



**REACH and chromates
- strategic and economic challenges
for Tata Steel as
international operating company**

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REACH and chromates

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Three main situations

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User of critical chrome coated article used in manufacture

3.2

Development of alternative with unique performance requirement

3.3

Conversion ongoing, some applications critical

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1.1 Introduction - Tata and Tata Steel



Tata

- Tata Group established in 1868
- Tata businesses span 7 major industry sectors
- Total revenues over \$ 100 billion
- Tata Steel Ltd acquired Corus Group plc in 2007 and rebranded to Tata Steel in 2010



Tata Steel

- Top 12 global steel producer
- Annual crude steel capacity of 28 million tonnes
- Serving customer all across the globe
- Turnover in 2014-15 approximately \$ 25 billion

1.2 Our comprehensive product portfolio

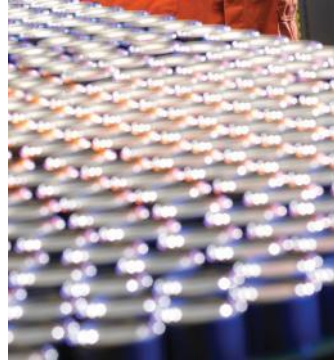
Supporting customers with steel products that make a difference



A partner for many automotive customers for Body in White, Chassis and Suspension, Seating and Interior and Powertrain



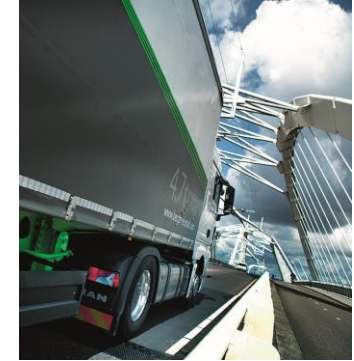
Steel products that go into just about every part of a wind turbine, from the foundations structure to the gearings and bearings in the nacelle



One of Europe's leading suppliers of high quality innovative packaging steels



Offering a wide range of components and systems for building envelope, structural and fit-out applications



Supplier of high strength steels for the manufacture of steel semi-trailers that are both high quality and lightweight

1.3 Tata Steel committed to adopt best environmental practices in all operations



We seek to improve environmental performance through

- Sustainable usage of raw materials
- Water conservation and treatment
- Energy conservation and waste utilisation
- Emissions reduction

2. Authorisation of Chromium trioxide

Chromium trioxide

Main classification – Carcinogenic 1A and Mutagenic 1B



Dates and consequences

- Chromium trioxide **Prioritised** (April 2013)
 - 21st March 2016
Deadline for Application
 - 21st September 2017
Sunset Date
- **Sunset Date**
Use of substance illegal, unless European Commission has specifically granted Authorisation

Application for Authorisation

- **Chemical Safety Report**
Physical, chemical and toxicological data
- **Analysis of Alternatives**
Proof that no suitable alternative is available
- **Socio Economic Analysis**
Comparison of health and economic impact

3. Three different situations

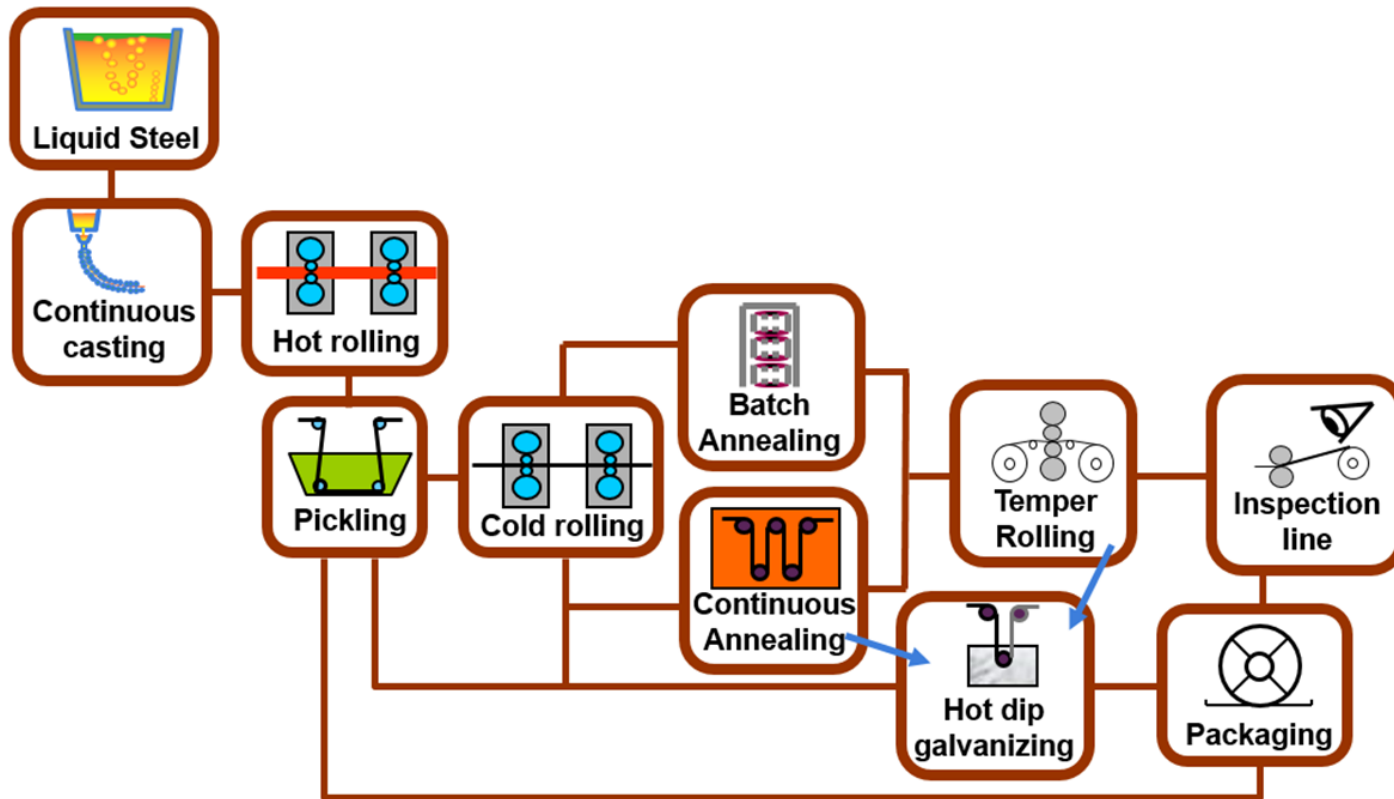
1. Critical chrome coated articles used in manufacture

2. Development alternative with unique performance requirements

3. Conversion progressing, some applications critical

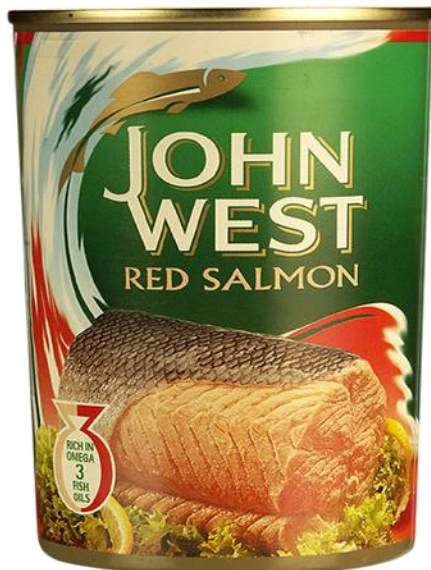
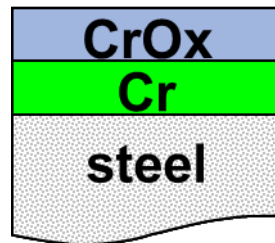
3.1 Critical chrome coated article

Work rolls are critical for Cold and Temper Mill



- Loss of production and quality dominant economic impact
- Socio Economic Analysis easily becomes overly technical
- ‘Active support’ to Application for Authorisation only option

3.2 Development of article with unique performance



ECCS

- Chromium trioxide mainly used for manufacture of Electrolytic Chromium Coated Steel (ECCS)
- ECCS economical alternative for tinplate with unique property profile
- European project to investigate alternatives for chromates in ECCS manufacture unsuccessful

Status

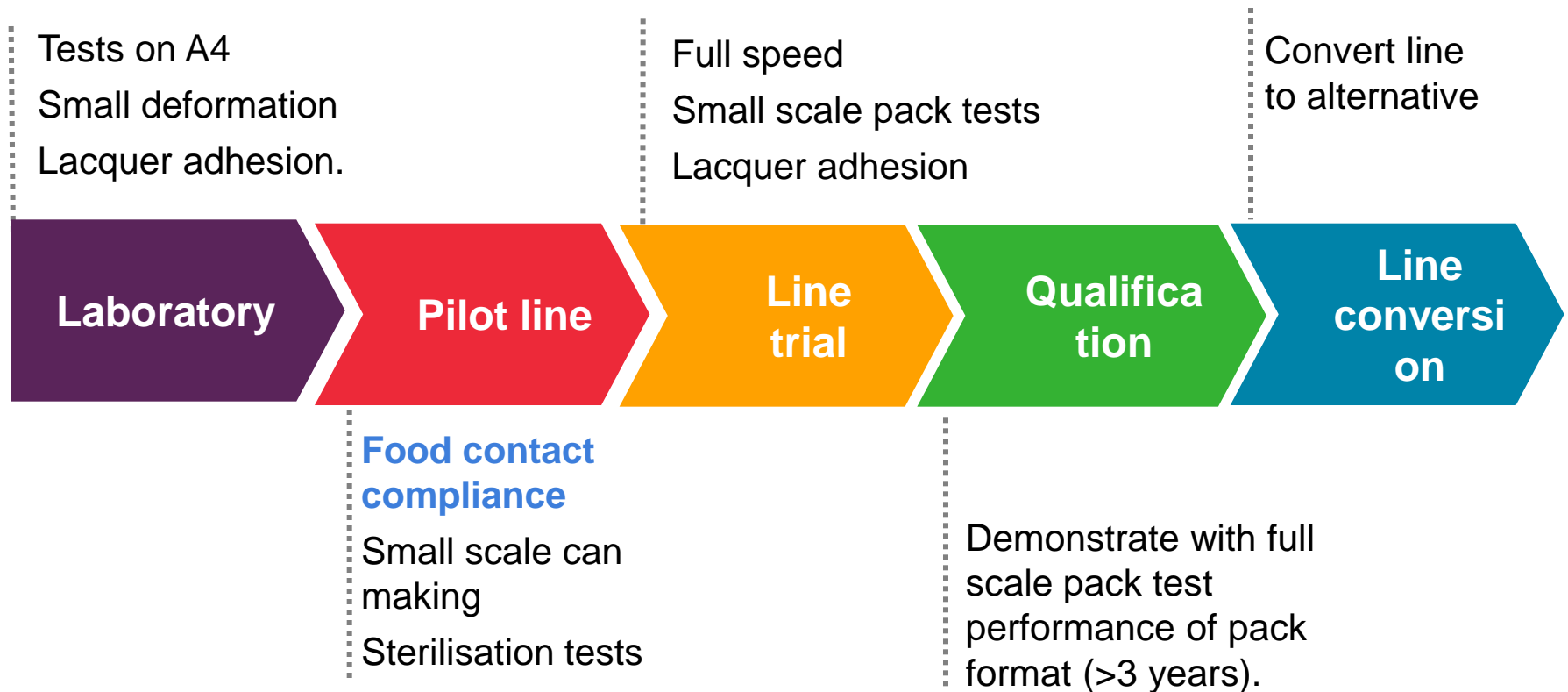
- New alternative identified in research, now needs to be scaled up and proven
- Authorisation required

Protact unique application of ECCS

- combines robustness of steel with versatility of plastic
- provides even more efficient material solution for can

3.2 Complex supply chain

Final canned food product needs to be food safe after can making and food processing, in retail and at home



robust quantification of market loss quite a challenge

3.3 Conversion progressing

- Other down stream operations

Color coated

- Plan to replace in review period
- Some critical applications require more time for qualification
- Only for reduction of risks of conversion Authorisation (review period) required

Tubes

- For Tubes limited use of treatments with chromates
- Alternative tested and developed with supplier
- Close to sunset date final conversion planned
- Only for reduction of risk of conversion Authorisation (review period) required

4. Three authorisation scenarios

1. Critical chrome coated article used in manufacture – *active support*

- No alternative yet available
- Supplied chrome plated articles critical part of manufacture process
- No driving seat possible, only viable option is **active support**
- Collection of economic data easily becomes overly technical

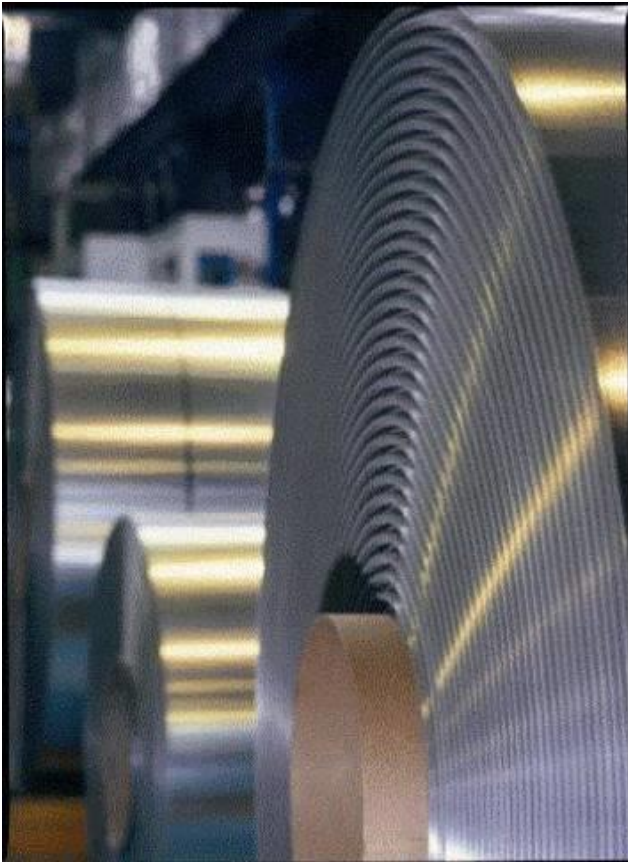
2. Alternative in development – *cooperative driving seat*

- Joint approach both strength and threat, not only for Socio Economic Analysis
- Impact of poor performance dominant factor in Socio Economic Analysis
- Key are food contact legislation and **coordinated market conversion**

3. Conversion progressing – *monitor regulatory developments*

- Most of market converted, some critical applications challenging
- To reduce risk of conversion **monitor regulatory developments**

5. Final general remarks



- Tata Steel committed to replace chromates as soon as possible
- Tata Steel spent considerable efforts on Research and Development for replacement of Chromates
- Tata Steel demonstrated to replace where possible and only continue where required
- Significant part of review period of Authorisation is required for market conversion

TATA STEEL



**Together we make
the difference**

