

# Saltigo Fine Chemical Intermediates

**saltigo**  
customized competence

A company of the  
**LANXESS**  
Group



THIS IS WHAT  
SETS US APART  
AS A CUSTOM  
MANUFACTURING  
PROVIDER

## About Saltigo

### Top class custom manufacturing

Saltigo, a 100% subsidiary of the specialty chemicals company LANXESS, was established as an independent business on the fine chemicals market in April 2006.

Saltigo specializes in custom manufacturing, the production of active ingredients and intermediates on a contractual basis. We operate globally across over ten production facilities. With hundreds of active projects, we contribute to the competitive market success of our customers in the fine chemicals, agricultural and pharmaceutical industries. You benefit from:

- broad spectrum of established technologies,
- integrated plant network within the CHEMPARK infrastructure,
- highly efficient project management system, which keeps you informed of all the latest updates on your project in real time,
- large and growing portfolio of intellectual property and patents, as well as from unique, proprietary procedures and processes.

This makes us an ideal partner for all customers from innovative industries. Because for them in particular, outsourcing is a matter of trust.





## OUTSOURCING IN CHEMISTRY & INNOVATIVE SOLUTIONS

### Outsourcing in chemistry

Saltigo is there for you

**We support our customers throughout the entire product life cycle.**

**This includes:**

- Our systems are state-of-the-art and can be efficiently modified. We adapt existing processes for you. Continuous improvement is our standard practice.
- Our Intellectual Property Management ensures that our customers' information are kept strictly confidential and protected. You also benefit from our global purchasing and partner network.
- Our backwards integration into the specialty chemicals groups within LANXESS ensures access to a wide range of raw materials.

### Saltigo has its own highly innovative product range

**Beyond custom manufacturing, we offer innovative solutions to industrial customers. These are:**

- Fine Chemical Intermediates
- Saltidin®/Icaridin insect-repellent



## SALTIGO CONVINCES WITH OUTSTANDING & POWERFUL NETWORK

### Versatile technology base

- Broad permits, versatile technology
- Complex syntheses in many scales
- Wide-ranging equipment and material mix

### Chemical park integration

- Excellent infrastructure
- Broad recycling capacities
- Waste water treatment, incineration and landfill on site

### Excellent network

- 10 connected plants in Germany
- Integrated in LANXESS group
- Process Development & Analytics located next door

### HSEQ

- ISO certified
- Reliable quality
- High safety standards



## SALTIGO OFFERS CHALLENGING CHEMICALS AND TECHNOLOGIES IN PROCESS DEVELOPMENT AND MANUFACTURING

### Challenging reagents

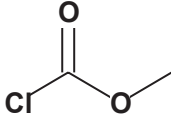
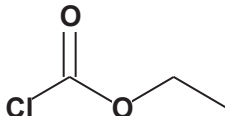
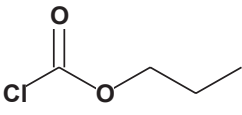
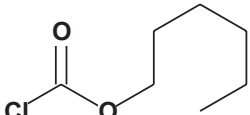
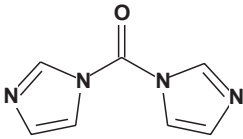
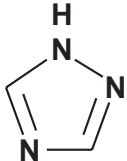
- Phosgene
- Hydrazine, methyl hydrazine
- Ethylene oxide
- Complex hydrides
- Fluorinations with HF and Halex reactions
- Chlorination
- Carbon monoxide

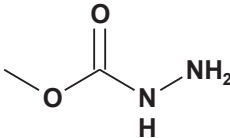
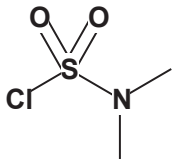
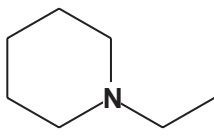
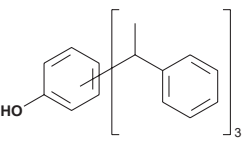
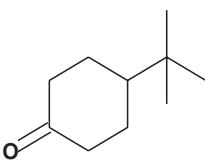
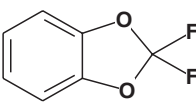
### Basic technologies

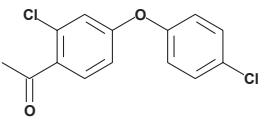
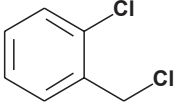
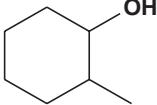
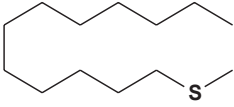
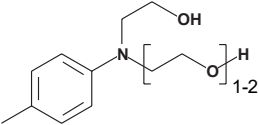
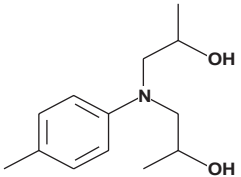
- Hydrogenation
- Friedel-Crafts reactions
- Oxidation & Reduction
- Bromination
- Nitration
- Halogenation
- Sulfonation

### Cutting edge

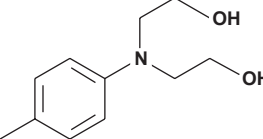
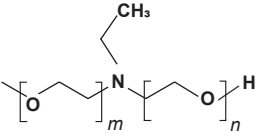
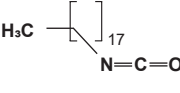
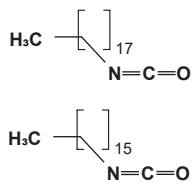
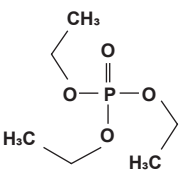
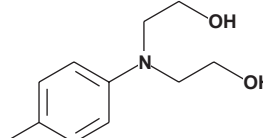
- Cross-coupling technologies
- Buchwald CN coupling
- Asymmetric catalytic hydrogenation
- Transfer hydrogenation
- Grignard reactions
- Enzymatic reactions
- Chiral resolution
- Metathesis

| Structure   | Identification  | Characteristics   | Main Applications  | On Request (OR) / Regular Production (RP) |
|---|---|---|--|---|
| <i>Phosgene derivatives</i>   |   |   |  |   |
|    | Methyl chloroformate<br>MCF, Methyl chlorocarbonate, Chloroformic acid methyl ester<br><br>CAS Reg. No. 79-22-1<br>TSCA: Active       | Assay: min. 99.0% by area<br><br>Appearance: colorless to pale yellow liquid<br><br>Packaging: 160 kg drum, ISO tank                      | Organic reagent for introduction of the methoxycarbonyl group, synthesis of carbonates, carbamates, anhydrides etc.    | RP  |
|    | Ethyl chloroformate<br>ECF, Ethyl chlorocarbonate, Chloroformic acid ethyl ester<br><br>CAS Reg. No. 541-41-3<br>TSCA: Active         | Assay: min. 98.5% by area<br><br>Appearance: colorless to pale yellow liquid<br><br>Packaging: 160 kg drum, ISO tank                      | Organic reagent for introduction of the ethoxycarbonyl group, synthesis of carbonates, carbamates, anhydrides etc.     | RP  |
|   | n-Propyl chloroformate<br>nPCF, n-Propyl chlorocarbonate, Chloroformic acid propyl ester<br><br>CAS Reg. No. 109-61-5<br>TSCA: Active | Assay: min. 98.0% by area<br><br>Appearance: colorless to pale yellow liquid<br><br>Packaging: ISO tank                                   | Organic reagent for introduction of the n-propoxycarbonyl group, synthesis of carbonates, carbamates, anhydrides etc.  | OR  |
|  | n-Hexylchloroformate<br>HCF, n-Hexylchlorocarbonate, Chloroformic acid hexyl ester<br><br>CAS Reg. No. 6092-54-2<br>TSCA: Active      | Assay: 96.0 – 102.0%<br><br>Appearance: clear colorless to yellow liquid<br><br>Packaging: 190 kg drum                                    | Organic reagent for introduction of the n-hexyloxycarbonyl group, synthesis of carbonates, carbamates, anhydrides etc. | OR  |
|  | Carbonyldiimidazole<br>1,1'-Carbonylbis(imidazole), CDI, CBI<br><br>CAS Reg. No. 530-62-1<br>TSCA: Active                             | Assay: min. 98.0% by area<br><br>Appearance: white to pale colored solid<br><br>Packaging: 10 kg drum, 20 kg drum, 25 kg drum, 50 kg drum | Versatile organic reagent, safer-to-handle phosgene equivalent, activator for carboxylic acids etc.                    | OR  |
| <i>Triazole</i>   |   |   |  |   |
|  | 1,2,4-Triazole<br><br>CAS Reg. No. 288-88-0<br>TSCA: Active   | Assay: min. 99.5% by area<br><br>Appearance: white to light colored flakes<br><br>Packaging: 100 kg drums<br>625 kg & 780 kg big bags     | Intermediate for agrochemicals, pharmaceuticals and other fine chemicals   | RP  |

| Structure   | Identification  | Characteristics  | Main Applications  | On Request (OR) / Regular Production (RP) |
|---|---|--|--|---|
| <i>Other Reagents and Building Blocks</i>   |   |  |  |   |
|    | Methyl carbamate<br>Methyl hydrazinocarboxylate,<br>Methoxycarbonyl hydrazine<br><br>CAS Reg. No. 6294-89-9<br>TSCA: Active   | Assay: min. 97.0 % by area<br><br>Appearance: white to pale pink colored crystalline powder<br><br>Packaging: 25 kg fibre drum   | Organic reagents for transfer of the hydrazine group, protecting group for carbonyl functions etc.   | OR  |
|    | Dimethylaminosulfonyl chloride<br>N,N-Dimethylaminosulfonyl chloride<br><br>CAS Reg. No. 13360-57-1<br>TSCA: Active   | Assay: min. 98.0 % by area<br><br>Appearance: yellowish to green liquid<br><br>Packaging: 250 kg drum  | Reagent for the introduction of the N,N-dimethylsulfonyl group   | OR  |
|   | N-Ethylpiperidine<br>1-Ethylpiperidine<br><br>CAS Reg. No. 766-09-6<br>TSCA: Active   | Assay: min. 99.6% by area<br><br>Appearance: colorless to light yellow liquid<br><br>Packaging: 160 kg rolling channel drum, rail tanker, ISO tank   | Building block, sterically hindered base, tertiary amine   | OR  |
|  | Tristyrenated Phenol;<br>Reaction mass of 2,6-bis(1-phenylethyl)phenol and 2,4,6-tris(1-phenylethyl)phenol<br><br>CAS Reg. No. 61788-44-1, 18254-13-2, 25640-71-5<br>TSCA: Active | Assay: 60 - 75%<br><br>Appearance: colorless to pale yellow, highly viscous liquid<br><br>Packaging: 200 kg rolling channel drum, ISO tank   | Intermediate for production of surfactants   | OR  |
|  | 4-tert-Butylcyclohexanone<br><br>CAS Reg. No. 98-53-3<br>TSCA: Active   | Assay: min. 99.0 %<br><br>Appearance: at room temperature colorless to light yellowish crystals. At temperatures > 45 °C colorless to yellowish clear liquid.<br><br>Packaging: ISO tank and drums | Intermediate for agrochemicals, pharmaceuticals and other fine chemicals, flavor and fragrance in food and household products, polymer component in ink, paint, resins, dyestuffs, coatings and as additive in lithium batteries | OR  |
|  | 2,2-Difluoro-1,3-benzodioxole<br><br>CAS Reg. No. 1583-59-1<br>TSCA: Active   | Assay: min. 98.0%<br><br>Appearance: colorless to yellow liquid.<br><br>Packaging: ISO Container   | Intermediate for agrochemicals, pharmaceuticals and other fine chemicals   | OR  |

| Structure   | Identification  | Characteristics   | Main Applications   | On Request (OR) / Regular Production (RP) |
|---|---|---|---|---|
| <i>Other Reagents and Building Blocks</i>   |   |   |   |   |
|    | 2-Chloro-4-(4-chlorophenoxy)acetophenone<br>4-Acetyl-3,4'-dichlorodiphenylether, ADCPE<br><br>CAS Reg. No. 119851-28-4                  | Assay: min. 97.0%<br><br>Appearance: yellow to brown solidified melt<br><br>Packaging: ISO tank   | Intermediate for agrochemicals, pharmaceuticals and other fine chemicals  | OR  |
|    | o-Chlorobenzyl chloride<br>oCBC, 2-Chlorobenzyl chloride<br><br>CAS Reg. No. 611-19-8<br>TSCA: Active                                   | Assay: min. 99.0% (area)<br><br>Appearance: clear to pale yellow liquid<br><br>Packaging: ISO Container   | Intermediate for agrochemicals, pharmaceuticals and other fine chemicals  | OR  |
|    | 2-Methylcyclohexanol<br>2-MCH<br><br>CAS Reg. No. 583-59-5<br>TSCA: Active  | Assay: min. 98.0%<br><br>Appearance: clear colorless to yellow-brownish liquid with camphor-like odor<br><br>Packaging: ISO Container (drums and IBCs upon request)                                   | Intermediate for agrochemicals, pharmaceuticals, other fine chemicals and specialty solvents (i.e. 2-MCH acetate)   | OR  |
|  | Dodecyl methyl sulfide<br>DOMESU<br><br>CAS Reg. No. 3698-89-3<br>TSCA: Active  | Assay: min. 99.0%<br><br>Appearance: light to slightly turbid liquid<br><br>Packaging: 900 kg IBC   | Virtually odorless substitute for lower dialkylsulfides (in thiol exchange reactions, Corey-Kim oxidations, Swern oxidations, hydroborations etc.); in flavors and fragrances; for catalyst sulfidation | OR  |
| <i>Polymer Additives and Functional Products</i>                                    |   |   |   |   |
|  | Accelerator PT25E/2<br>N,N-Bis(2-hydroxyethyl)-p-toluidine (over-ethoxylated)<br><br>CAS Reg. No. 3077-12-1, 878391-30-1                | Assay: 46-52% by area, Hydroxy value 460-540 mg KOH/g, Amine value 240-270 mg KOH/g<br><br>Appearance: light yellow to brown liquid<br><br>Packaging: 25 kg steel can, 200 kg steel drum, IBC 1000 kg | Liquid curing agent for epoxy resins  | OR  |
|  | Dipropoxy-p-toluidine<br>Diisopropanol-p-toluidine, N,N-Bis(2-hydroxypropyl)-p-toluidine<br><br>CAS Reg. No. 38668-48-3<br>TSCA: Active | Assay: min. 96.0%<br><br>Appearance: pale yellow, solidified melt<br><br>Packaging: 25 kg steel can, 50 kg steel can, 190 kg steel drum   | Curing agent for epoxy resins   | OR  |



| Structure   | Identification  | Characteristics   | Main Applications   | On Request (OR) / Regular Production (RP) |
|---|---|---|---|---|
| <i>Polymer Additives and Functional Products</i>  |   |   |   |   |
|    | N,N-Dioxethyl-m-toluidine<br>Diethylol-m-toluidine, N-(m-Tolyl)diethanolamine<br><br>CAS Reg. No. 91-99-6<br>TSCA: Active   | Assay: min. 96.0%<br>Appearance: white to light beige solid<br><br>Packaging: 25 kg steel can, 190 kg steel drum  | Curing agent for epoxy resins   | OR  |
|    | Polyether E719<br>Ethylamine-ethylene oxide polymer<br><br>CAS Reg. No. 26795-68-6  | Hydroxyl No. 475-505 mg KOH/g<br><br>Appearance: dark red to dark brown liquid<br><br>Packaging: 200 kg rolling channel drum; 1000 kg IBC   | Polyetheramine-based plasticizer for chloroethylene-based polymers; emulsifier for butadiene emulsion polymerization  | OR  |
|   | STI 97, Stearyl Isocyanate, Octadecyl Isocyanate<br><br>CAS 112-96-9<br>TSCA: Active  | Assay: min. 97.0%<br><br>Appearance: semitransparent liquid or white solid<br><br>Packaging: 150 kg drums   | Release agent for adhesives, polyamide coatings, hot melt inks, textile applications  | RP  |
|    | STI 65, Blend of Stearyl Isocyanate and Hexadecyl Isocyanate<br><br>CAS 112-96-9, 1943-84-6<br>TSCA: Active   | Assay: Mixture of Octadecyl isocyanate (approx. 65%) Hexadecyl isocyanate (approx. 35%)<br><br>Appearance: white or pale yellow, can be solid below 16°C<br><br>Packaging: 150 kg drums | Release agent for adhesives, polyamide coatings, hot melt inks, textile applications  | RP  |
| Oligomeric benzopinacolsilyl ether mixture +<br> | Initiator BK, Blend of Triethyl Phosphate, an oligomeric silyl ether of benzopinacol and Xylenes<br><br>CAS Reg. No. 78-40-0, 141686-55-7, 90989-38-1<br>TSCA: Active | Assay: N/A (ECHA UVCB)<br><br>Appearance: yellow to brown viscose liquid, occasionally with whitely to yellow sediment<br><br>Packaging: 50 kg cans, 1000 kg IBC                        | Initiator for radical polymerization reactions, reactive retarding agent for peroxides. For vinylic monomers, acrylic compounds, olefins. Reactive agent for peroxides. For curable coatings, sheet and bulk moulding compounds. Not self-accelerating. | RP  |
|    | N,N-Dihydroxyethyl-p-toluidine<br>DEPT, N-(p-Tolyl)diethanolamine, Diethylol-p-toluidine, PT 2HE<br><br>CAS Reg. No. 3077-12-1<br>TSCA: Active                        | Assay: min. 97.0%<br><br>Appearance: pale to yellow-brown, liquid to fused, crystalline product<br><br>Packaging: 25 kg steel can, 200 kg steel drum                                    | Curing agent for epoxy resins   | OR  |



CLIMATE  
NEUTRAL \ 2040

LANXESS WANTS TO  
BECOME CLIMATE-  
NEUTRAL BY 2040.  
SALTIGO IS  
PART OF IT AND  
MAKES AN ACTIVE  
CONTRIBUTION!

## Climate Neutral 2040

The chemical industry in Europe aims to be climate neutral by 2050. LANXESS' objective is to outpace that goal by a decade, achieving climate-neutral status by 2040.

As a 100% subsidiary of LANXESS, Saltigo is part of this and makes an active contribution.

LANXESS is already well on its way:

From 2004 - 2018, they cut their greenhouse gas emissions in half and will strive to do so again before 2030.

## We have a clear roadmap

- Realize major impact projects for climate protection
- Decouple emissions and growth
- Pursue technological innovations

## Reducing and ultimately neutralizing scope 3 value chain emissions:

- Realize major impact projects for climate protection
- Decouple emissions and growth
- Pursue technological innovations

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**-75%**

CO<sub>2</sub>e emissions by 2030  
versus 2004

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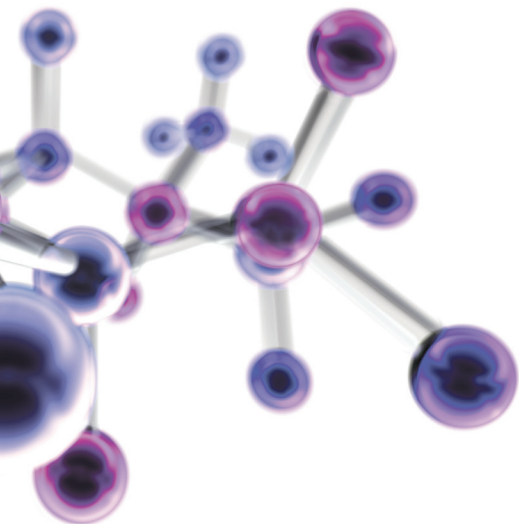
“WE AIM TO CONSTANTLY IMPROVE THE SUSTAINABILITY PERFORMANCE OF OUR PRODUCT PORTFOLIO. HERE, IT IS IMPORTANT TO UNDERSTAND AND ACCOUNT FOR THE UPSTREAM VALUE CHAIN AS WELL.

DR. CHRISTOPH SCHAFFRATH,  
HEAD OF MARKETING & SALES

## Our commitment to sustainability

LANXESS is recognized by a number of sustainability indices and rankings its our progress toward sustainable management.





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[www.saltigo.com](http://www.saltigo.com)

**saltigo**  
customized competence

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