



**GRUPO SEGURA RUIZ**

- Company established in 1955 and set up entirely with family capital
- Iberian Peninsula leader in the revaluation of tinplate scrap

# LOCATION



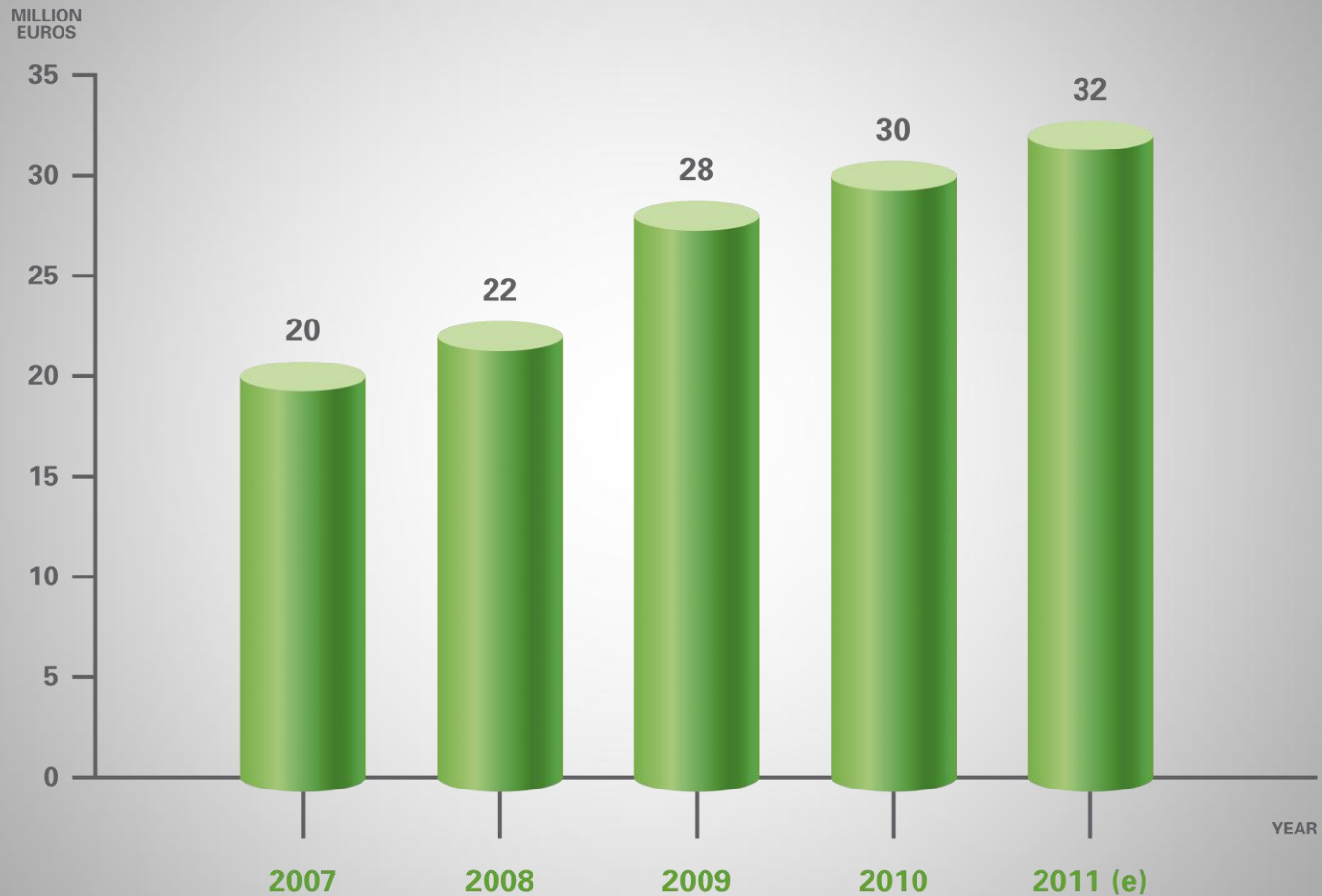
# SALES GEOGRAPHICAL DISTRIBUTION



|          |     |
|----------|-----|
| Spain    | 80% |
| France   | 10% |
| Brazil   | 5%  |
| Portugal | 4%  |
| Others   | 1%  |

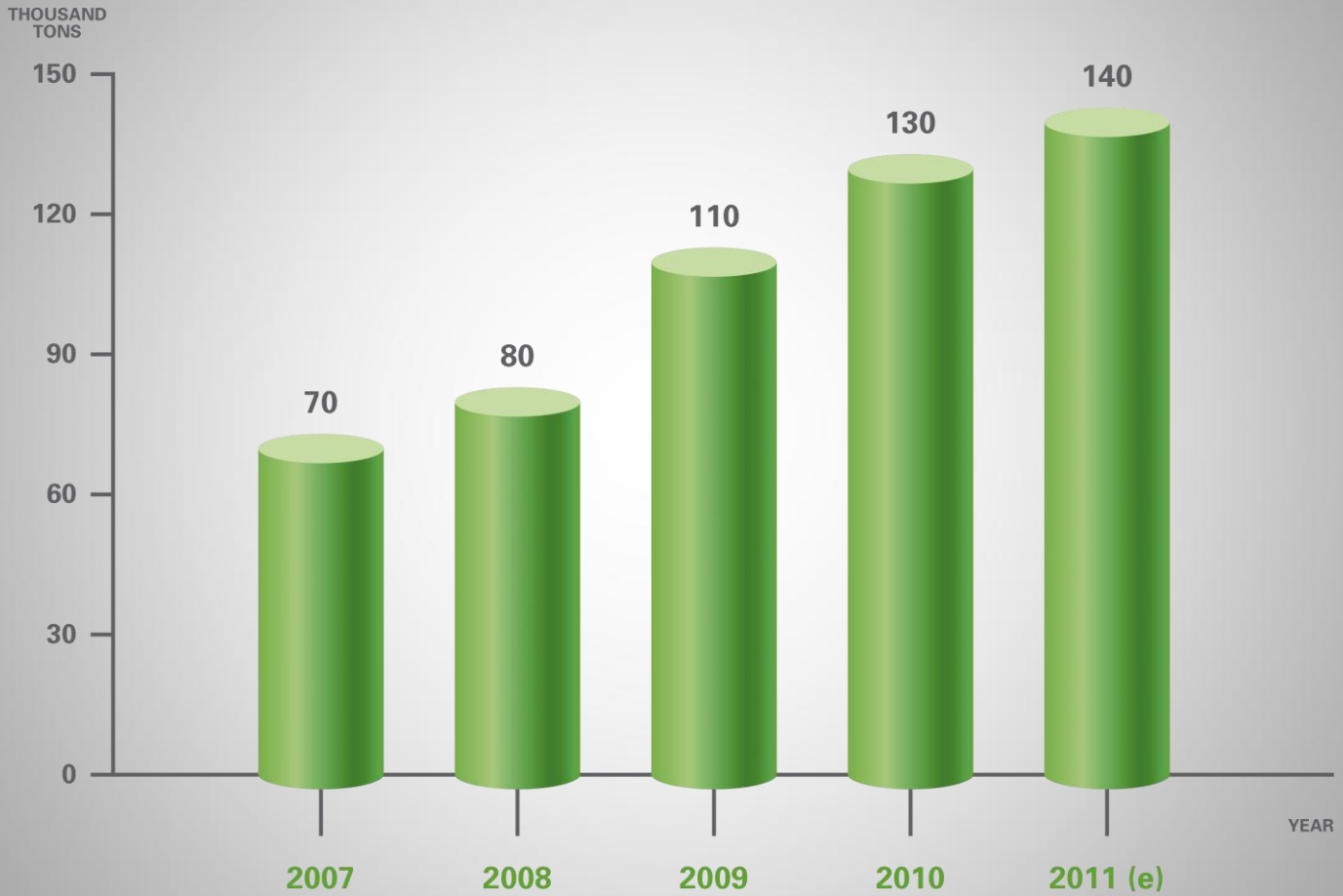
% GRUPO SEGURA RUIZ SALES IN EACH COUNTRY

# GROUP ANNUAL SALES

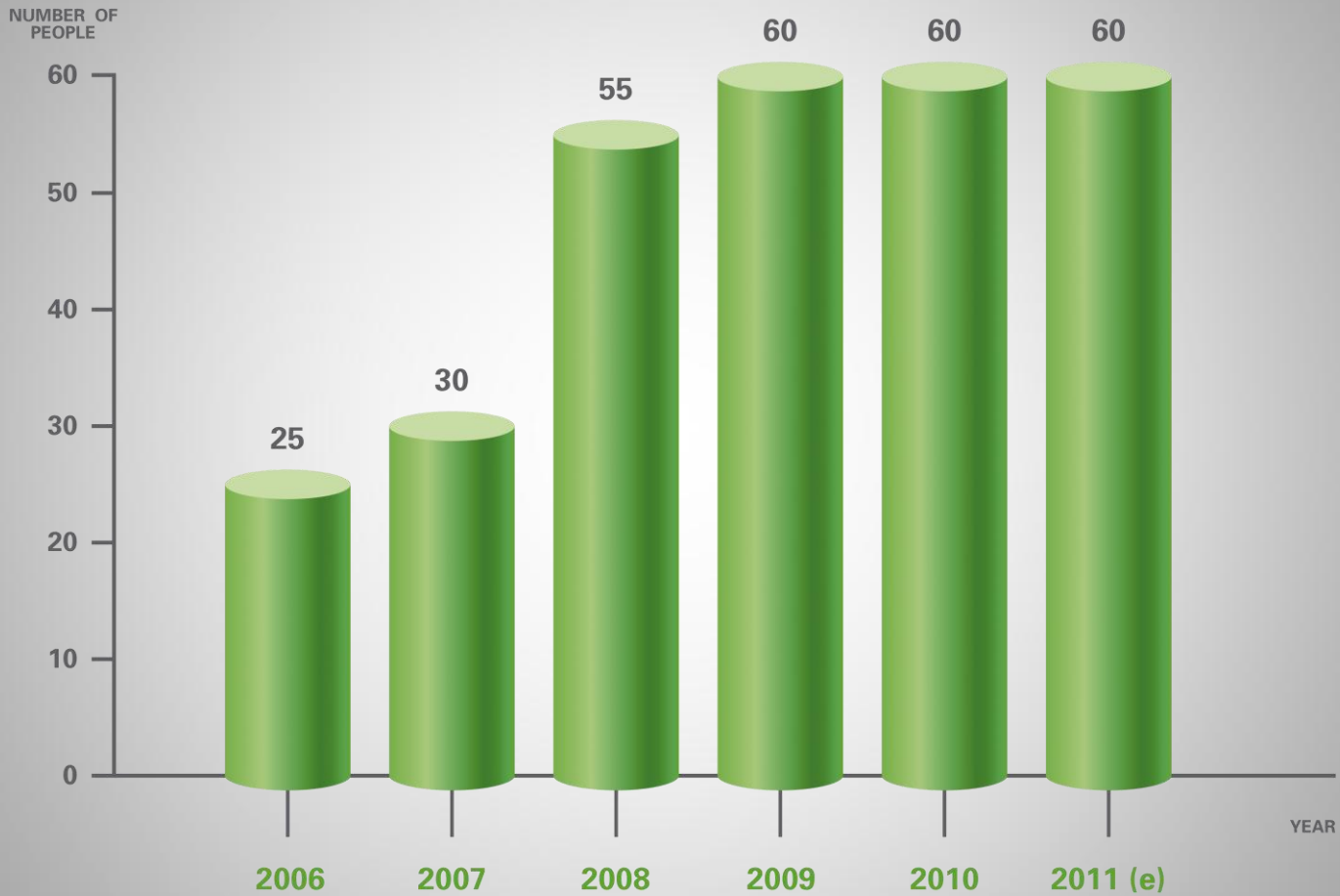


Total inversion in the last 10 years in **RESEARCH+DEVELOPMENT** = **5.500.000 €**

# VOLUME OF PROCESSED TONS



# STAFF



12 High Qualified Technical Experts

48 Specialized workers

# COMMERCIALIZED PRODUCTS & SERVICES



- Revaluation of metal scrap
- Iron
- Tin
- By-products (SEPOAN 601 TC)
- Applied technology



# GROUP COMPANIES



- Pedro Segura S.L.
- Chatarras y Metales Segura S.A.
- Segura Ruiz Troquelados S.L.
- Valfer S.L.
- Recibot S.L.
- G2 Flexodigital S.L.
- Metalmed S.L.
- Division Quimica Segura S.L.



# DIVISIÓN QUÍMICA

## GRUPO SEGURA RUIZ

**CHEMICAL DIVISION**  
**OF GRUPO SEGURA RUIZ**



SEPOAN 601 TC



# SEPOAN 601 TC

$\text{SnCl}_4$  42%

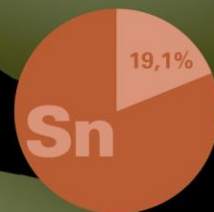
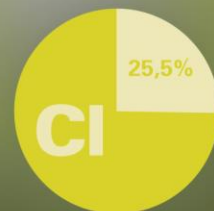
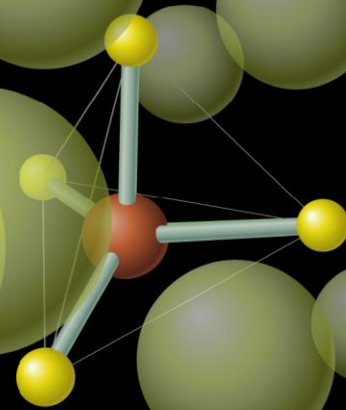
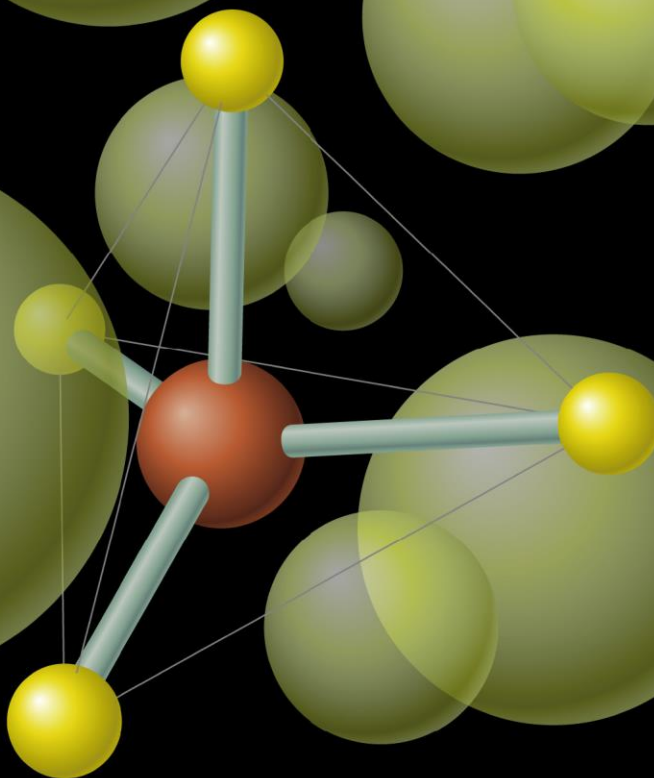
Aliphatic polyalcohols 45%

Hydrochloric acid 8%

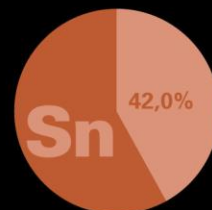
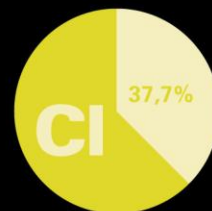
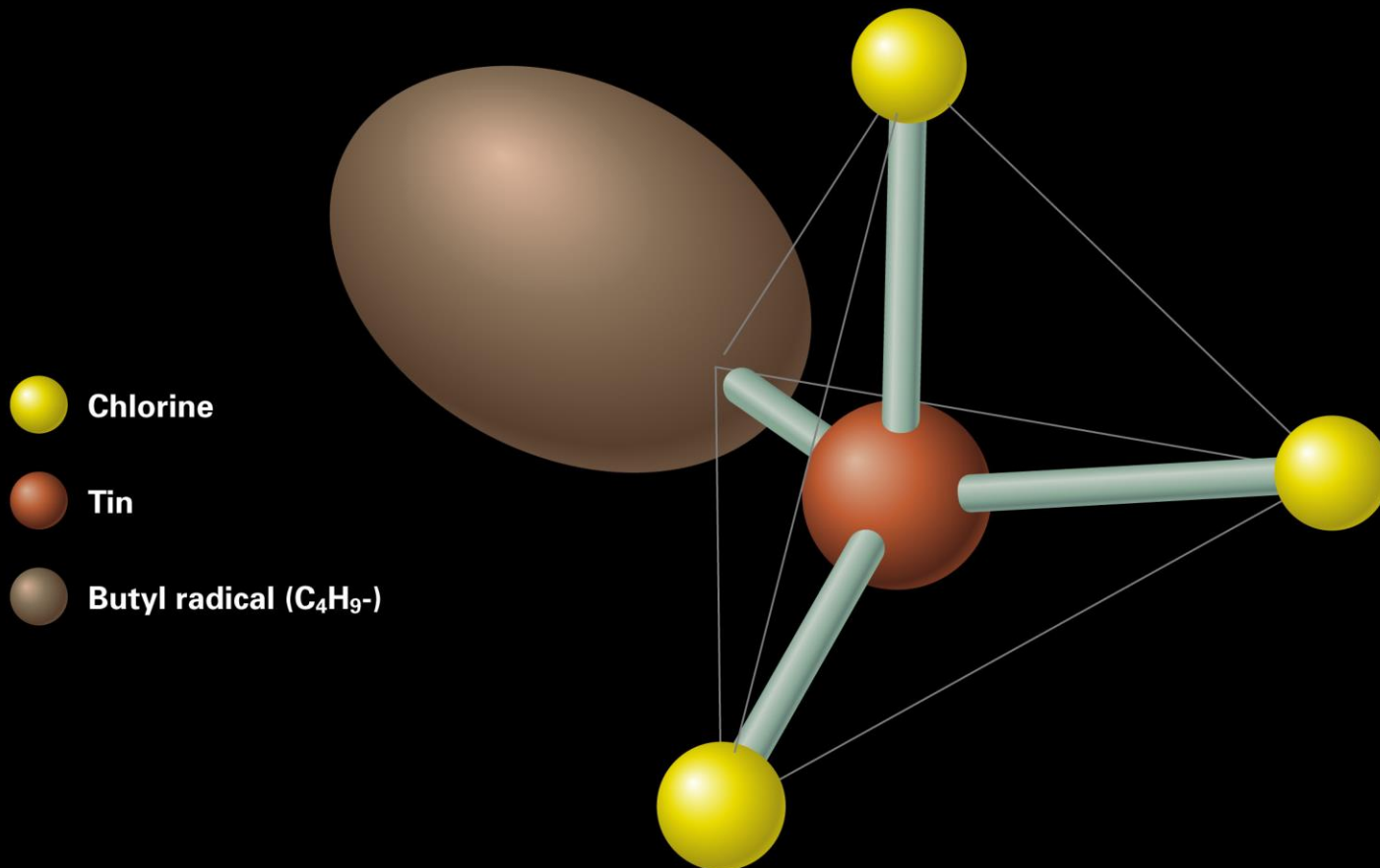
Soluble Salts ~5%

● Chlorine

● Tin



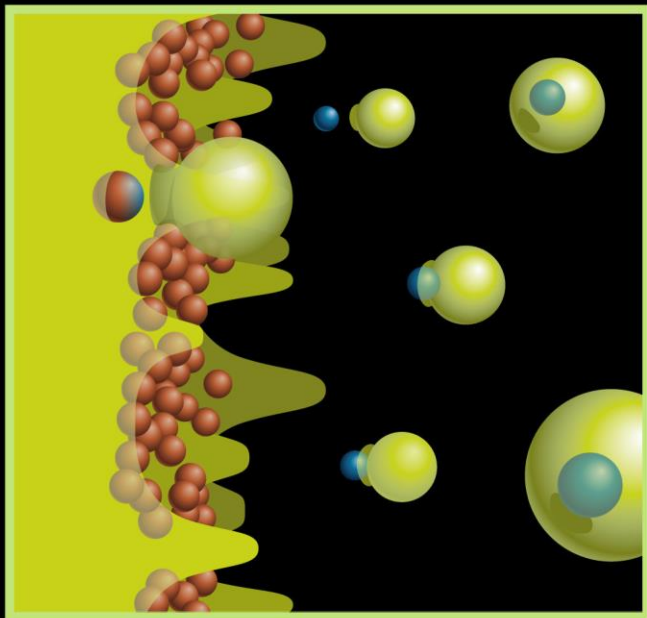
# TIN TRICHLORO MONOBUTYL



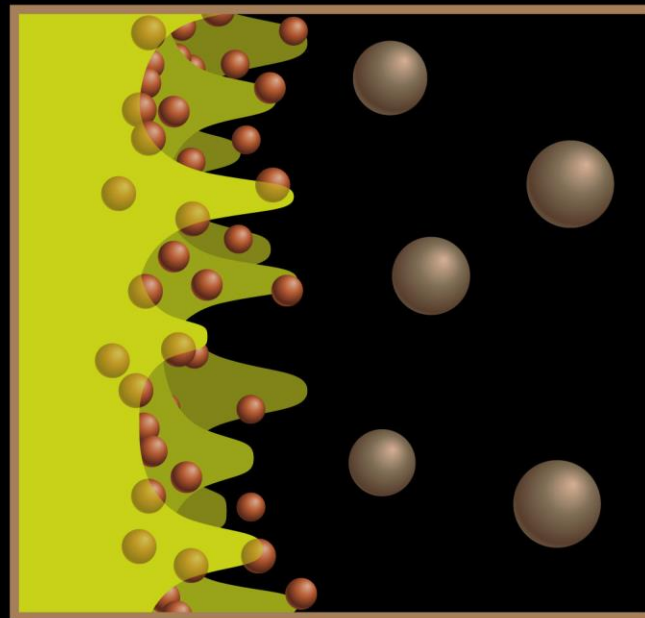


# MECHANISM OF ACTION COMPARISON

## SEPOAN 601 TC



## TIN TRICHLORO MONOBUTYL



●  $\text{SnCl}_4$



**Organic Molecule**

(especially designed to make the entrance of tin easier into the glass chemical structure)



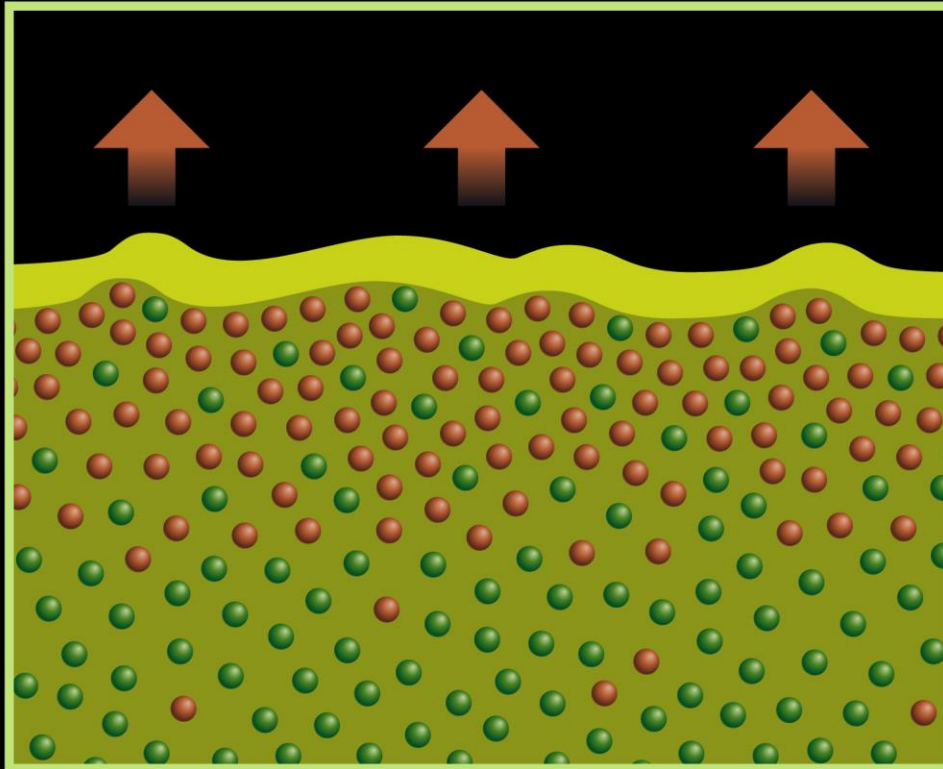
**Tin trichloro monobutyl ( $\text{C}_4\text{H}_9\text{SnCl}_3$ )**



**Tin oxide ( $\text{SnO}_2$ )**



# SEPOAN 601 TC ATOMS CONTENT



**IT CONTRIBUTES  
TO THE  
DISAPPEARANCE  
OF LATTICE DEFECTS**

**IT FAVORS  
THE OCCUPATION  
OF ACTIVE  
CENTERS**

**IT INCREASES  
THE CHEMICAL  
AFFINITY UNDER  
MOLECULAR LEVEL**

 Sn

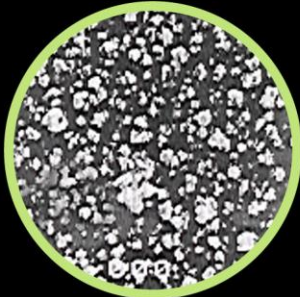
 Si

# GLASS SURFACE

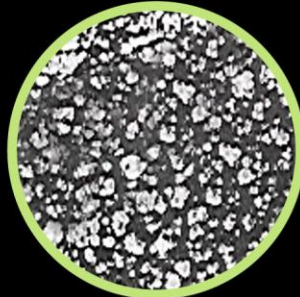


## SEPOAN 601 TC

SCANNING ELECTRON MICROSCOPE

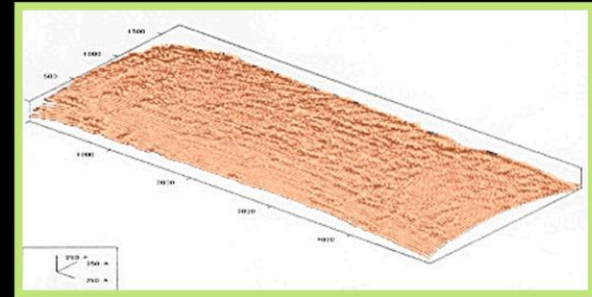


SAMPLE 1



SAMPLE 2

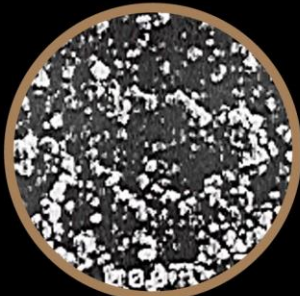
SCANNING TUNNELING MICROSCOPE



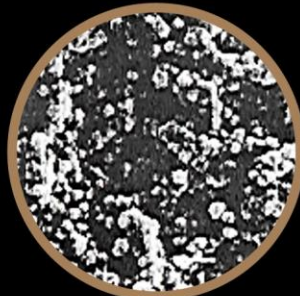
SAMPLE 3

## TIN TRICHLORO MONOBUTYL

SCANNING ELECTRON MICROSCOPE

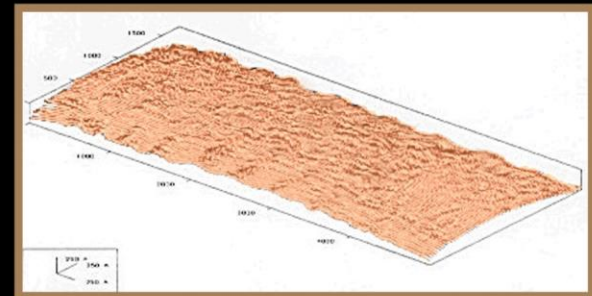


SAMPLE 1



SAMPLE 2

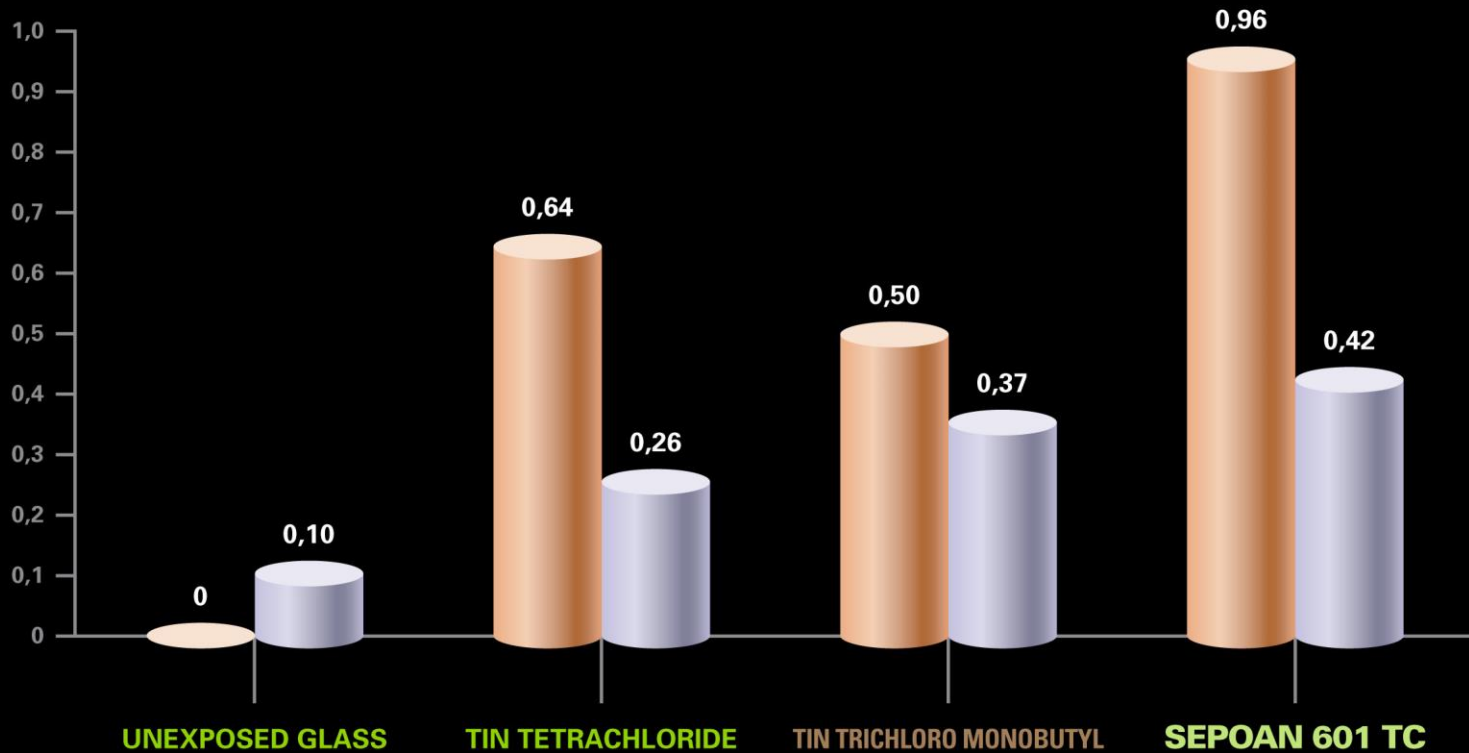
SCANNING TUNNELING MICROSCOPE



SAMPLE 3



# SUPERFICIAL ATOMIC RELATIONS



Sn/Si



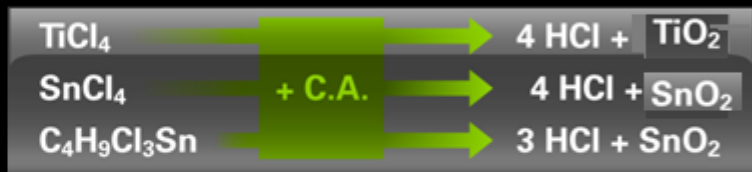
Ca/Si



# **HEALTH AND SAFETY**



# CALCULATION OF STOICHIOMETRIC HIGHER QUANTITIES



| Tested products (1.000 g) | Expelled products (g) |                  |                  |
|---------------------------|-----------------------|------------------|------------------|
|                           | HCl                   | SnO <sub>2</sub> | TiO <sub>2</sub> |
| TiCl <sub>4</sub>         | 768,83                | -                | 420,75           |
| SnCl <sub>4</sub>         | 560,03                | 578,06           | -                |
| TIN TRICHLORO MONOBUTYL   | 388,02                | 534,02           | -                |
| SEPOAN 601 TC             | 263,21                | 242,78           | -                |

Per day

(Air flow 8 m<sup>3</sup>/min)

**SnCl<sub>4</sub>** (1,00Kg/día)

560.030 mg HCl / 11.520 m<sup>3</sup>/día = 48,6 mg/Nm<sup>3</sup> HCl

578.060 mg SnO<sub>2</sub> / 11.520 m<sup>3</sup>/día = 50,2 mg/Nm<sup>3</sup> SnO<sub>2</sub>

**TIN TRICHLORO MONOBUTYL** (1,00Kg/día)

388.020 mg HCl / 11.520 m<sup>3</sup>/día = 33,7 mg/Nm<sup>3</sup> HCl

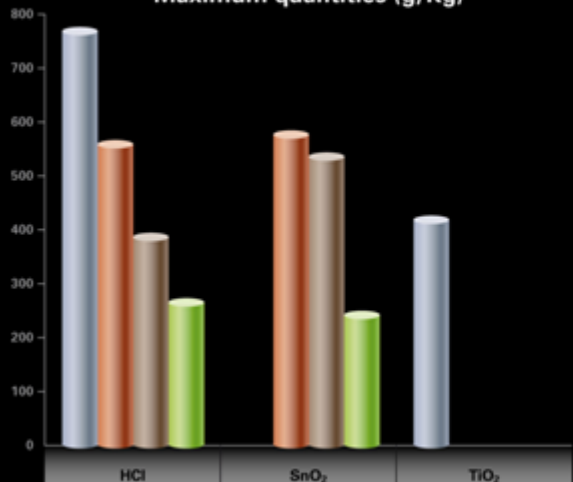
534.020 mg SnO<sub>2</sub> / 11.520 m<sup>3</sup>/día = 46,4 mg/Nm<sup>3</sup> SnO<sub>2</sub>

**SEPOAN 601 TC** (1,00Kg/día)

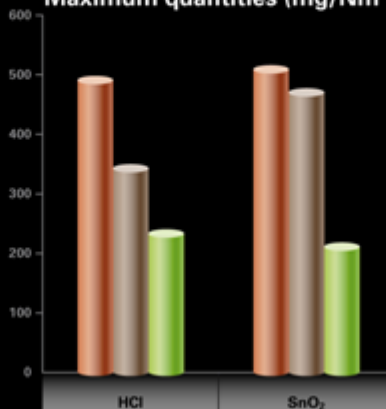
263.210 mg HCl / 11.520 m<sup>3</sup>/día = 22,8 mg/Nm<sup>3</sup> HCl

242.780 mg SnO<sub>2</sub> / 11.520 m<sup>3</sup>/día = 21,1 mg/Nm<sup>3</sup> SnO<sub>2</sub>

Maximum quantities (g/Kg)



Maximum quantities (mg/Nm<sup>3</sup>)

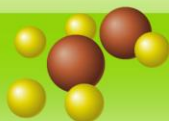


■ TiCl<sub>4</sub>  
■ SnCl<sub>4</sub>  
■ TIN TRICHLORO MONOBUTYL  
■ SEPOAN 601 TC

# COMPARATIVE TABLE



## SEPOAN 601 TC



LOWER QUANTITY  
OF  $\text{Sn}_y \text{Cl}^-$



LESS SMELL  
AROUND  
THE TUNNEL

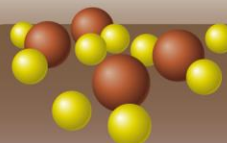


LESS AGGRESSIVE  
FOR THE HANDLER  
(does not dry skin and lips)



NO ORGANOMETALLIC  
BY-PRODUCTS

## TIN TRICHLORO MONOBUTYL



HIGHER QUANTITY  
OF  $\text{Sn}_y \text{Cl}^-$



MORE SMELL  
AROUND  
THE TUNNEL



MORE AGGRESSIVE  
FOR THE HANDLER

**DIBUTYL  
TRIBUTYL  
TETRABUTYL**

POSSIBLE APPEARANCE  
OF DANGEROUS  
ORGANOMETALLIC  
BY-PRODUCTS

# STORAGE (1.600 kg)

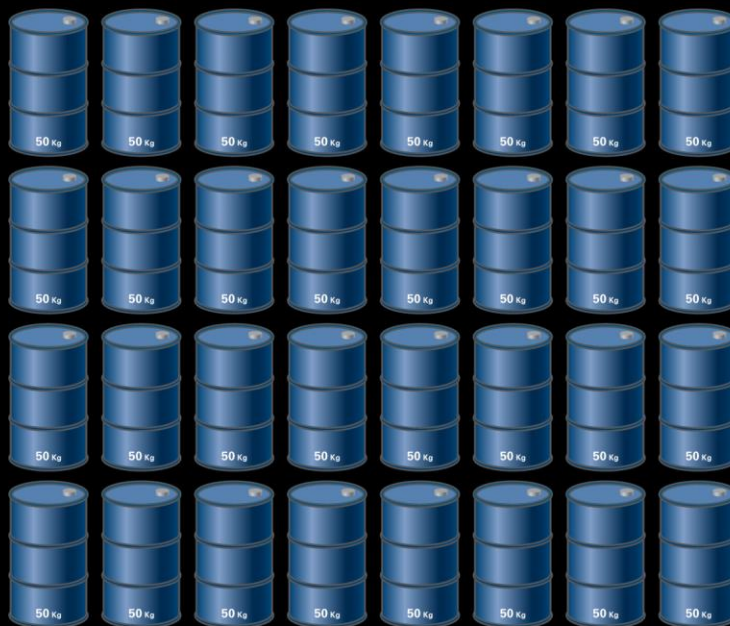


## SEPOAN 601 TC



EASIER, FUNCTIONAL AND SAFER STORAGE

## TIN TRICHLORO MONOBUTYL





# **APPLICATION**

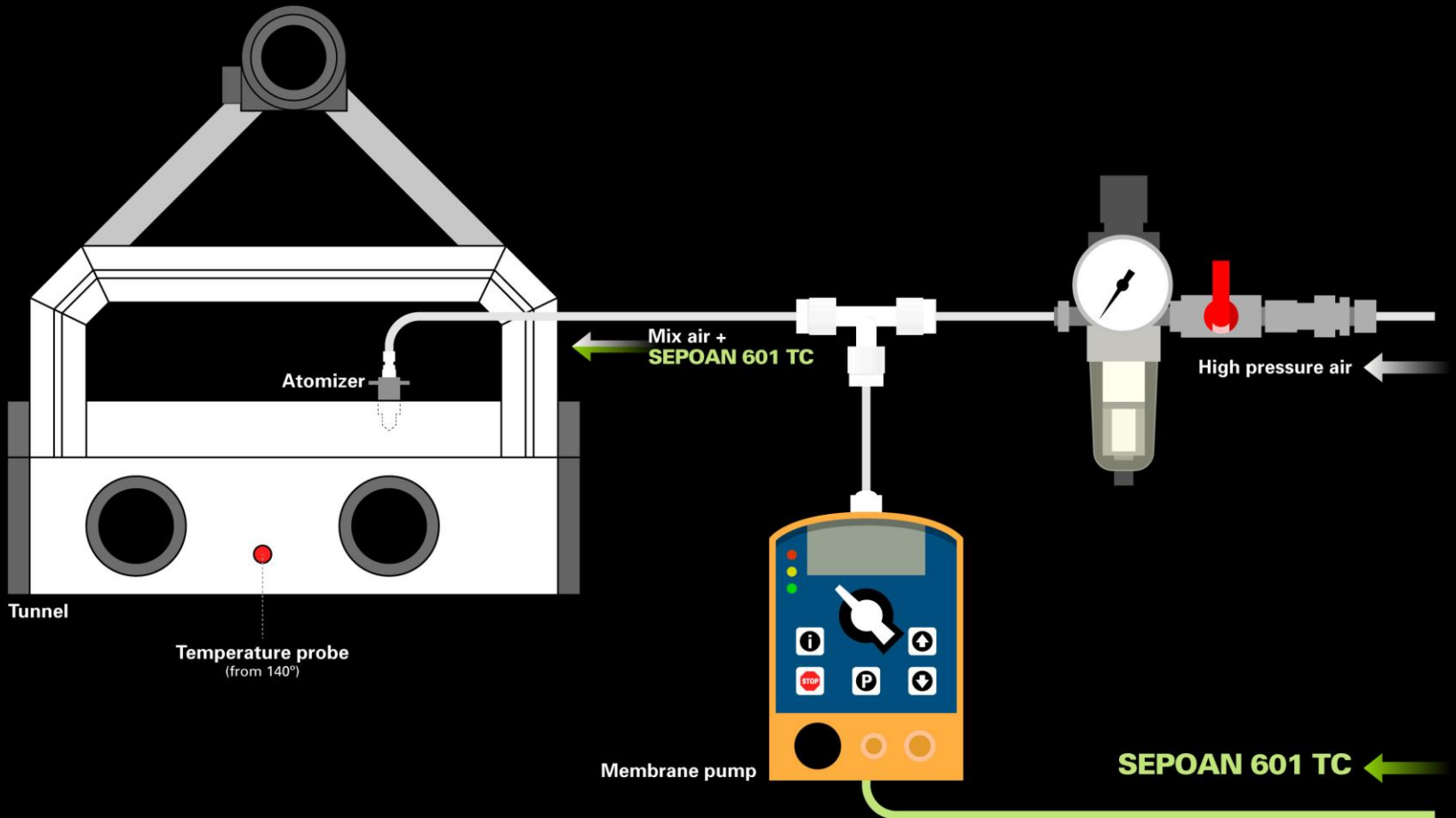


# **SEPOAN** **KIT COATING SYSTEM**

## **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

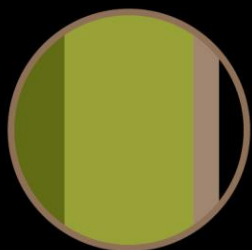




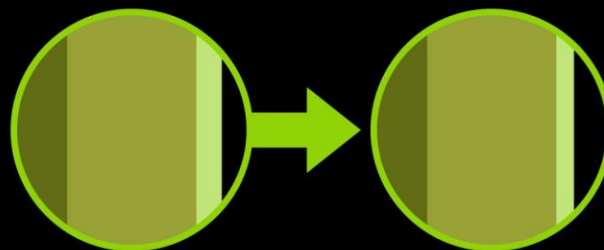


# RESISTANCE TESTS

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

| CTU | SCRATCHING RESISTANCE (kgf) |               | DIFFERENTIAL (%) |
|-----|-----------------------------|---------------|------------------|
|     | TIN TRICHLORO MONOBUTYL     | SEPOAN 601 TC |                  |
| 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

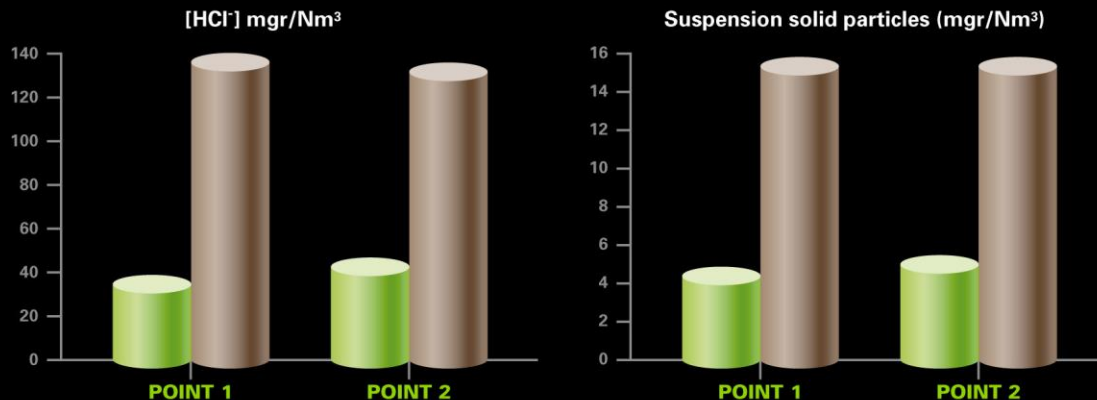


# ENVIRONMENTAL COMMITMENT

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<sub>2</sub> in the market.

| POINT 1 | TIN TRICHLORO MONOBUTYL   |  |   | SEPOAN 601 TC  |  |   |
|---------|---|--|---|--|--|---|
|         | SAMPLE  | [Cl <sup>-</sup> ] mgr/Nm <sup>3</sup> | SUSPENSION SOLID PARTICLES (mgr/Nm <sup>3</sup> ) | SAMPLE   | [Cl <sup>-</sup> ] mgr/Nm <sup>3</sup> | SUSPENSION SOLID PARTICLES (mgr/Nm <sup>3</sup> ) |
|         | 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 <sup>-</sup> ] = 137,3 mgr/Nm <sup>3</sup>          |  |   | Average [Cl <sup>-</sup> ] = 36,0 mgr/Nm <sup>3</sup>          |  |   |
| POINT 2 | Particles Average [Cl <sup>-</sup> ] = 13,3 mgr/Nm <sup>3</sup> |  |   | Particles Average [Cl <sup>-</sup> ] = 4,4 mgr/Nm <sup>3</sup> |  |   |
|         | TIN TRICHLORO MONOBUTYL   |  |   | SEPOAN 601 TC  |  |   |
|         | SAMPLE  | [Cl <sup>-</sup> ] mgr/Nm <sup>3</sup> | SUSPENSION SOLID PARTICLES (mgr/Nm <sup>3</sup> ) | SAMPLE   | [Cl <sup>-</sup> ] mgr/Nm <sup>3</sup> | SUSPENSION SOLID PARTICLES (mgr/Nm <sup>3</sup> ) |
|         | 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 <sup>-</sup> ] = 134,5 mgr/Nm <sup>3</sup>          |  |   | Average [Cl <sup>-</sup> ] = 40,9 mgr/Nm <sup>3</sup>          |  |   |
|         | Particles Average [Cl <sup>-</sup> ] = 14,2 mgr/Nm <sup>3</sup> |  |   | Particles Average [Cl <sup>-</sup> ] = 4,8 mgr/Nm <sup>3</sup> |  |   |

## GASES ANALYTICAL Comparative research



# FULL RECYCLING PLAN



A REVOLUTION IN GLASS TREATMENT

# NO WASTES

FOR THE GLASS MANUFACTURER

We take away, with no additional expense:



Solid waste in  
tunnels and tubes  
( $\text{SnO}_2$  + hydroxides + chloride)



Empty  
containers



# **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

## **1. Standardization of processes and products**

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

## **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**