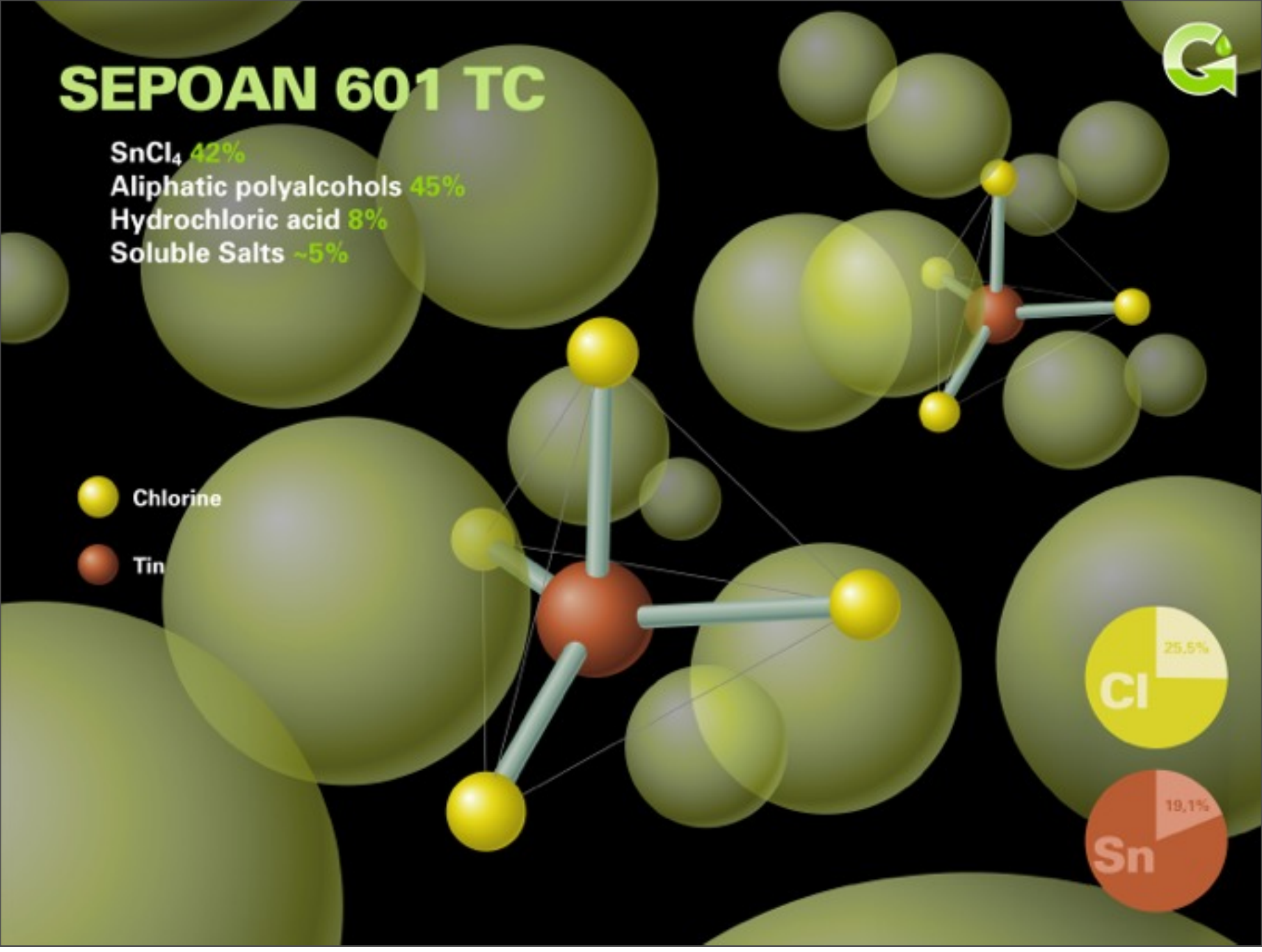
DIVISIÓN QUÍMICA

GRUPO SEGURA RUIZ

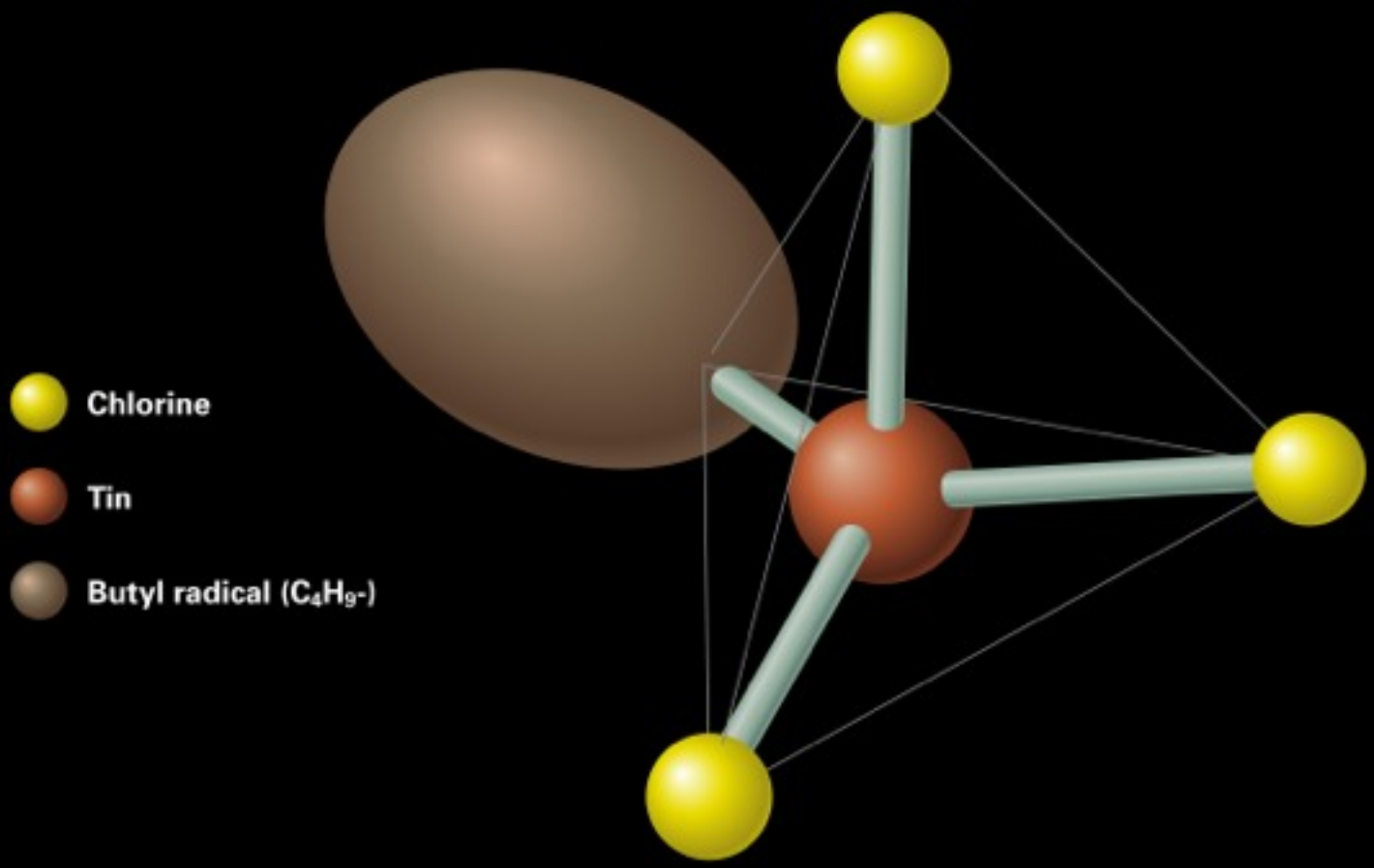
CHEMICAL DIVISION

OF GRUPO SEGURA RUIZ

SEPOAN 601 TC

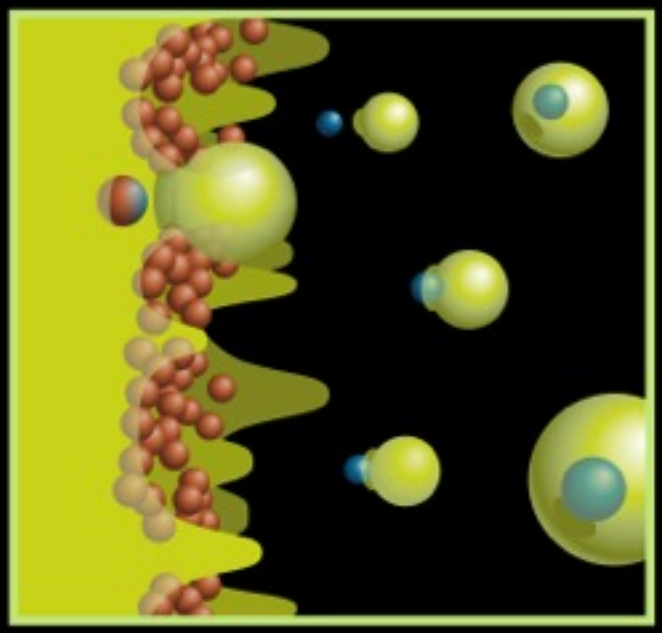

SEPOAN 601 TC
$SnCl_4$ 42%
Aliphatic polyalcohols 45%
Hydrochloric acid 8%
Soluble Salts ~5%
Chlorine
Tin
25,5%
Cl
19,1%
Sn

TIN TRICHLORO MONOBUTYL

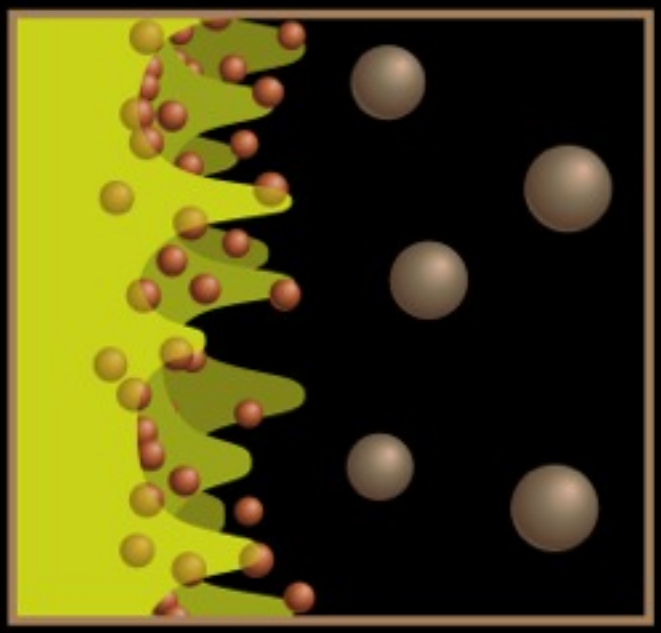


MECHANISM OF ACTION COMPARISON

SEPOAN 601 TC

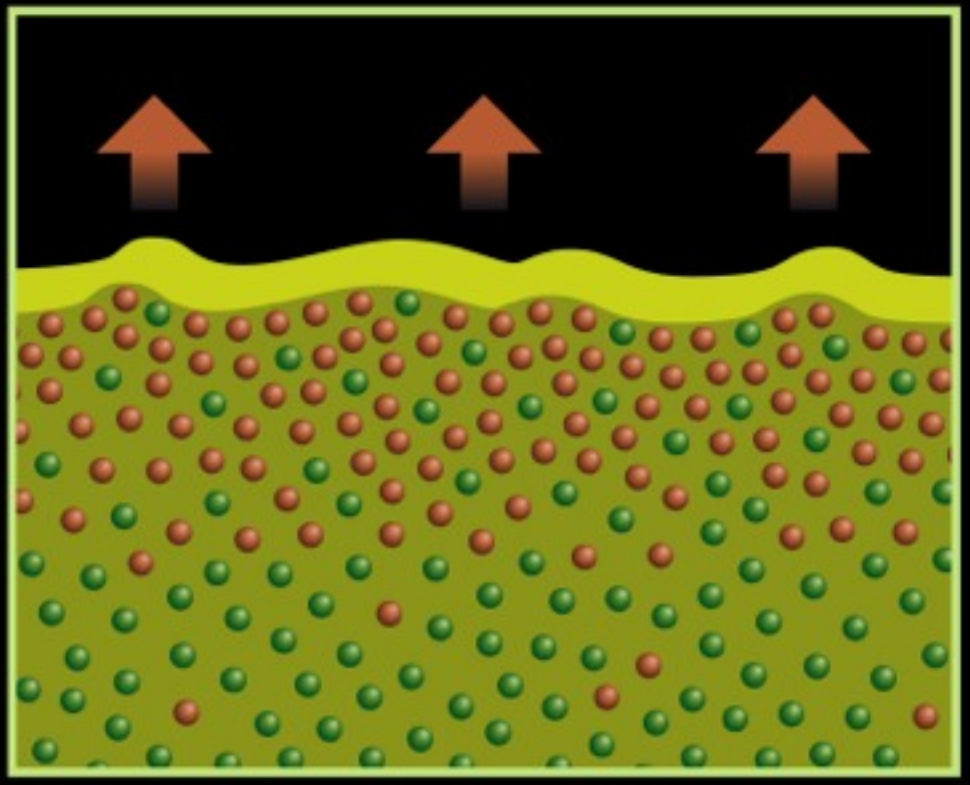


TIN TRICHLORO MONOBUTYL



- $SnCl_4$
- Organic Molecule
  (especially designed to make the entrance of tin easier into the glass chemical structure)
- Tin trichloro monobutyl ($C_4H_9SnCl_3$)
- Tin oxide (SnO_2)

SEPOAN 601 TC ATOMS CONTENT



IT CONTRIBUTES TO THE DISAPPEARANCE OF LATTICE DEFECTS

IT FAVORS THE OCUPPATION OF ACTIVE CENTERS

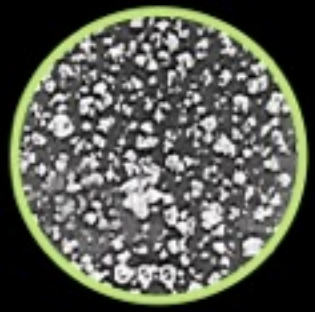
IT INCREASES THE CHEMICAL AFFINITY UNDER MOLECULAR LEVEL

Sn Si

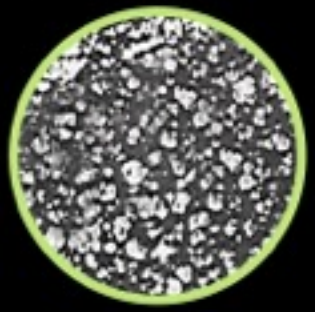
GLASS SURFACE

SEPOAN 601 TC

SCANNING ELECTRON MICROSCOPE

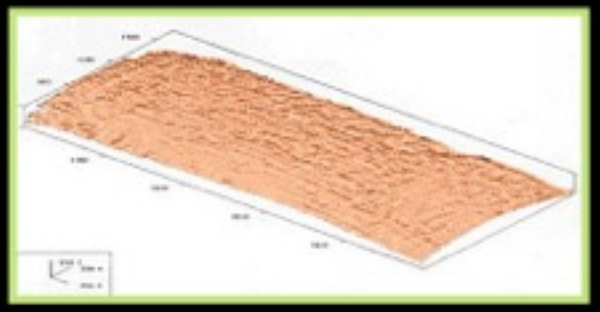


SAMPLE 1



SAMPLE 2

SCANNING TUNNELING MICROSCOPE

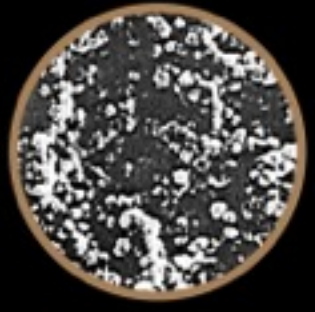


SAMPLE 3

TIN TRICHLORO MONOBUTYL

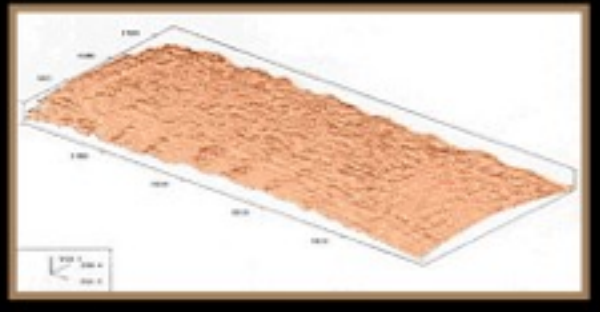
SCANNING ELECTRON MICROSCOPE

SAMPLE 1



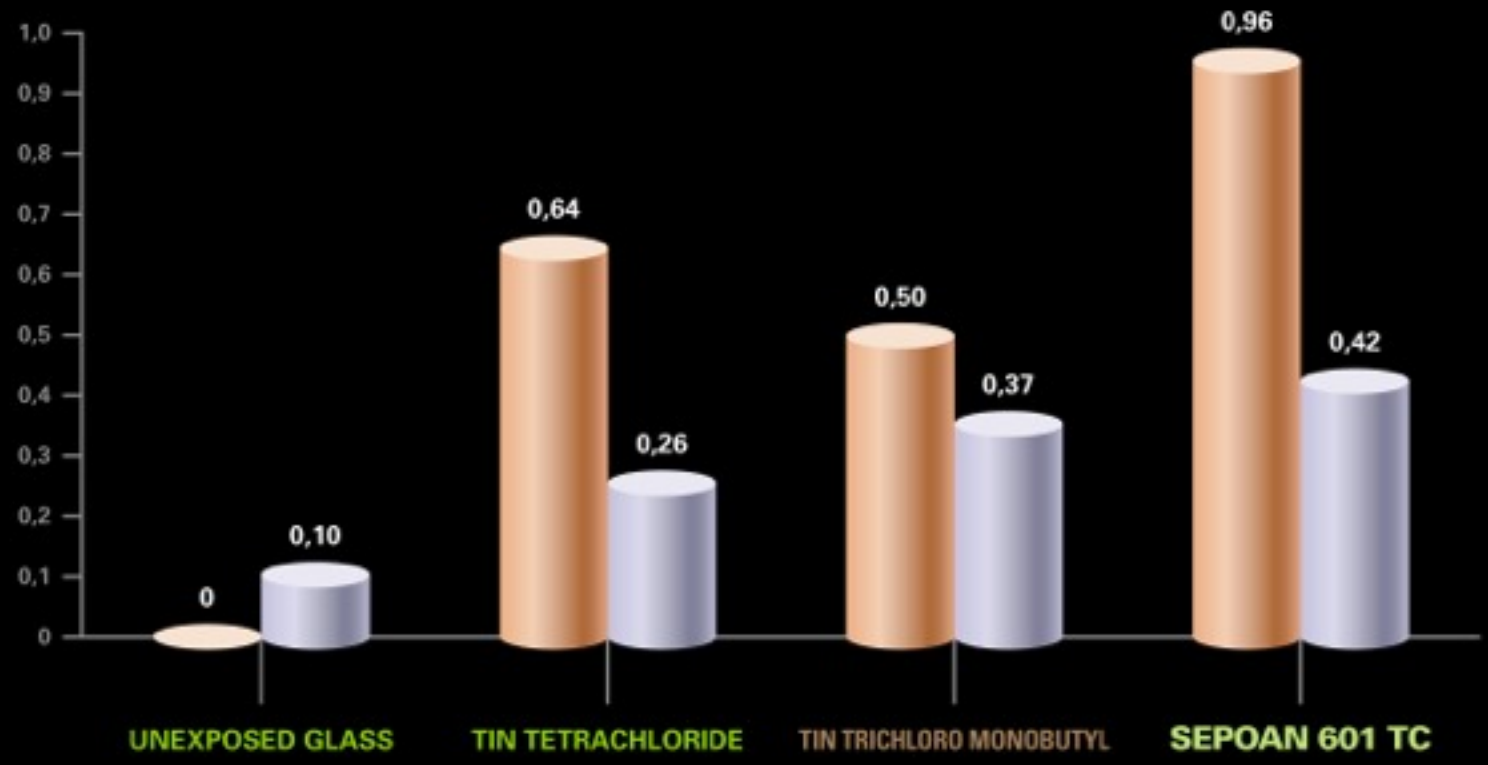
SAMPLE 2

SCANNING TUNNELING MICROSCOPE



SAMPLE 3

SUPERFICIAL ATOMIC RELATIONS



HEALTH AND SAFETY

CALCULATION OF STOICHIOMETRIC HIGHER QUANTITIES

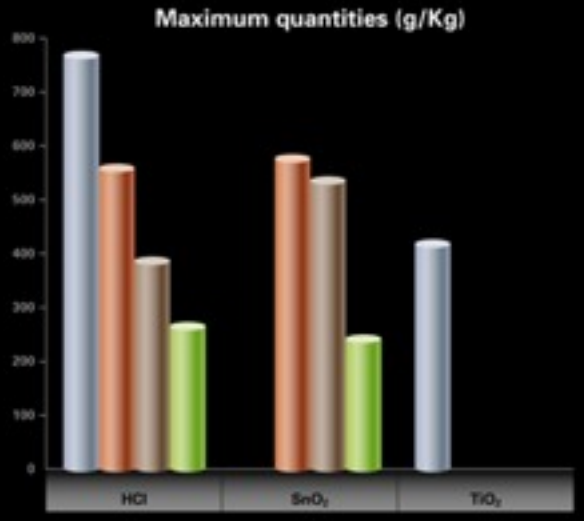
Tested products (1.000 g)	Expelled products (g) HCl	SnO_2	TiO_2
$TiCl_4$	768,83	-	420,75
$SnCl_4$	560,03	578,06	-
TIN TRICHLORO MONOBUTYL	388,02	534,02	-
SEPOAN 601 TC	263,21	242,78	-

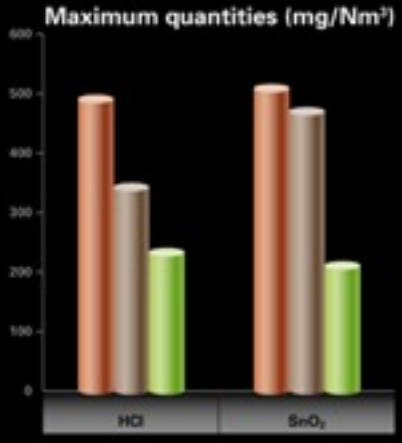
Per day
(Air flow 8 m³/min)

$SnCl_4$ (1,00Kg/día)
560.030 mg **HCl** / 11.520 m³/día = **48,6** mg/Nm³ **HCl**
578.060 mg **SnO_2** / 11.520 m³/día = **50,2** mg/Nm³ **SnO_2**

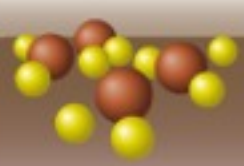
TIN TRICHLORO MONOBUTYL (1,00Kg/día)
388.020 mg **HCl** / 11.520 m³/día = **33,7** mg/Nm³ **HCl**
534.020 mg **SnO_2** / 11.520 m³/día = **46,4** mg/Nm³ **SnO_2**

SEPOAN 601 TC (1,00Kg/día)
263.210 mg **HCl** / 11.520 m³/día = **22,8** mg/Nm³ **HCl**
242.780 mg **SnO_2** / 11.520 m³/día = **21,1** mg/Nm³ **SnO_2**





COMPARATIVE TABLE

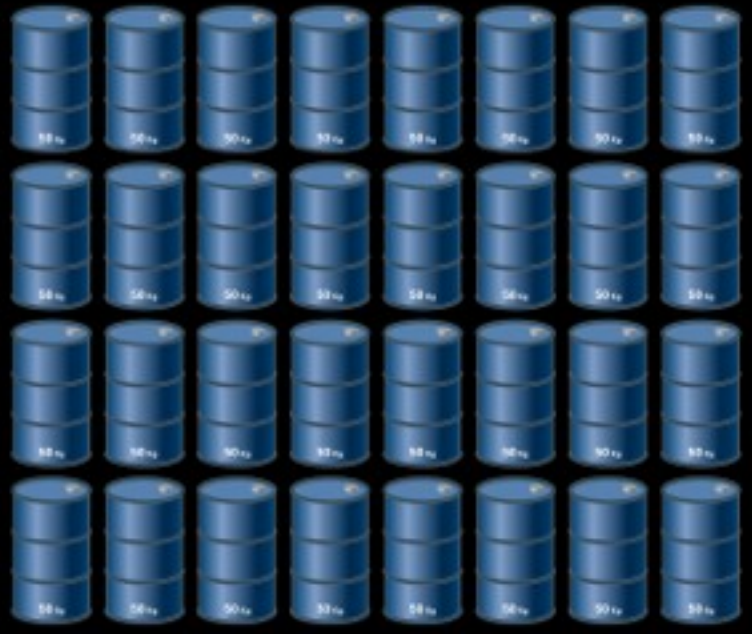
SEPOAN 601 TC	TIN TRICHLORO MONOBUTYL
 LOWER QUANTITY OF **Sn** y **Cl^-**	 HIGHER QUANTITY OF **Sn** y **Cl^-**
 LESS SMELL AROUND THE TUNNEL	 MORE SMELL AROUND THE TUNNEL
 LESS AGGRESSIVE FOR THE HANDLER (does not dry skin and lips)	 MORE AGGRESSIVE FOR THE HANDLER
 NO ORGANOMETALLIC BY-PRODUCTS	 POSSIBLE APPEARANCE OF DANGEROUS ORGANOMETALLIC BY-PRODUCTS

STORAGE (1.600 kg)

SEPOAN 601 TC

EASIER, FUNCTIONAL AND SAFER STORAGE

TIN TRICHLORO MONOBUTYL



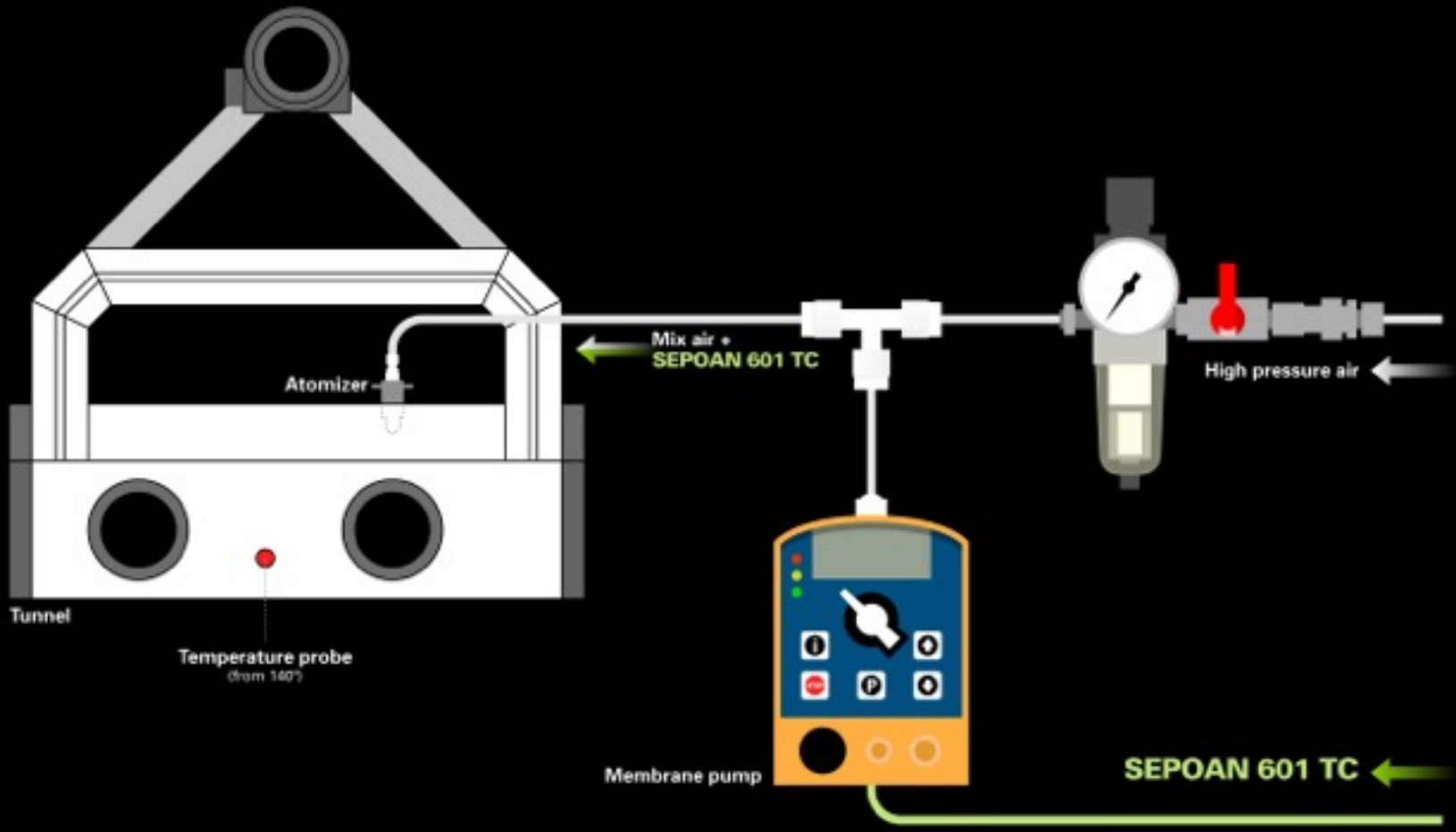
APPLICATION

SEPOAN KIT COATING SYSTEM

SEPOAN 601 TC
NEW APPLICATION SYSTEM

- Easy to use
- It goes for any type of tunnel
- Homogeneity
- Best performance in the market

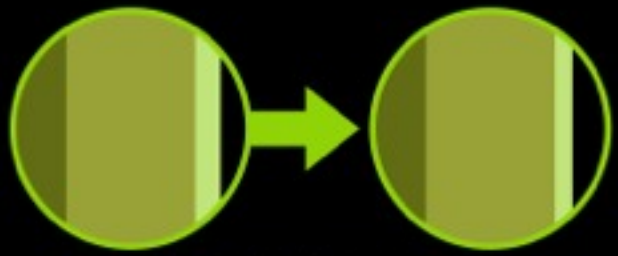
APPLICATION GENERAL DIAGRAM



RESISTANCE TESTS

After testing the resistance to scratch and abrasion, **SEPOAN 601 TC** was found to offer 10% more of resistance to scratch. This fact allows us to reduce CTU from 40-50 to 30-40.

TIN TRICHLORO MONOBUTYL



SEPOAN 601 TC

Very homogeneous cold treatment.
Manual application, bottle by bottle, with modified polyethylene wax.
Modified scratching equipment that reaches values higher than 30 kgf (30x2 kgf)
Fixed sliding angle: 11°
Number of tested bottles: 100

	SCRATCHING RESISTANCE (kgf)		
CTU	TIN TRICHLORO MONOBUTYL	SEPOAN 601 TC	DIFFERENTIAL (%)
0	1	1	0
10	7	8	+14
20	13	15	+15
25	22	23	+5
30	30	33	+10
40	55	59	+7
60	>60	>60	-

ENVIRONMENT

ENVIRONMENTAL COMMITMENT

In keeping with our environmental policy and considering sustainable evolution, we have created SEPOAN 601 TC, product that emits the lower quantity of HCl and SnO_2 in the market.

POINT 1

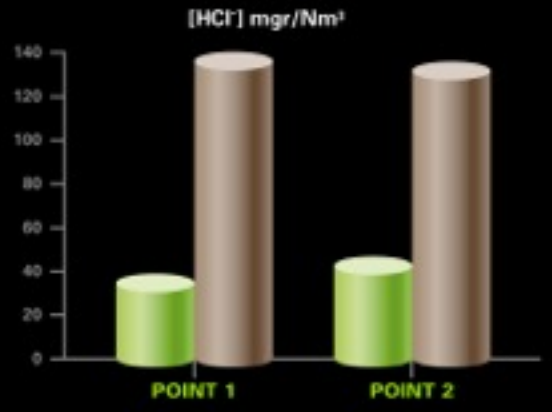
TIN TRICHLORO MONOBUTYL			SEPOAN 601 TC		
SAMPLE	[Cl⁻] mgr/Nm³	SUSPENSION SOLID PARTICLES (mgr/Nm³)	SAMPLE	[Cl⁻] mgr/Nm³	SUSPENSION SOLID PARTICLES (mgr/Nm³)
1,M1	131,6	12,3	1,S1	35,8	4,0
1,M2	138,9	12,5	1,S2	32,3	5,0
1,M3	141,5	15,1	1,S3	39,9	4,2
Average [Cl⁻] = 137,3 mgr/Nm³			Average [Cl⁻] = 36,0 mgr/Nm³		
Particles Average [Cl⁻] = 13,3 mgr/Nm³			Particles Average [Cl⁻] = 4,4 mgr/Nm³		

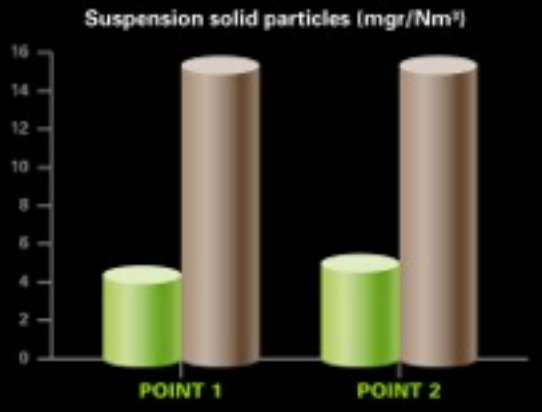
POINT 2

TIN TRICHLORO MONOBUTYL			SEPOAN 601 TC		
SAMPLE	[Cl⁻] mgr/Nm³	SUSPENSION SOLID PARTICLES (mgr/Nm³)	SAMPLE	[Cl⁻] mgr/Nm³	SUSPENSION SOLID PARTICLES (mgr/Nm³)
2,M1	145,5	15,6	2,S1	43,5	4,8
2,M2	129,3	12,2	2,S2	40,6	5,0
2,M3	128,6	14,8	2,S3	38,5	4,5
Average [Cl⁻] = 134,5 mgr/Nm³			Average [Cl⁻] = 40,9 mgr/Nm³		
Particles Average [Cl⁻] = 14,2 mgr/Nm³			Particles Average [Cl⁻] = 4,8 mgr/Nm³		

GASES ANALYTICAL
Comparative research

SEPOAN 601 TC
TIN TRICHLORO MONOBUTYL





FULL RECYCLING PLAN

A REVOLUTION IN GLASS TREATMENT

NO WASTES

FOR THE GLASS MANUFACTURER

We take away, with no aditional expense:

CHRONOLOGY AND LOCATION

SEPOAN 601 TC CHRONOLOGY

1996 → Start of laboratory tests

2000 → Start of semi-industrial works

2001 → Start of industrial application

2006 → Industrial application (50tm)

2008 → product release to the market

SEPOAN 601 TC IN SPAIN

SEPOAN 601 TC IN THE WORLD

SEPOAN 601 TC

Top quality and no waste producer product

Easy industrial application product

A product **improved in health and safety** at work.

A product **adapted to the needs** of the customer.

A product **specifically created for the treatment of glass containers**

A product that **improves the quality** of processed containers

REGULATIONS AND CERTIFICATES

- **Quality Management Certificate** according to **UNE Regulation ISO 9001**
- **Standardization Certificate** issued by **ECOEMBES**
- **Standardization Certificate** issued by **ECOACERO**
- **Waste Management and Haulage Certificate** issued by The Government of Murcia

SEPOAN 601 TC

- **Safety Data Sheet**
- **Technical Data Sheet**
- **Alimentary Certificate.**
- **Registro General Sanitario de Alimentos** (Alimentary Register)

GRUPO SEGURA RUIZ

OBJETIVES

- Our priority is the satisfaction of our customers
- Our economical success depends heavily on our customers trust in us
- Continuous improvement in every working process
  - More safety
  - Respect for the environment
  - Natural resources preservation and protection
- Competitive prices and quality

OUR PROGRAM

1. Standardization of processes and products

- People responsible for the process quality control
- Team work
- Continuing training program
- End product quality program
- Quality systems audity

2- Company standardization

- Quality control policy
- Quality objectives are detailed in quality plans for every level of the company

OUR EXPERIENCE

Specialist in process and product

- Own technology

Experience in customer management

- Built-in technical service for customer support

OUR PROPOSAL FOR BUSINESS SERVICES

Product experience

- Quality Assurance Certificate

Customer Support technical service

- Help/recommendation for the control of the process

“Glocal” supply

- Global and local

THANK YOU VERY MUCH

GRUPO SEGURA RUIZ