



29 September -1 October / 29 Eylül - 1 Ekim 2016

TÜYAP Fair, Convention & Congress Center, İstanbul

8. Uluslararası Döküm Kongresi / 8th International Foundry Congress by TUDOKSAD Academy

In conjunction with Ankiros / Annofer / Turkcast fairs

«PENTEX / Çevre Dostu Bağlayıcıların Verimli Üretime Etkisi»

«PENTEX / How Improve In Performance and Delivery Time With An Environmentally Binder System»

**Manuel Vargas
(Metko HA)**

**4.Oturum: Döküm Teknolojileri Kalıp
4th Session: Moulding Technologies**

Oturum Başkanı/Session Chairman: Bülent Şirin (Componenta Dökümcülük Tic. San. A.Ş.)



Oturumlarda yer alan sunumlar 3 Ekim 2016 Pazartesi tarihinde akademi web sayfasına (akademi.tudoksad.org.tr) yüklenecektir.

PENTEX AND HOW IMPROVE IN PERFORMANCE AND DELEVERY TIME WITH AN ENVIRONMENTALLY BINDER

Manuel Vargas
International product manager

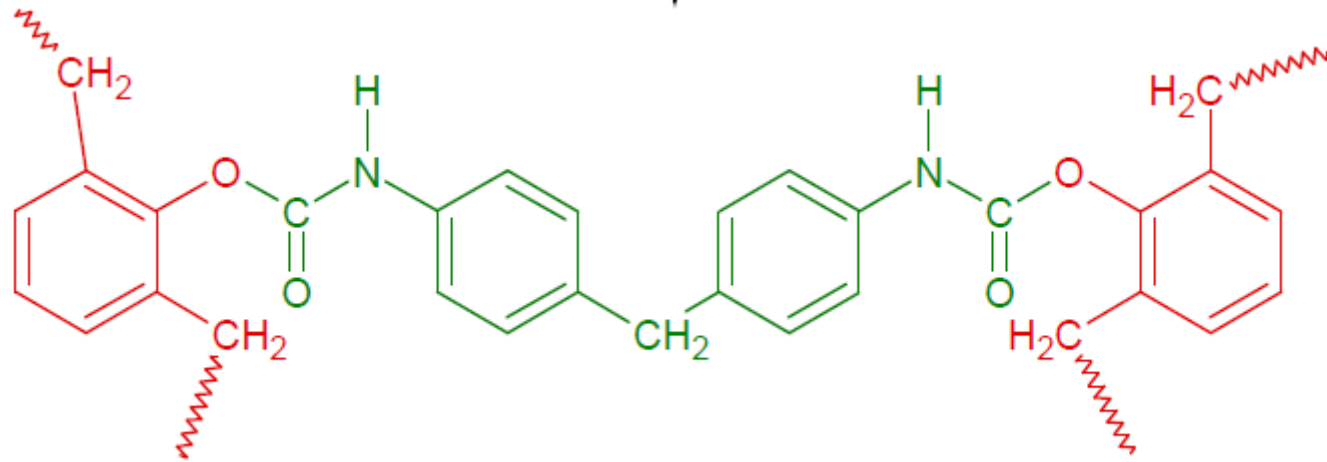
HÜTTENES-ALBERTUS

Polyurethane no bake system : Chemistry



	FUNCTION	TYPE	DILUTION
PART 1	RESIN	PHENOLIC	SOLVENT
PART 2	HARDENER	pMDI	SOLVENT
PART 3	CATALYST	Amine	SOLVENT

POLYURETHANE



BENCH LIFE

PPP ou 4-(3-phenylpropyl)pyridine

=

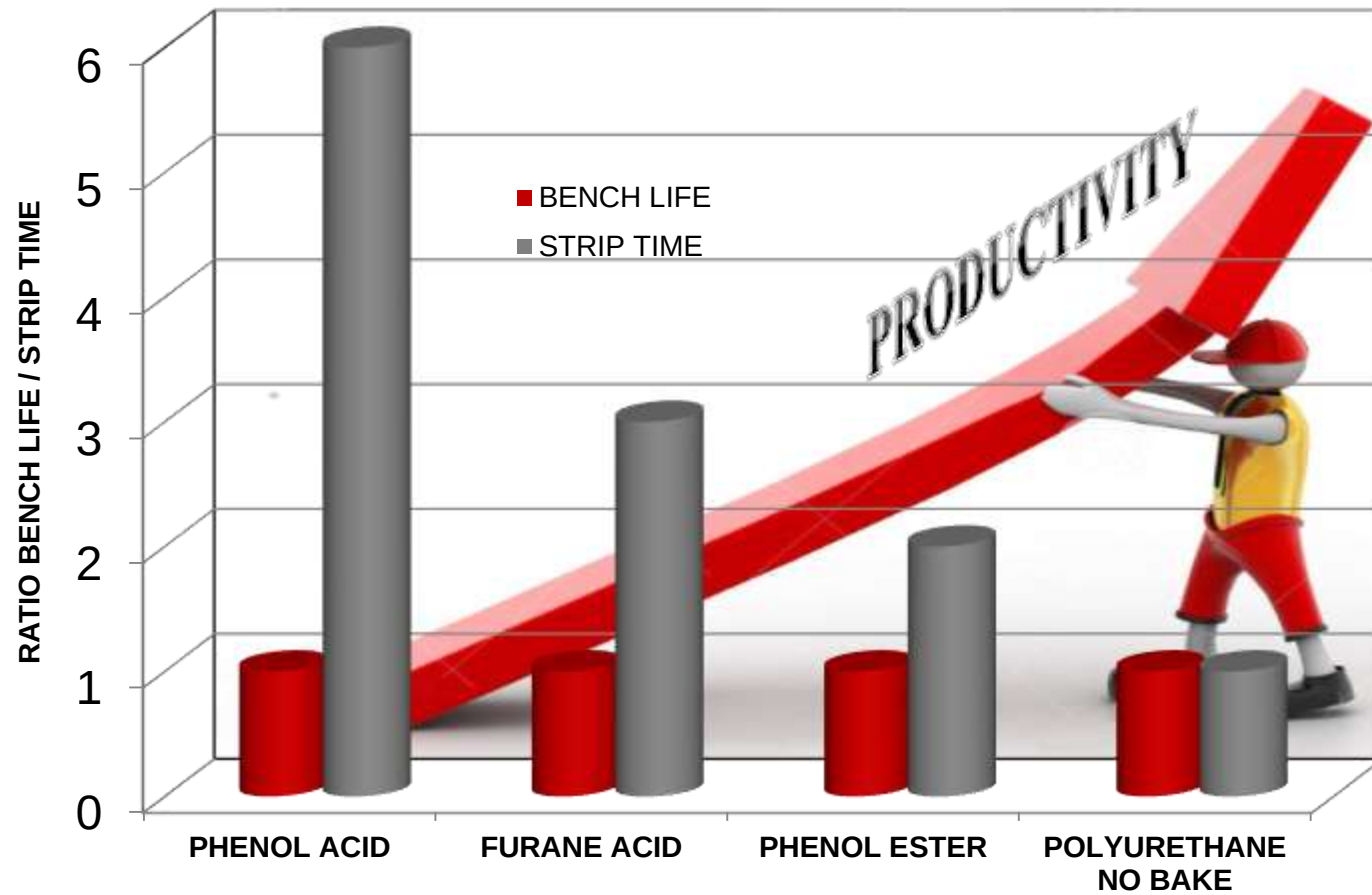


STRIP TIME

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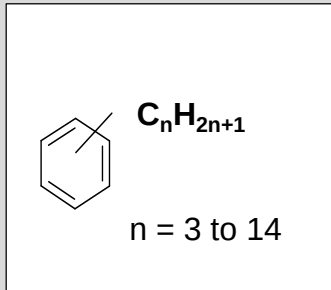


Comparative bench life / strip time of different technologies

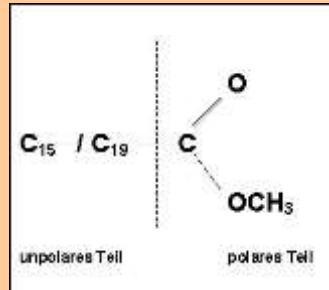


Polyurethane and solvents

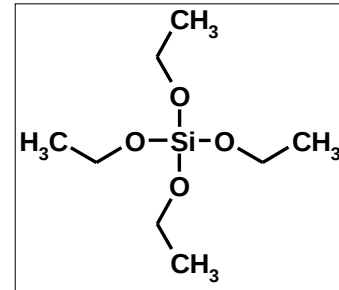
Aromatic hydrocarbons



Aliphatic

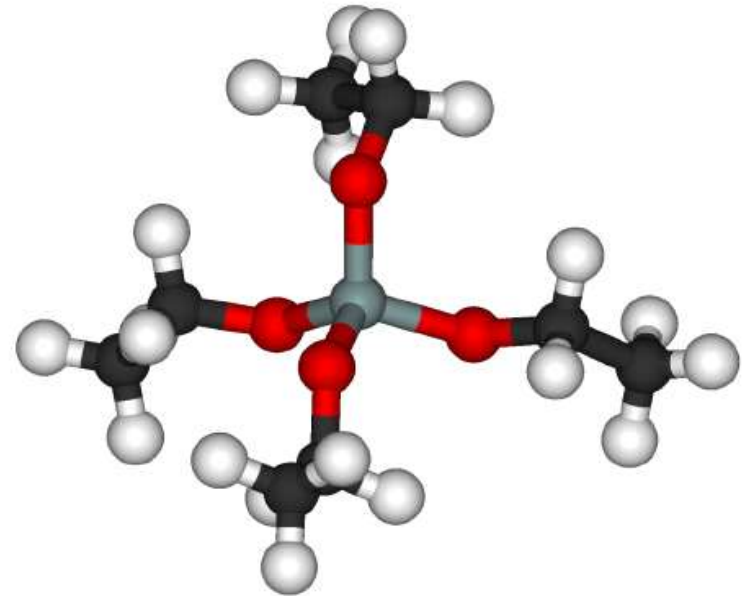


TetraEthylorthOSilicate



■ TEOS latest generation Solvent

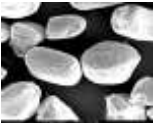
- Silicon based solvent combining organic and inorganic characteristics
- Primary performance advantages over Hydrocarbon or Biodiesel solvents is smoke & odor
- Reduces odors during pouring, cooling, shake out



Polyurethane and binder addition

S
A
N
D

NEW

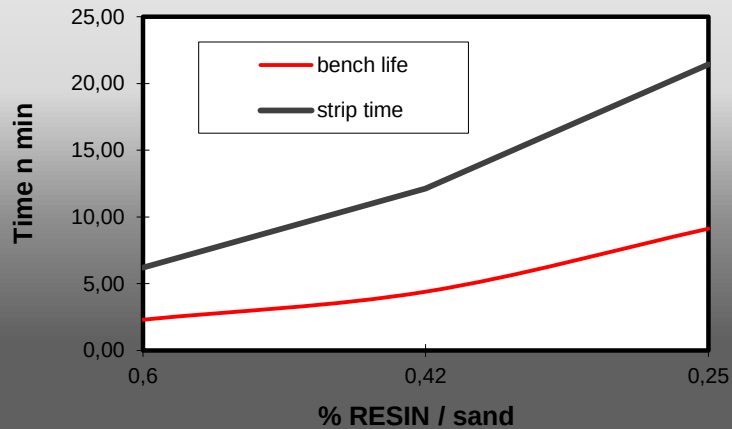
		PART 1 %	PART 2 %	Total %
CHROMITE FeO/Cr ₂ O ₃		0,35	0,30	0,65
ZIRCON ZrO ₂ /SiO ₂				
SILICA SiO ₂		0,45	0,40	0,85
ANDALUSIT Al ₂ O ₃ /SiO ₂		0,7	0,65	1,35
OLIVIN MgO/SiO ₂		0,95	0,85	1,80

RECLAIM

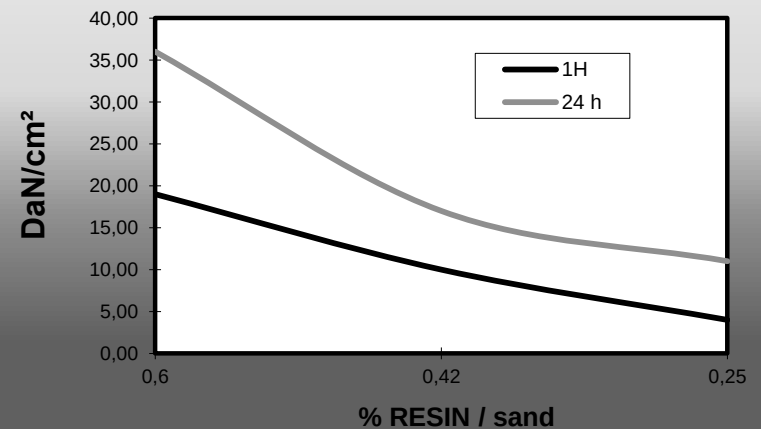
CHROMITE	0,3	0,25	0,55
SILICA	0,4	0,35	0,75

Reactivity with a fast system

Relation between resin % and bench life , strip time
Part 1 / Part 2 / Part 3

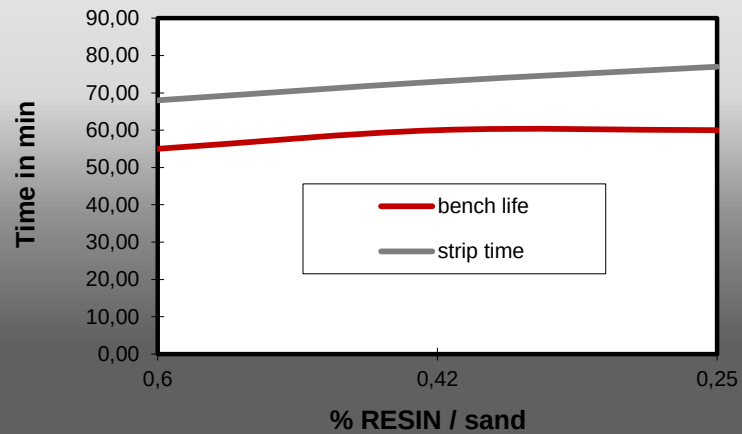


Relation between resin % and strength
at 1 hour and 24 hours
Part 1 / Part 2 / part3

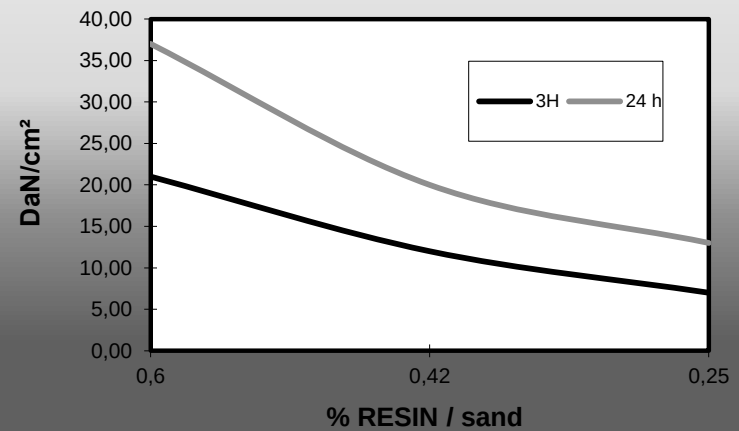


Reactivity with a slow system

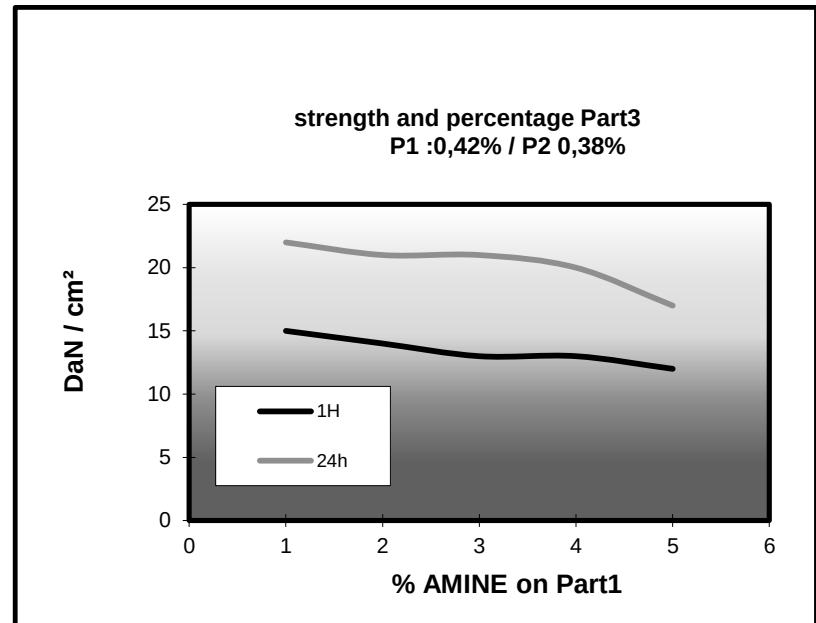
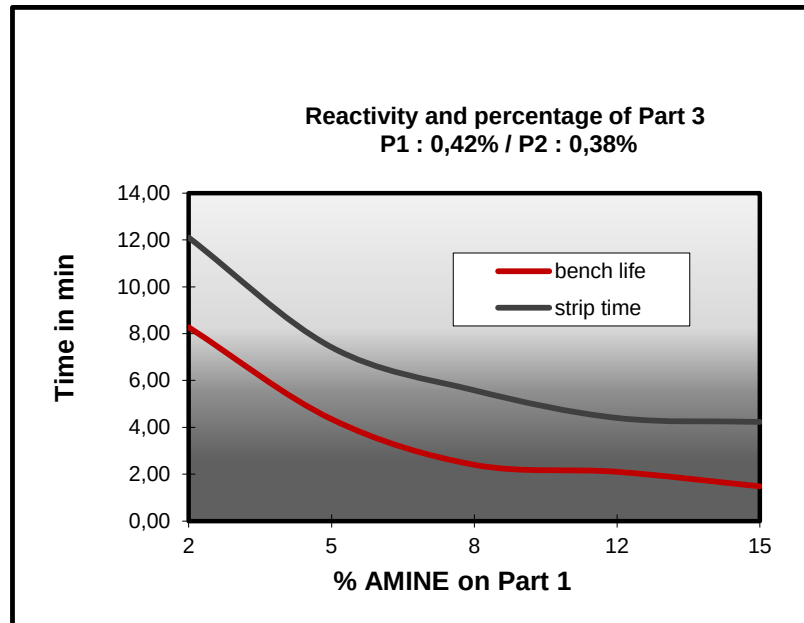
Relation between binder % and bench life
Part 1 / Part 2 / Part 3

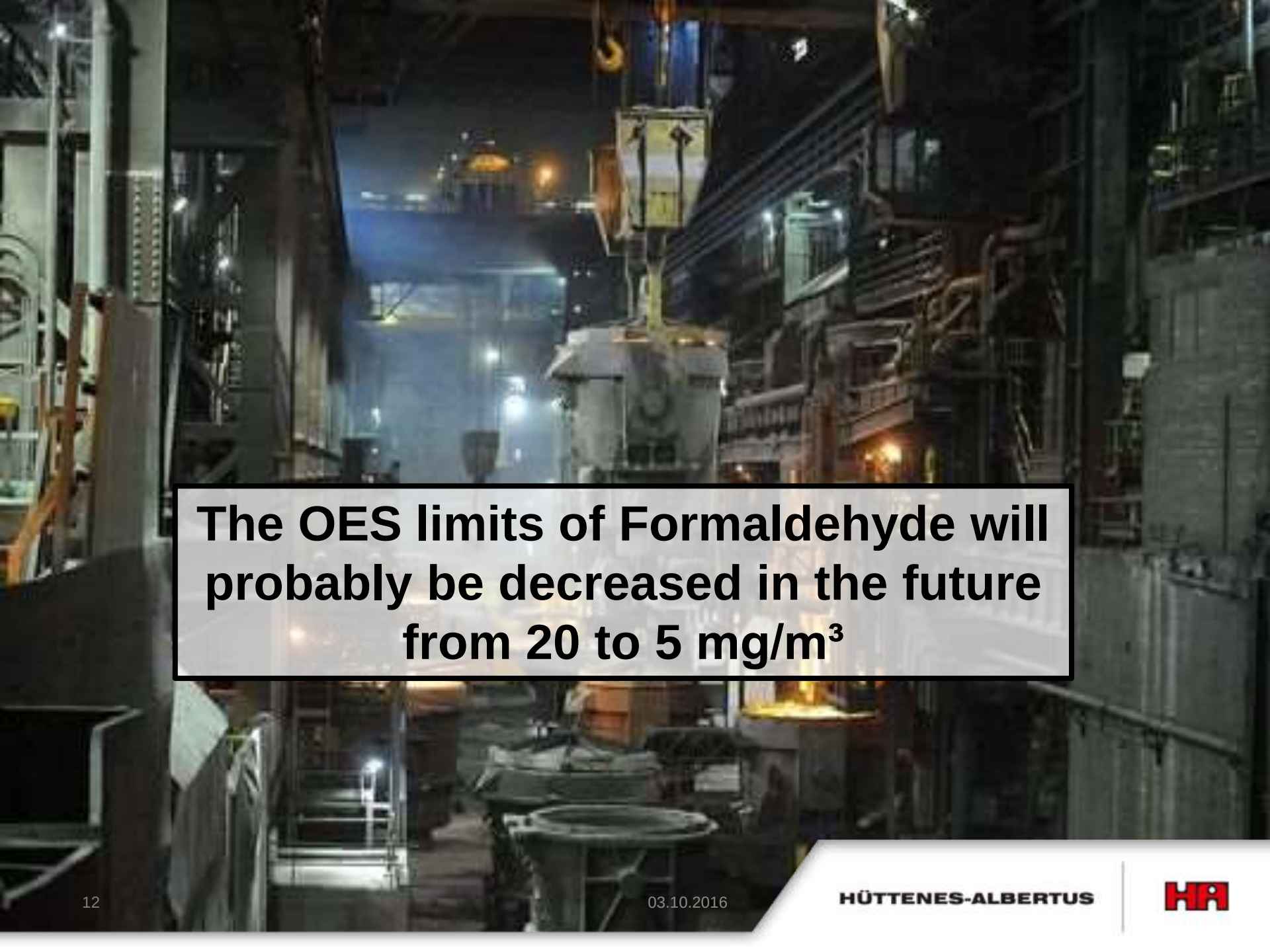


Relation between binder % and strength
at 3 hours and 24 hours
Part1 / Part2 / Part3



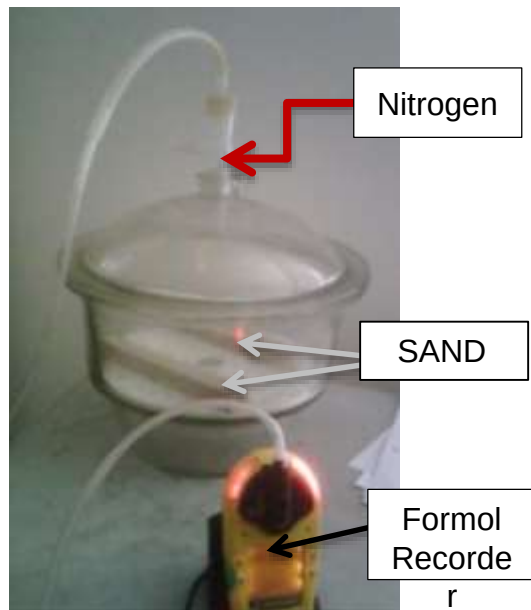
Reactivity and percentage of part 3 on part 1



A photograph of a large industrial facility, likely a steel mill, with a complex network of pipes, structural beams, and machinery. A large crane is visible in the center, and the scene is illuminated by industrial lights, creating a hazy atmosphere.

The OES limits of Formaldehyde will probably be decreased in the future from 20 to 5 mg/m³

Polymerization and formaldehyde emission

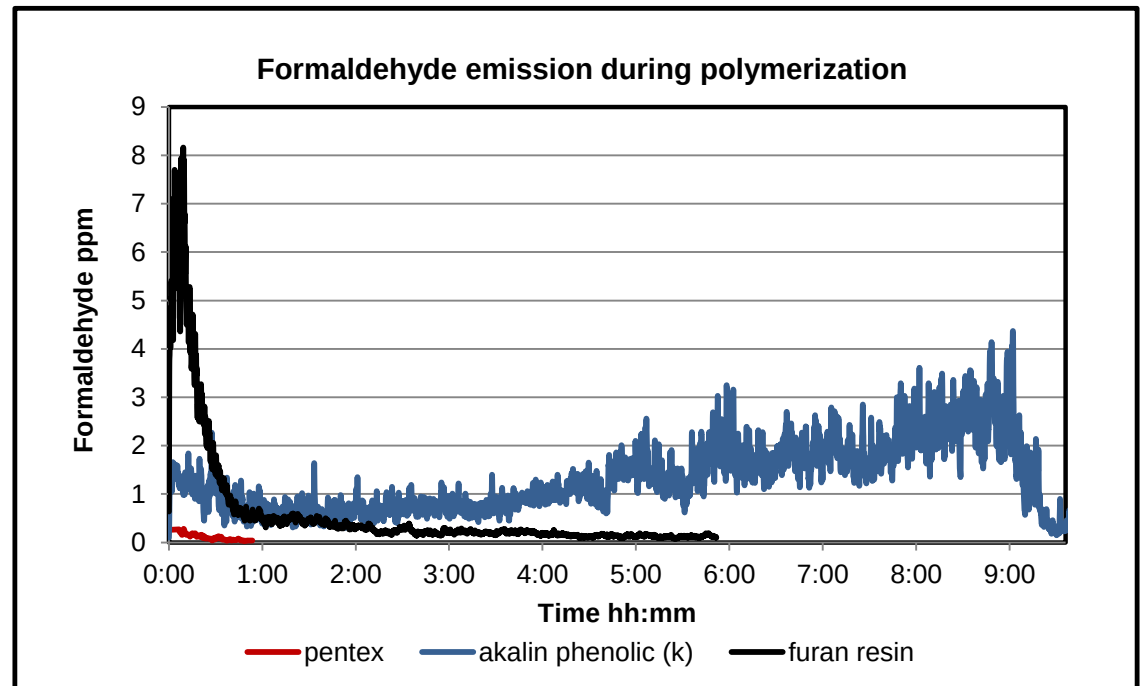


New sand formulation for 4kg

Pentex : Part 1 : 0.42% on sand
Part 2 : 0.42 % on sand
Part 3 : 4% on part1

Furan: Part 1 : 1% on sand
PTS 65% : 40% on resin

Alkalin: Part 1 : 1% on sand
Triacetin : 22% on resin



nose indicator of good neighborliness

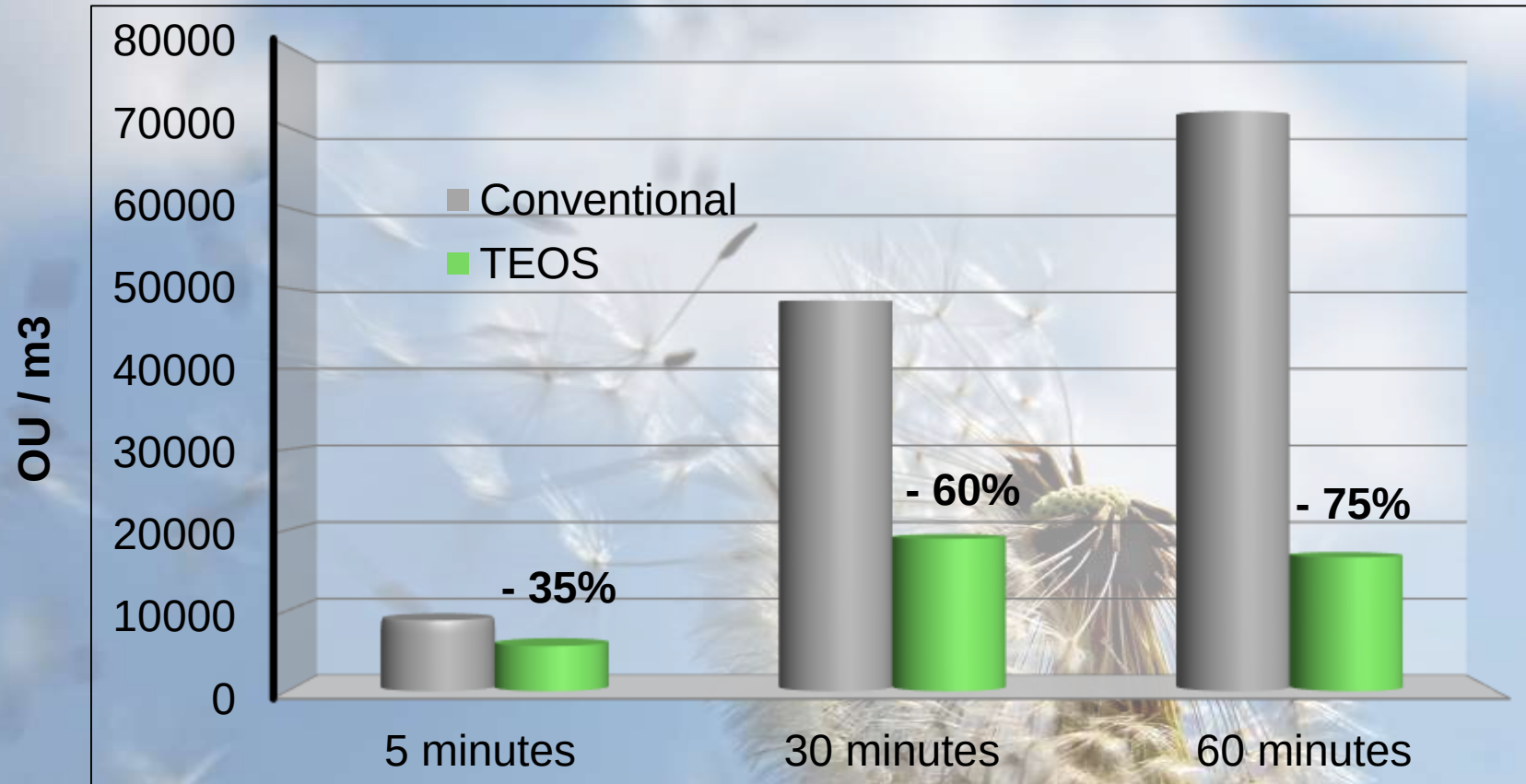


Odor measurements (olfactometry) using-to- practice test samples



At the Institute for Foundry Technology by Mr Sudhir HAI

Odor comparison



EMISSION AT HIGHT TEMPERATURE



Emission Hot Temperature and analytical device

GC-MS

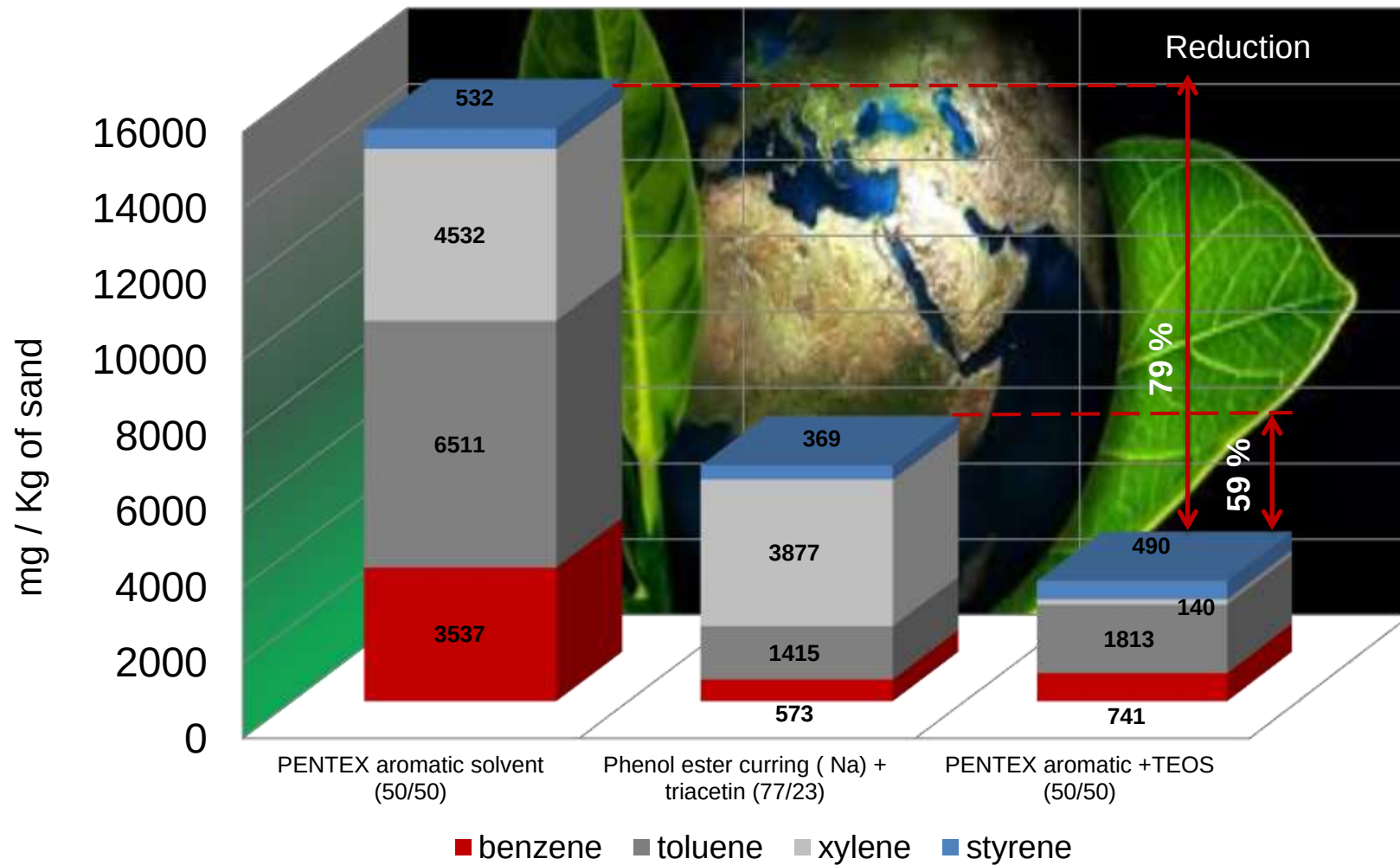


CDS PYROPROBE 5200

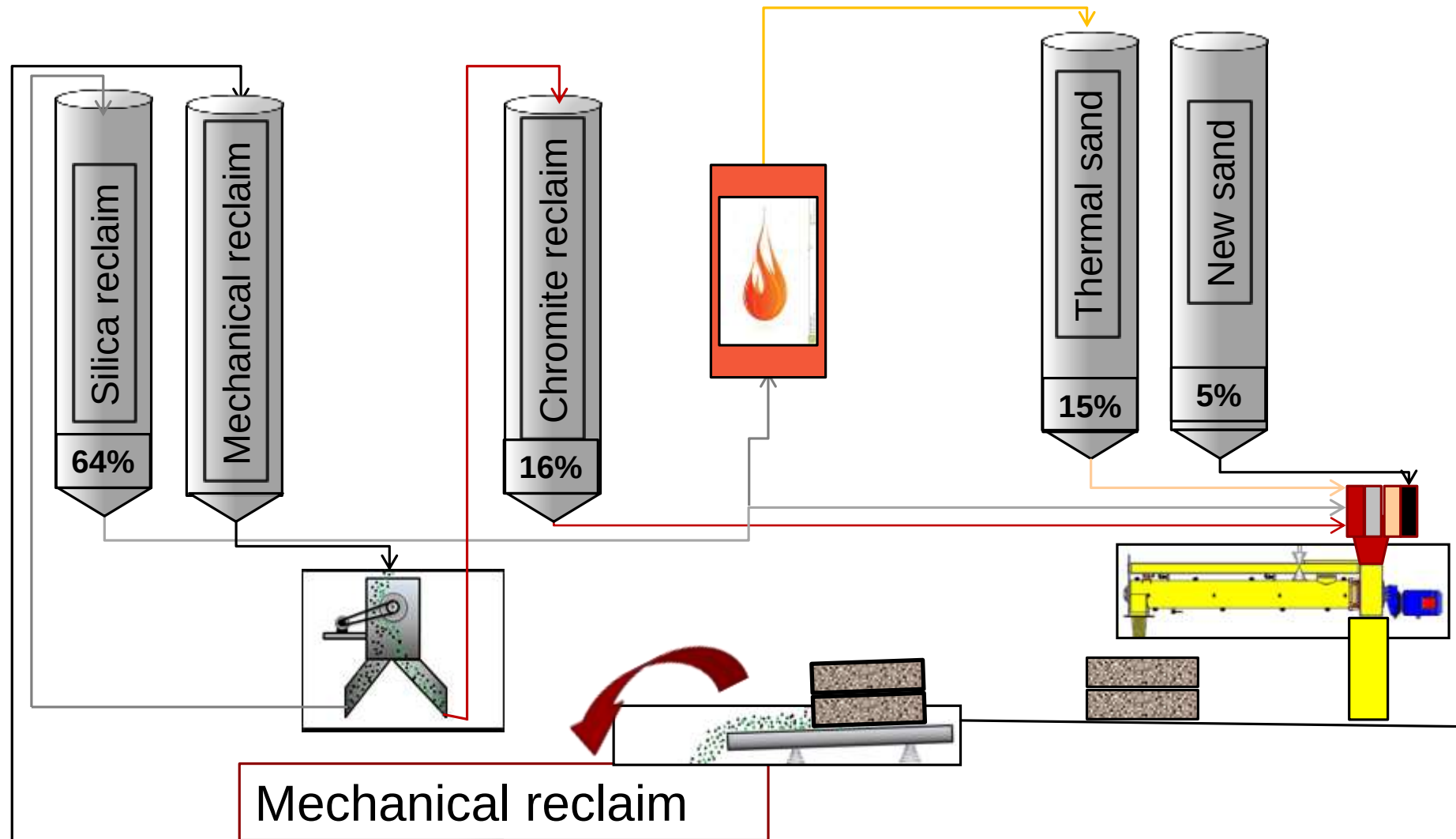


Temperature : 25°C - 1100°C

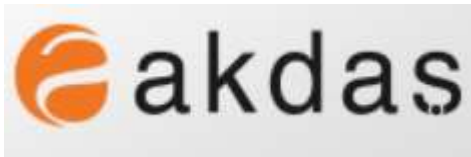
BTXS : total and maximum emissions at 800°C



Sand conditioning plant



Examples



Core 2,5 t New sand and chromite



Railway Frog



Propeller



Pump casing

**Thank you for your
Attention**