



Product Range

Competences, Vision and Objectives



Our Products Enrich Lives.

When compressors run smoothly, when furniture has a beautiful shine, when a new perfume has a captivating scent or when doctors in hospitals treat patients – in all of these cases, we make a small but crucial contribution to the final results. We are very proud of it!

“We” refers to more than 1,300 employees of OXEA, a high-performance supplier of chemical products.

Oxo chemicals are the core competency of OXEA; in our plants in Germany, the Netherlands, and the USA we produce Oxo Intermediates and Oxo Derivatives. We are #1 or #2 globally in products like Aldehydes, Alcohols, Esters and have the broadest product portfolio and the largest capacity in Carboxylic Acids. Apart from these product groups we are also the sole manufacturer of some special Aldehydes, Diols, Specialty Esters and Olefin Deriva-

tives. Some of our products are tailored for specific customers' individual needs.

Our chemicals are important components of everyday products that enhance lives, and we are one of the largest global suppliers of these components.

We invite you to learn more about OXEA and see for yourself how our chemical products enrich lives.

Product Range



Overview

This brochure contains an overview of all the products made by OXEA. Each product has its own trading name, synonyms and CAS number. Its applications are also indicated.

The product range of OXEA comprises around 70 oxo-chemicals, which are subsequently processed by the industry. The products are used as starting materials for colorants, paints, adhesives, coatings, plastics, medicines, cosmetics, lubricants, detergents, agrochemicals, flavors, fragrances etc.

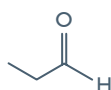
OXEA uses modern technologies and operates according to economic and ecological processes. Product quality, plant safety, environment protection and customer service have top priority. We aim to extend the position of OXEA as a top-ranking producer of basic chemicals through our technological leadership as well as our service and reliability.



Products by Classes

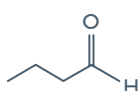
| | | |
|----|-----------------------------------|---------|
| 1 | Aldehydes | Page 4 |
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| 4 | Carboxylic Acids | Page 8 |
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I Aldehydes



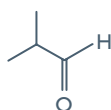
Propionaldehyde
Propanal
CAS 123-38-6

For the manufacture of fragrances, intermediate for organic chemicals (e.g. trimethylolethane)



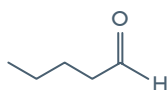
n-Butyraldehyde
n-Butanal
CAS 123-72-8

For crop protection products and to manufacture trimethylolpropane, 2-ethylhexanol and n-butanol



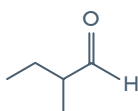
Isobutyraldehyde
2-Methylpropanal
CAS 78-84-2

To manufacture neopentyl glycol, pharmaceuticals, crop protection products and isobutanol



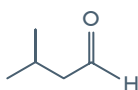
n-Valeraldehyde
n-Pentanal
CAS 110-62-3

Intermediate for the production of fragrances and other organic chemicals (e.g. valeric acid)



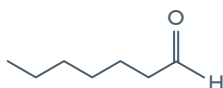
2-Methylbutyraldehyde
2-Methylbutanal
CAS 96-17-3

Intermediate for fragrances and flavors



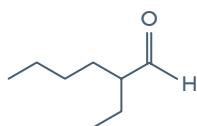
Isovaleraldehyde
3-Methylbutanal
CAS 590-86-3

Intermediate for the production of fragrances and flavors, and other organic chemicals



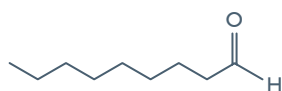
n-Heptanal
n-Heptylaldehyde
CAS 111-71-7

Intermediate for the production of fragrances and raw material for organic chemicals



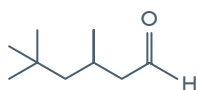
2-Ethylhexanal
2-Ethylhexylaldehyde
CAS 123-05-7

Feedstock for the production of organic chemicals (e.g. 2-Ethylhexanoic acid, 2-Ethylhexylamine), intermediate for the manufacture of disinfectants



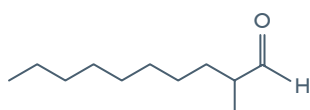
n-Nonanal
Pelargonaldehyde
n-Nonylaldehyde
CAS 124-19-6

Raw material for the production of Pelargonic acid, intermediate for manufacturing fragrances



Isononanal
3,5,5-Trimethylhexanal, app. 90 %
Isononylaldehyde
CAS 35127-50-5
CAS 5435-64-3

Intermediate for the manufacture of rubber additives and fragrances, feedstock for the production of Isononanoic acid



n-Undecanal
CAS 112-44-7

Intermediate in organic synthesis, used in fragrances

n/i-C13/C15-Aldehyde
Mixture of n/i-Tridecanal
and
n/i-Pentadecanal
CAS 93821-14-8

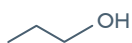
Intermediate for the production of organic chemicals



TCD-Dialdehyde
3(4), 8(9)-Bis-formyl-
tricyclo-[5.2.1.0^{2,6}]decane
CAS 25896-97-3

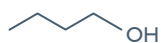
Used in fragrances

2 Alcohols



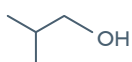
n-Propanol
n-Propyl alcohol
CAS 71-23-8 vv

Solvent for printing and stamping inks; esterification component, pharmaceutical applications



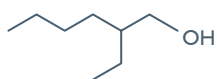
n-Butanol
n-Butyl alcohol
CAS 71-36-3

Solvent for resins and printing inks; manufacture of esters, acrylates and ethers



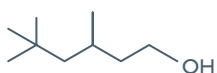
Isobutanol
2-Methylpropanol
CAS 78-83-1

Solvent for resins; manufacture of esters and glycol ethers



2-Ethylhexanol
2-Ethylhexyl alcohol
CAS 104-76-7

For the manufacture of plasticizers/ acrylates; solvent for oils and resins



Isononanol
3,5,5-Trimethylhexanol
CAS 3452-97-9

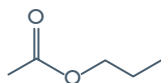
For the manufacture of lubricants, detergents, and agrochemicals



TCD-Alcohol M
8-Hydroxymethyl-
tricyclo-[5.2.1.0^{2,6}]decane
CAS 64680-90-6

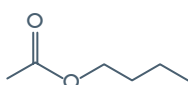
For the manufacture of fragrances

3 Esters



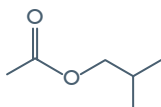
n-Propyl acetate
Acetic acid n-propyl ester
CAS 109-60-4

Solvent for printing inks and resins etc.



n-Butyl acetate
Acetic acid n-butyl ester
CAS 123-86-4

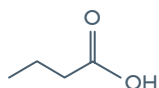
General solvent; for paints and coatings, for the production of essences, fragrances, cleaning liquid



Isobutyl acetate
Isobutyl acetate,
urethane grade
Acetic acid isobutyl ester
CAS 110-19-0

Solvent for nitrocellulose paints; for the production of fragrances

4 Carboxylic Acids

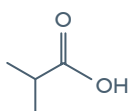


n-Butyric acid
n-Butanoic acid
CAS 107-92-6

Raw material for the production of esters (used to manufacture lacquers, plasticizers and fragrances), and intermediate for cellulose, acetate butyrate

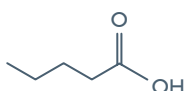
n-Butyric acid AF
CAS: 107-92-6

Raw material used in the production of butyrates applied in the animal feed industry. Butyric acid AF is produced and handled under Good Manufacturing Practice (GMP+ B2)



Isobutyric acid
2-Methylpropionic acid
CAS 79-31-2

Feedstock for the manufacture of esters used for fragrances and flavors, for textile auxiliaries (in form of the salts) and as solvent for various chemical reactions

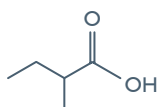


n-Valeric acid
n-Pentanoic acid
CAS 109-52-4

For the production of polyol esters used as synthetic lubricants for refrigerants (CFC replacement), for automotive and jet engines; esters with lower alcohols are used as solvents and as aromas and fragrances; for the production of crop protection products

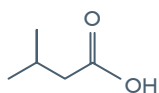
Isopentanoic acid
CAS 109-52-4 / 116-53-0

Intermediate for the production of synthetic lubricants, plasticizers, pharmaceuticals, metallic salts and vinyl stabilizers. Isopentanoic acid is a mixture of n-Valeric acid and 2-Methylbutyric acid.



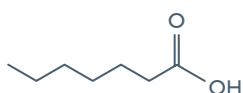
2-Methylbutyric acid
2-Methylbutanoic acid
CAS 116-53-0

Intermediate for the production of esters used as lubricants, plasticizers, fragrances and flavors



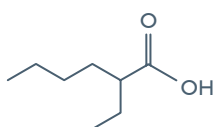
3-Methylbutyric acid
Isovaleric acid
CAS 503-74-2

Feedstock for the production of esters used as fragrances, flavors, plasticizers and lubricants



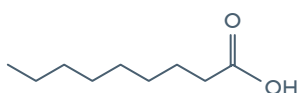
n-Heptanoic acid
CAS 111-14-8

For the production of esters used as plasticizer in PVB for safety glass applications, intermediate for manufacturing stabilizers for alkyd resins, and for polyol esters used as synthetic lubricants



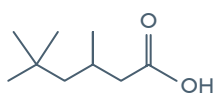
2-Ethylhexanoic acid
2-Ethylcaproic acid
CAS 149-57-5

Intermediate for the production of dryers for paints and coatings, used for alkyd resin modifiers, for the manufacture of peroxides as polymerization catalysts for e.g. PE, for lubricant ester oils and for PVC stabilizers



Pelargonic acid
n-Nonanoic acid
CAS 112-05-0

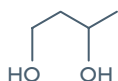
Intermediate for the production of bleach activators for laundry detergents, for polyol esters as fiber and jet turbine lubricants



Isononanoic acid
3,5,5-Trimethylhexanoic acid,
app. 90%
CAS 3302-10-1

Intermediate for the manufacture of dryers for paints and coatings, for esters as lubricants and plasticizers, and for the production of peroxides used as polymerization catalysts

5 Polyols



1,3-Butylene glycol
1,3-Butanediol
CAS 107-88-0

Intermediate for polyesters, polyurethanes and plasticizers; humectant and emollient for personal care products

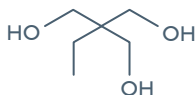


Neopentylglycol
2,2-Dimethylpropane-1,3-diol
CAS 126-30-7

Forms supplied:

- fused form
- (molten) flakes
- 90% aqueous solution

For the manufacture of unsaturated / saturated polyesters such as powder coatings, oil-free alkyd resins; lubricants



Trimethylolpropane
1,1,1-Tris-(hydroxymethyl)-propane
CAS 77-99-6

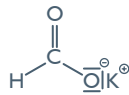
Alkyd resins based on TMP establish good adhesion properties, color fastness and hardness; synthetic lubricants



TCD-Alcohol DM
3(4),8(9)-Bis-(hydroxymethyl)-tricyclo-[5.2.1.0.2,6]decane
CAS 26896-48-0
CAS 26160-83-8

For fragrance compositions, the manufacture of specialty acrylates, resins, plastics, lacquers and coatings

6 Other Products



Potassium Formate
CAS 590-29-4

Used for oilfield drilling and completion fluid heat transfer and de-icing fluids

Zorgol 48

Mining applications

Zorgol 8
CAS 68609-68-7


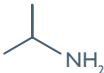
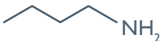
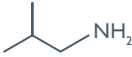

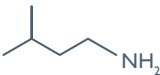
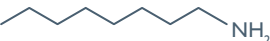
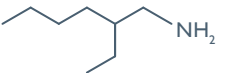
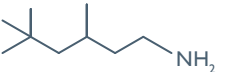
Mining, flow improver

Zorgol 4

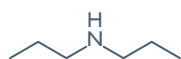
Flow improver

7 Amines

7.1 Monoalkylamines

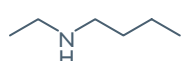
| | | |
|---|---|---|
|  | n-Propylamine 1-Aminopropane CAS 107-10-8 | For the production of fungicides |
|  | Isopropylamine Isopropylamine, 70% in water 2-Aminopropane CAS 75-31-0 | For the production of herbicides, fungicides, insecticides; intermediate for surfactants, detergents and emulsifiers, and for pharmaceuticals |
|  | n-Butylamine 1-Aminobutane CAS 109-73-9 | For the manufacture of fungicides and pharmaceuticals, adhesives, special plasticizers for polyamides; intermediate for rubber accelerators |
|  | Isobutylamine 2-Methylpropylamine CAS 78-81-9 | Intermediate for the manufacture of insecticides, corrosion inhibitors, and rubber processing chemicals |
|  | sec-Butylamine 2-Aminobutane CAS 13952-84-6 | Intermediate for the manufacture of pesticides, fungicides, and silicones, for polymerization auxiliaries and rubber additives |
|  | 3-Methylbutylamine Isopentylamine 1-Amino-3-methylbutane CAS 107-85-7 | For the manufacture of heat sensitive dyes |
|  | n-Octylamine 1-Aminooctane CAS 111-86-4 | For the manufacture of N-octylpyrrolidone (solvent for agrochemicals and organic pigments), for corrosion inhibitors, lubricant additives, biocides and surfactants |
|  | 2-Ethylhexylamine 3-Aminomethylheptane CAS 104-75-6 | For dyestuff intermediates and lubricant additives, intermediate for the production of insecticides |
|  | Isononylamine 3,5,5-Trimethylhexylamine, app. 90% CAS 27775-00-4 | For lubricant additives, corrosion inhibitors, dyes, hydraulic fluids, and metal extraction |

7.2 Dialkylamines



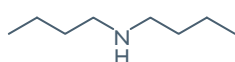
Di-n-propylamine
Dipropylamine
CAS 142-84-7

Intermediate for the manufacture of herbicides (e.g. Trifluralin) and pharmaceuticals



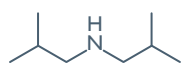
N-Ethyl-n-butylamine
CAS 13360-63-9

Intermediate for the manufacture of herbicides and pharmaceuticals



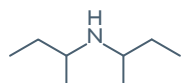
Di-n-butylamine
Dibutylamine
CAS 111-92-2

For the production of rubber processing chemicals, agrochemicals and water treatment chemicals



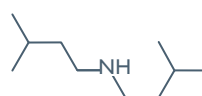
Di-isobutylamine
Di-(2-methylpropyl)amine
CAS 110-96-3

For the production of herbicides



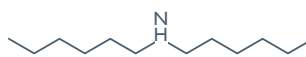
Di-sec-butylamine
Di-(1-methylpropyl)amine
CAS 626-23-3

For the production of herbicides



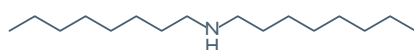
Di-iso-amylamine
(Di-iso-pentylamine,
Di-3-methylbutylamine)
CAS 544-00-3

For use in rubber chemicals and intermediate in organic synthesis



Di-n-hexylamine
CAS 143-16-8

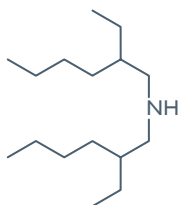
For dyes, coatings, polymer additives, agro-chemicals, and intermediate organic synthesis



Di-n-octylamine
CAS 1120-48-5

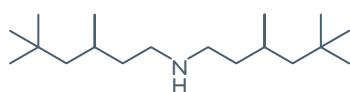
For lubricant additives, corrosion inhibitors, hydraulic fluids, polymer additives, and metal extraction

7 Amines



Di-(2-ethylhexyl)amine
CAS 106-20-7

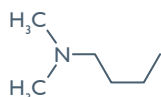
Intermediate for dyestuffs, herbicides, and motor oil additives



Di-isononylamine
Mixture of isomers, mainly
Di-(3,5,5-trimethylhexyl)amine
CAS 28454-70-8

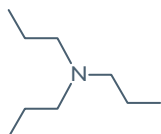
For corrosion inhibitors, metal extraction, lubricant additives, hydraulic fluids, and plastic additives

7.3 Trialkylamines



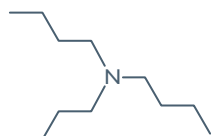
N,N-Dimethyl-n-butylamine
CAS 927-62-8

Intermediate for the manufacture of catalysts for plastics



Tri-n-propylamine
Tripropylamine
CAS 102-69-2

For zeolite catalysts and agrochemicals



Tri-n-butylamine
Tributylamine
CAS 102-82-9

Intermediate for the production of phase transfer catalysts and agrochemicals

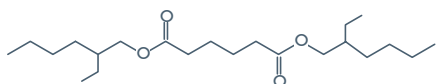
7.4 Diamines



TCD-Diamine
3(4),8(9)-Bis-(aminomethyl)-
tricyclo-[5.2.1.0^{2,6}]decane
CAS 68889-71-4

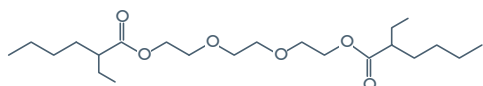
For the manufacture of epoxy resin hardener, mineral oil additives, and coatings

8 Specialty Esters



3G8
Triethylenglycol-di-
(2-ethylhexanoate)
CAS 94-28-0

Plasticizer for PVB applications like automotive and architectural safety glass; secondary plasticizer in PVC and PVAc applications



DOA
Di-(2-ethylhexyl)Adipate
CAS 103-23-1

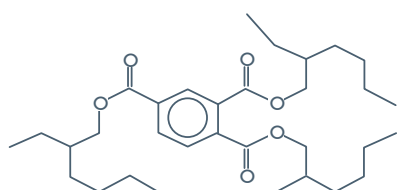
Plasticizer for PVC applications like food contact films, gaskets, tubes, hoses, flooring, wires and cables

DTDA
Di-isotridecyldipate
CAS 26401-35-4

Plasticizer for low polarity polymers; lubricant for two- and four-stroke engines, compressors, gears and metalworking

3NG810
Decanoic acid,
ester with 2-ethyl-2-
(hydroxymethyl)-1,3-
propanediol octanoate
CAS 11138-60-6

Lubricant for two- and four-stroke engines, gears and metalworking



TOTM
Tri-Octyl-Trimellitate
CAS 3319-31-1

Plasticizer for PVC applications like medical devices, wires and cables

OXFILM 351

OXFILM 351 is an odorless and non-VOC coalescing agent and is 10-20% more efficient in reducing the minimum film forming temperature (MFFT).

Remark:

This brochure contains examples of the most common uses and applications of our products.

| | |
|------------------------|----|
| Isopentylamine | |
| > 3-Methylbutylamine | 12 |
| Isopropylamine | 12 |
| Isovaleraldehyde | 4 |
| Isovaleric acid | |
| > 3-Methylbutyric acid | 8 |

M

| | |
|-------------------------|----|
| 2-Methylbutanal | |
| > 2-Methylbutyraldehyde | 4 |
| 3-Methylbutanal | |
| > Isovaleraldehyde | 4 |
| 2-Methylbutanoic acid | |
| > 2-Methylbutyric acid | 8 |
| 3-Methylbutylamine | 12 |
| 2-Methylbutyraldehyde | 4 |
| 2-Methylbutyric acid | 8 |
| 3-Methylbutyric acid | 8 |
| 2-Methylpropanal | |
| > Isobutyraldehyde | 4 |
| 2-Methylpropanol | |
| > Isobutanol | 6 |
| 2-Methylpropionic acid | |
| > Isobutyric acid | 8 |
| 2-Methylpropylamine | |
| > Isobutylamine | 12 |

N

| | |
|-------------------|----|
| Neopentylglycol | 10 |
| 3NG810 | |
| > Decanoic acid | 15 |
| n-Nonanal | 5 |
| n-Nonanoic acid | |
| > Pelargonic acid | 9 |
| n-Nonylaldehyde | |
| > n-Nonanal | 5 |

O

| | |
|--------------|----|
| n-Octylamine | 12 |
| OXFILM 35I | 15 |

P

| | |
|------------------------|----|
| n/i-Pentadecanal | |
| > n/i-C13/C15-Aldehyde | 5 |
| Pelargonaldehyde | |
| > n-Nonanal | 5 |
| Pelargonic acid | 9 |
| n-Pentanal | |
| > n-Valeraldehyde | 4 |
| n-Pentanoic acid | |
| > n-Valeric acid | 8 |
| Potassium Formate | 11 |
| Propanal | |
| > Propionaldehyde | 4 |
| n-Propanol | 6 |
| Propionaldehyde | 4 |
| n-Propyl acetate | 7 |
| n-Propyl alcohol | |
| > n-Propanol | 6 |
| n-Propylamine | 12 |

T

| | |
|--------------------------|----|
| n/i-Tridecanal | |
| > n/i-C13/C15-Aldehyde | 5 |
| TCD-Alcohol DM | 10 |
| TCD-Alcohol M | 6 |
| TCD-Dialdehyde | 5 |
| TCD-Diamine | 14 |
| TOTM | |
| > Tri-Octyl-Trimellitate | 15 |
| Tributylamine | |
| > Tri-n-butylamine | 14 |
| Tri-n-butylamine | 14 |
| Triethylenglycol-di- | |
| (2-ethylhexanoate) | |
| > 3G8 Ester | 15 |
| 3,5,5-Trimethylhexanal | |
| > Isononanal | 5 |
| 3,5,5-Trimethylhexanol | |
| > Isononanol | 6 |

| | |
|------------------------------------|----|
| 3,5,5-Trimethylhexanoic acid | |
| > Isononanoic acid | 9 |
| 3,5,5-Trimethylhexylamine | |
| > Isononylamine | 12 |
| Trimethylolpropane | 10 |
| Tripropylamine | |
| > Tri-n-propylamine | 14 |
| Tri-n-propylamine | 14 |
| 1,1,1-Tris-(hydroxymethyl)-propane | |
| > Trimethylolpropane | 10 |

U

| | |
|-------------|---|
| n-Undecanal | 5 |
|-------------|---|

V

| | |
|-----------------|---|
| n-Valeraldehyde | 4 |
| n-Valeric acid | 8 |

Z

| | |
|-----------|----|
| Zorgol 4 | 11 |
| Zorgol 48 | 11 |
| Zorgol 8 | 11 |

OXEA Worldwide



OXEA Core Competencies

- People & Organization** ■ Very experienced, international management team and a leading organization in terms of execution ability and resource efficiency
- Marketing Know-How** ■ Very experienced and international marketing and sales team with deep know-how of both commodity and specialty markets
- Technology Know-How** ■ The original inventor of the oxo-process, as well as of several proprietary technologies for the manufacture of oxo-chemicals and derivatives
- Productivity Culture** ■ Very experienced organization in continuous productivity improvement processes and Six Sigma technologies
- Clearly Defined Path Forward** ■ A thoroughly developed long-term strategy that includes expansion opportunities and growth projects

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