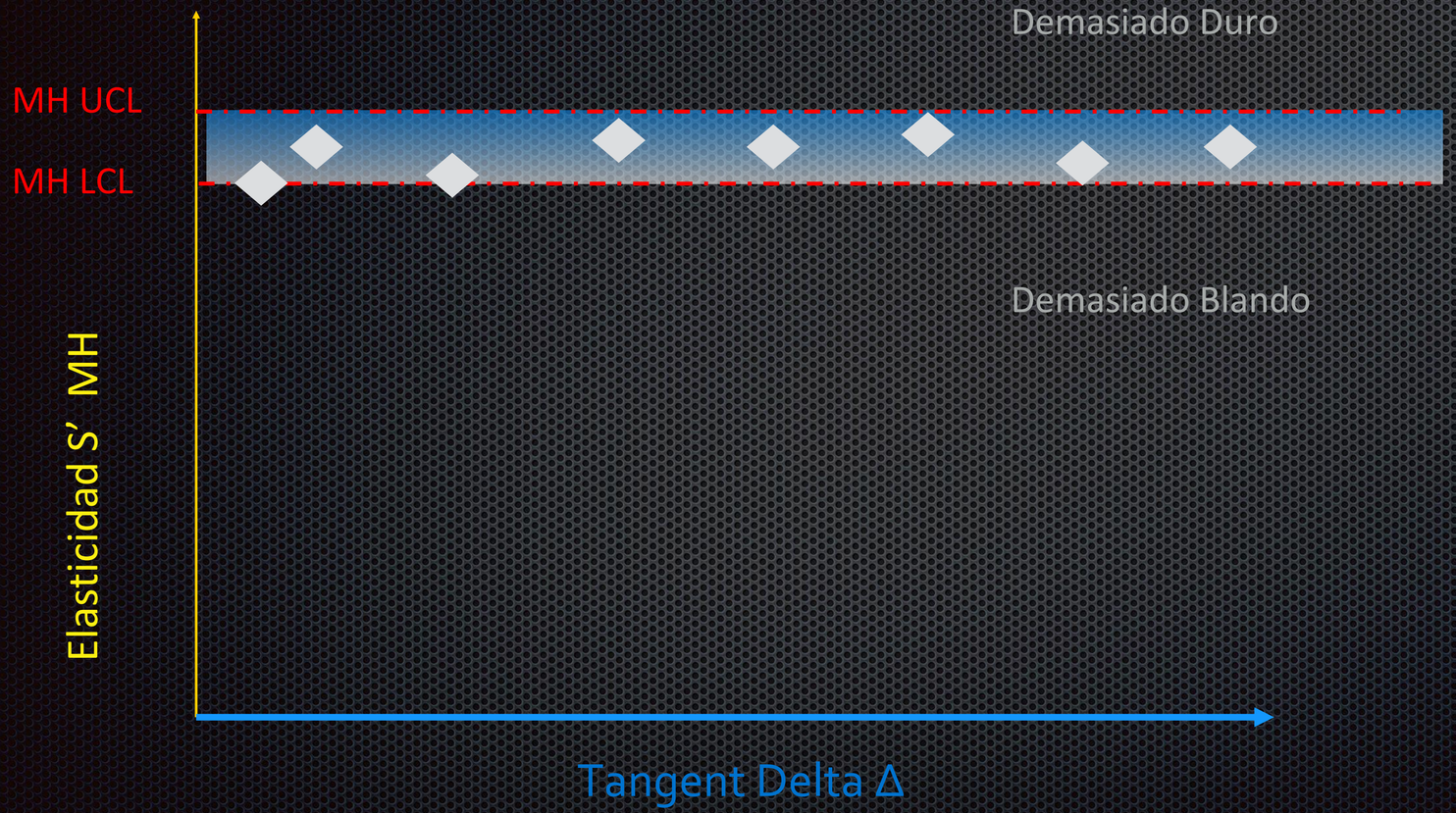
Area de confort Visco-Elastico



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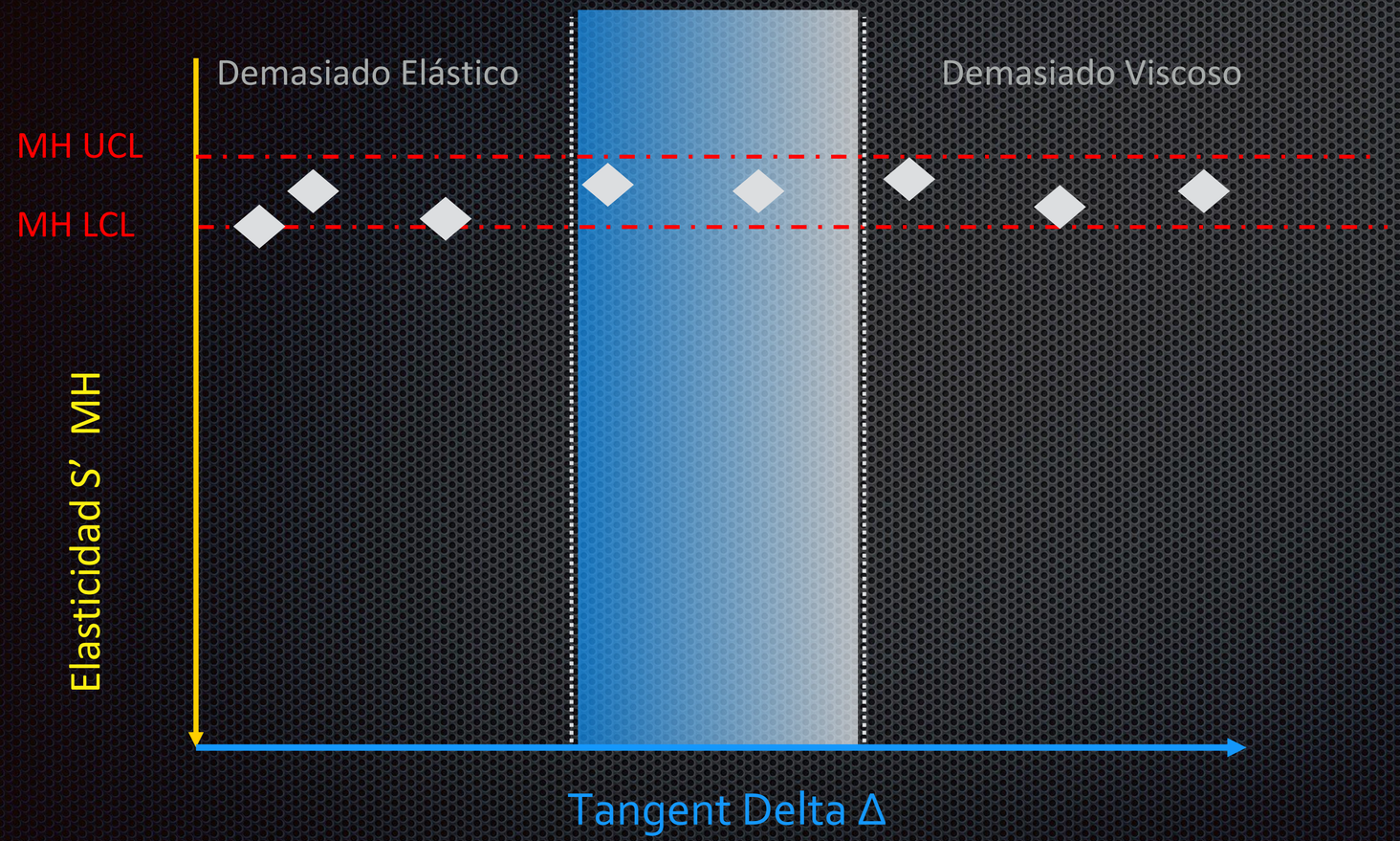
Area de confort Visco-Elastico



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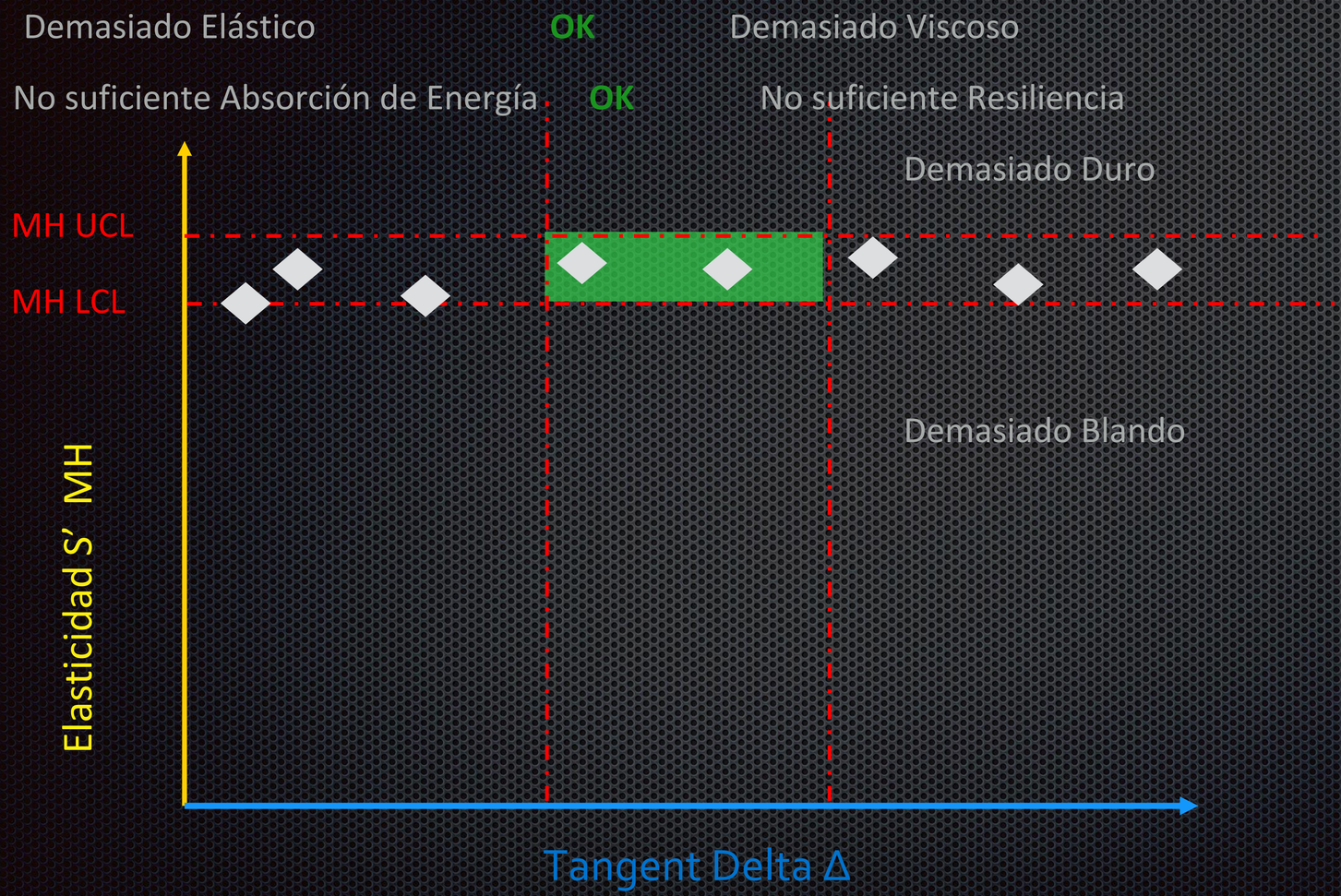
Area de confort Visco-Elastico



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Reometria en caucho esponjoso

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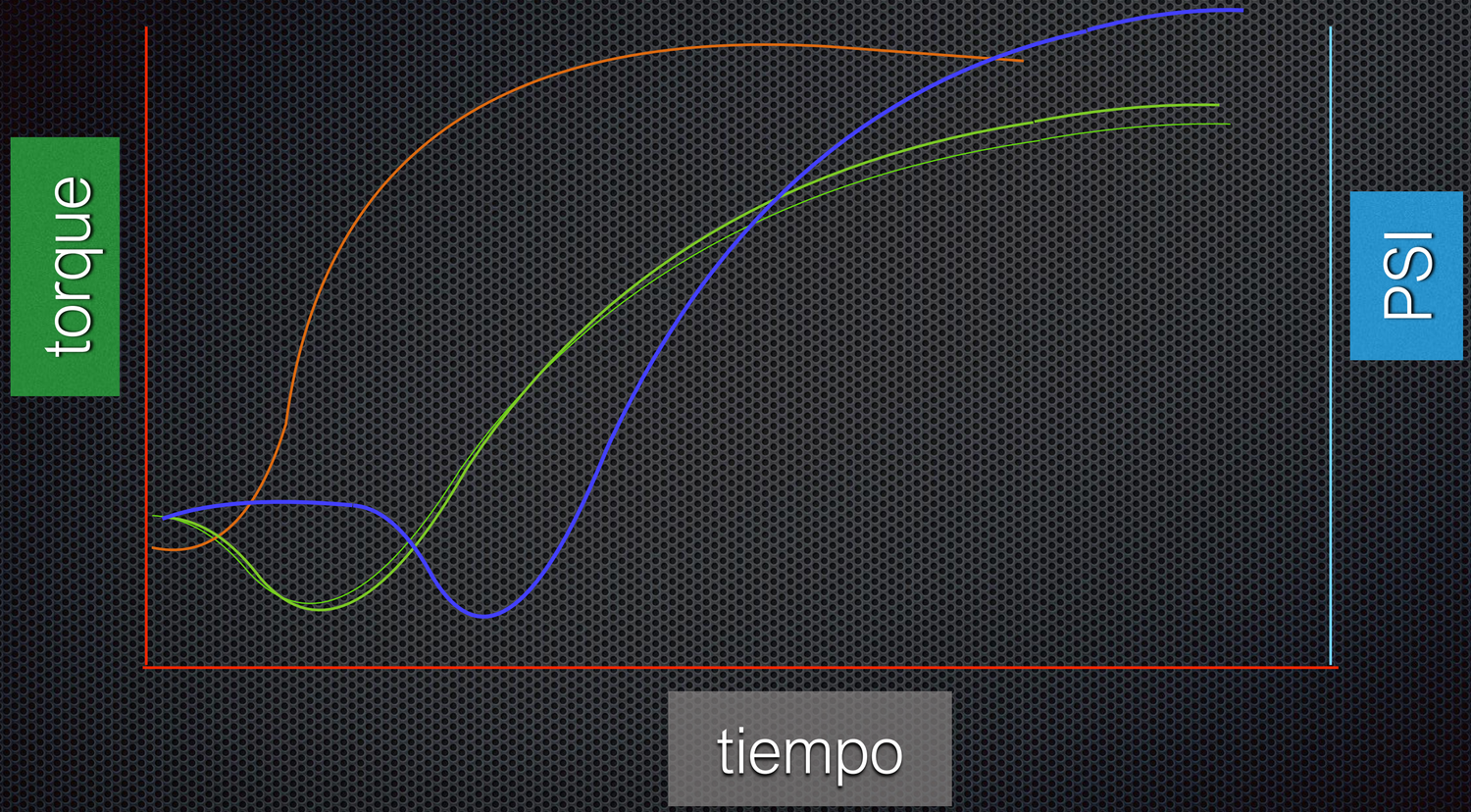
Torque & Presión



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Reómetros evolución

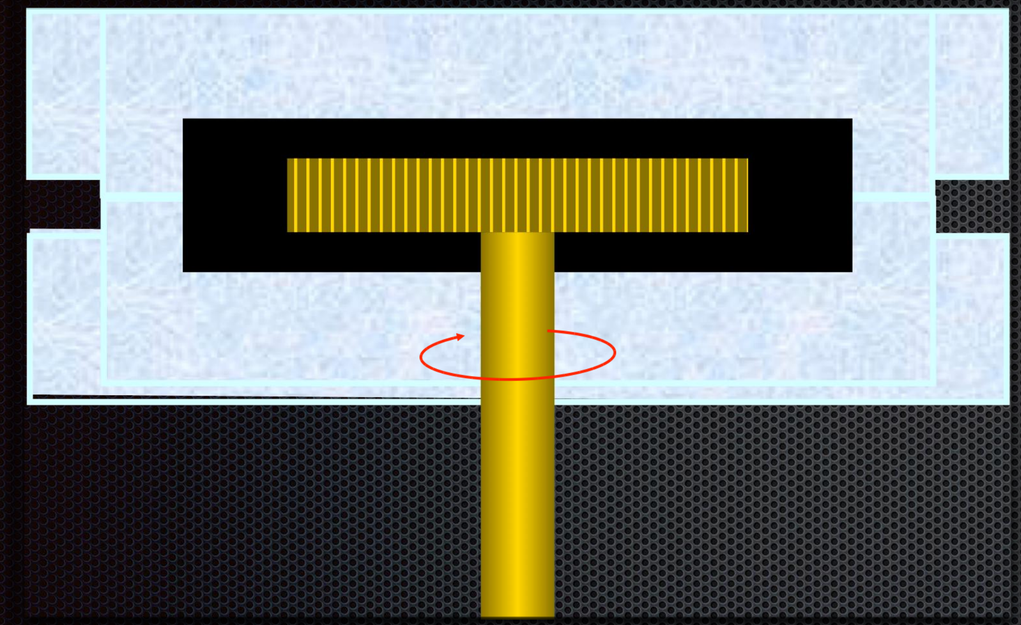
www.RepresentacionesGummy.com

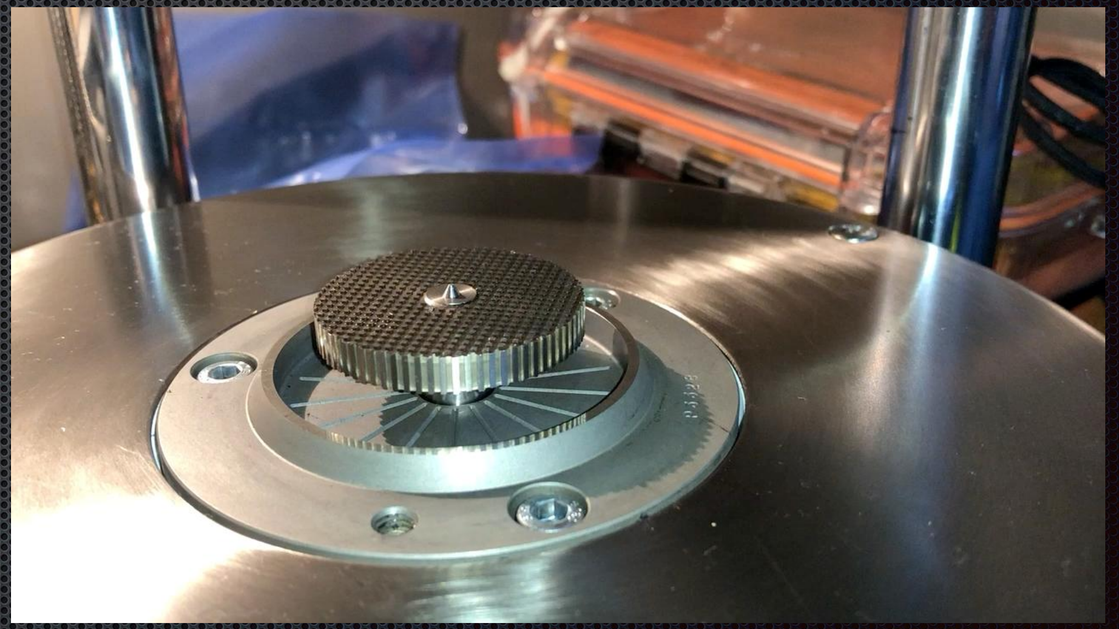
Reómetros de dado oscilante

“Familia MDR”

www.RepresentacionesGummy.com

Viscosimetro





En sentido Horario a 2 RPM

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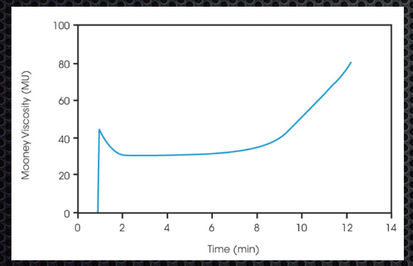
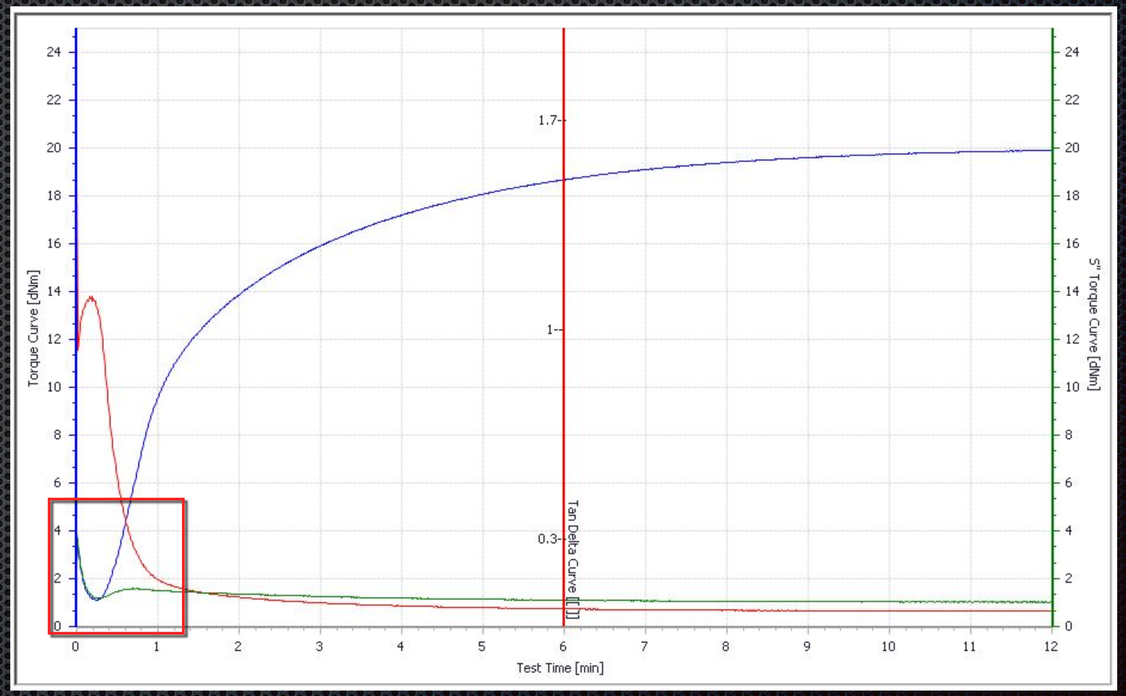
Scorch Test





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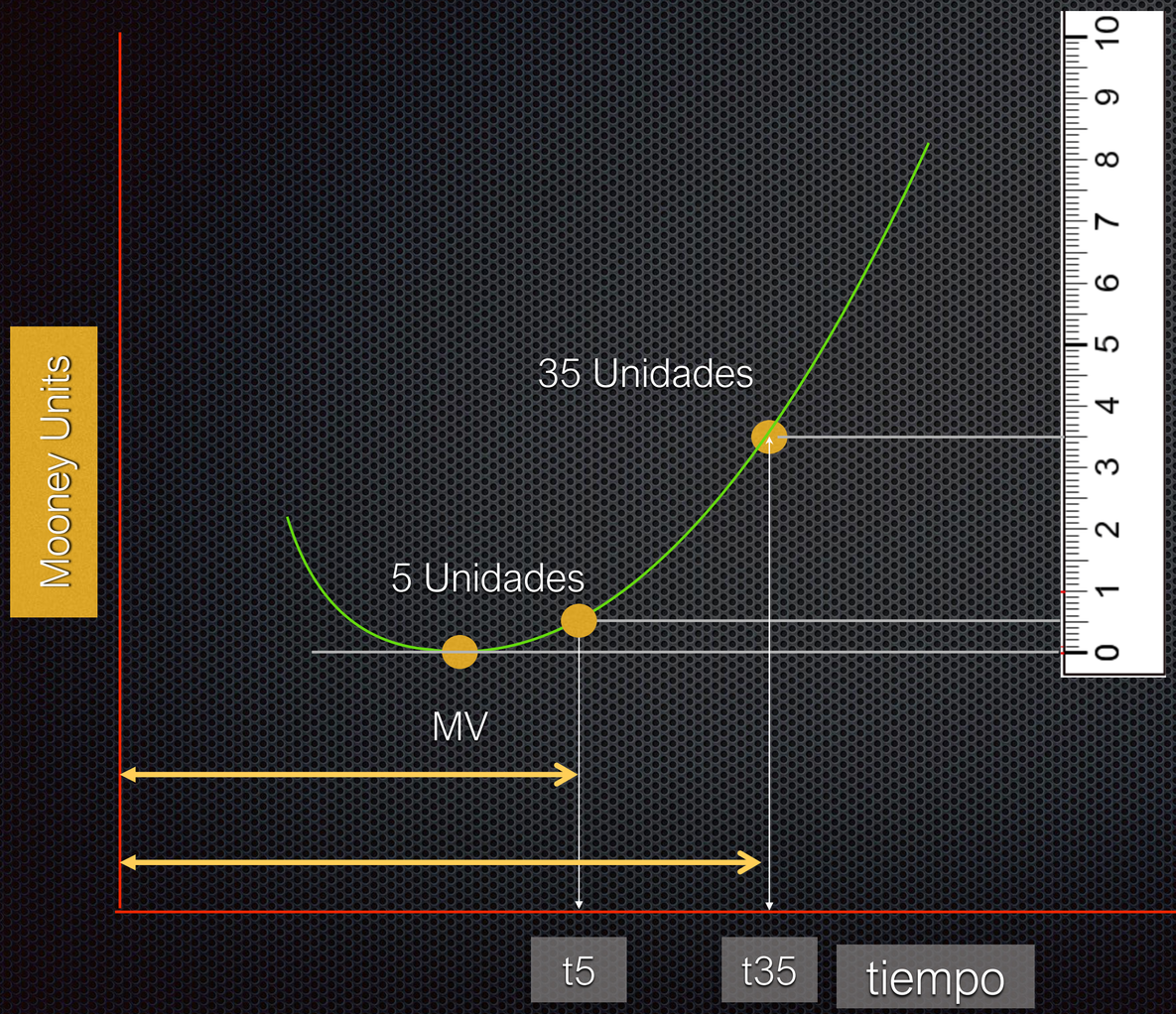
Scotch Test



MV = Minimum Viscosity

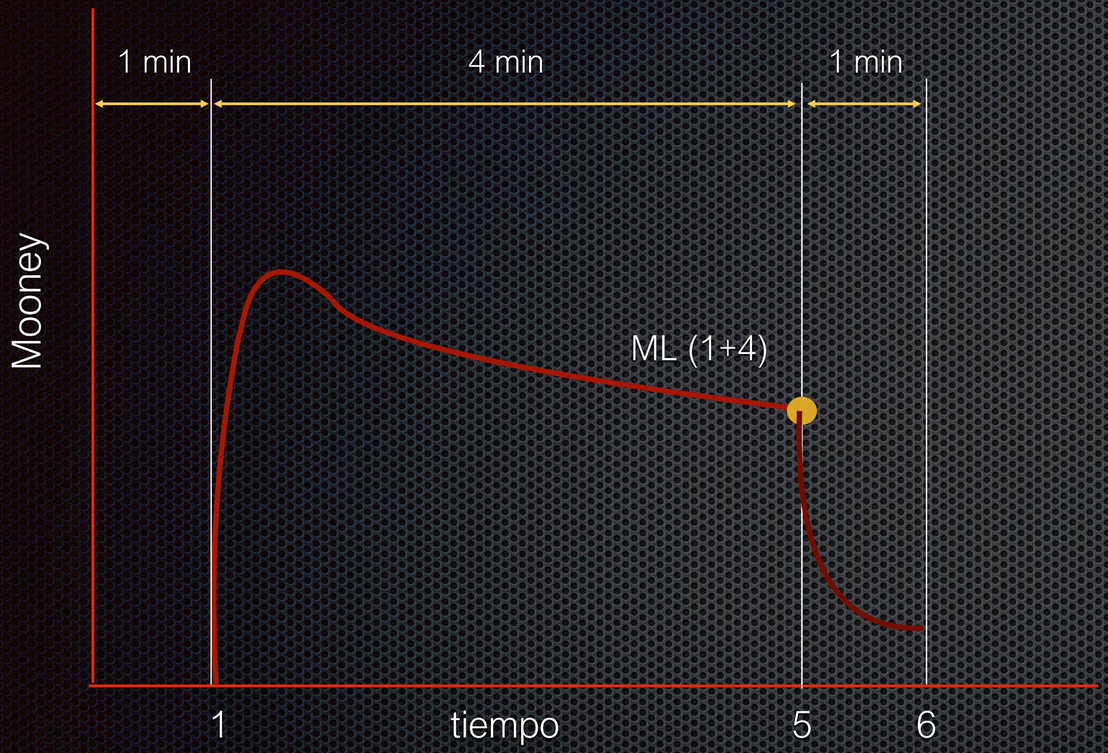
T_5 = Time to Scorch

T_{35} = Time to Cure

Δ TL= Cure Index = (t_{35}-t_5)

Test de viscosidad ML (1+4)

y relajación del esfuerzo



57-UML 1+4 (100˚C)

Tx=Time to decay x% of MU)

T_{80}= 16 Seg. Para perder el 80% de MU

X_y=% to decay x seg)

X_{30}= 86% de perdida de MU en 30 Seg

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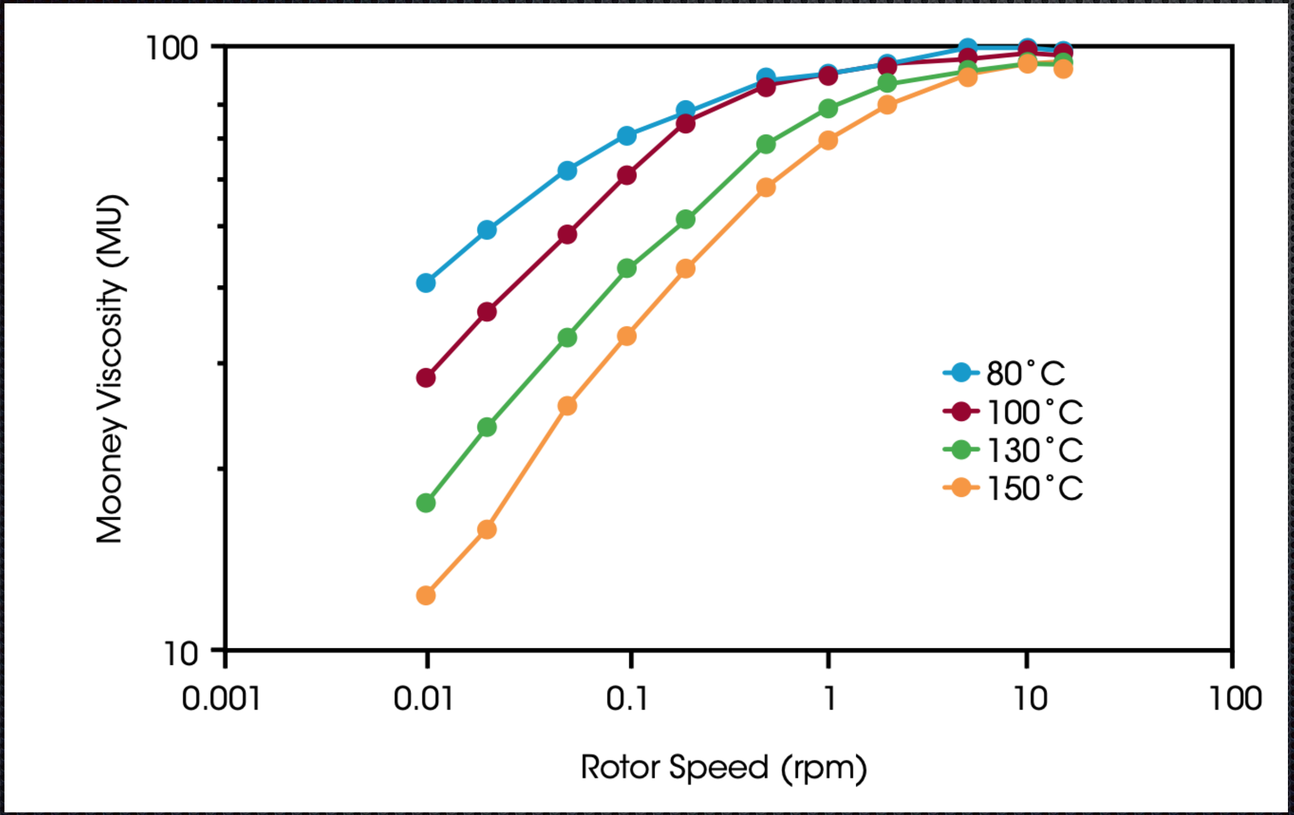
Test de viscosidad ML (1+4)

A diferentes RPM



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Viscosimetros

Premiere MV

MV2000

www.RepresentacionesGummy.com