

# Industrial Lubricants

## **ECOTAIN® SUSTAINABLE SOLUTIONS**





## Impact of megatrends **ON THE LUBRICANTS INDUSTRY**

The world's population is growing, and the implications of the planet's limited resources are affecting us at every level. Politically and economically, as well as personal, which is putting pressure on the industry to preserve raw materials as well as energy resources.

Playing an essential role in the creation process of finished goods, the demand on lubricants remains steady while synthetic solutions continue to rise at a high pace. Requirements of our century necessitate not only performance aspects, but also environmental and social leading points. To face this challenge the industry is continuously upgrading and pushing towards newer processes and superior technologies.

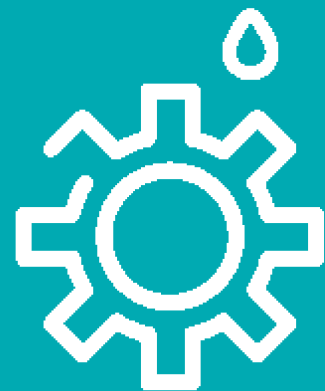


## EcoTain® means sustainable **PRODUCT SOLUTIONS**

Sustainability is a central principle within our corporate strategy. For us sustainability must be an integral part of business processes and a holistic concept covering the whole life cycle of a product. That's why we have created EcoTain® which is our label for sustainability excellence products and solutions showcasing a best-in-class performance in all three sustainability dimensions: people, planet, performance. EcoTain® products provide to our customers not only performance that significantly exceeds market standards, but also covers toxicological requirements.



»EcoTain® will help our customers gain a valuable competitive edge.«






SUSTAINABLE  
SOLUTIONS

## EcoTain<sup>®</sup> additives for LUBRICANT FORMULATORS

Sooner or later we start reacting to fundamental changes in society. Lately, by legal and regulatory forces. Awareness of health and ecological impacts are pushing the lubricant industry towards less harmful ingredients. Thus minimizing the risks to our environment and helping safeguard the health of people who are involved in the manufacturing process, as well as those who use them.



### Requirements on additives for sustainable lubricant formulations:

| LUBRICANT TRENDS  |   | IMPACT ON ADDITIVES   |
|---|---|---|
| <b>Efficiency</b><br>   | Less formulation complexity                         | > Multifunctional additives   |
|   | Higher fluid efficiency                             | > Components suitable for synthetic lubricants                                    |
|   | Longlife lubricants                                 | > Performance boosters  |
|   | Supporting higher speed, load and temperature       | > Low foaming additives and lime soap dispersing agents                           |
|   | Protection of equipment, tools and working pieces   | > Multimetal corrosion inhibitors   |
| <b>Safer Use</b><br>   | Safety requirements become more stringent           | > Guidance on alternative components  |
|   | Avoidance of allergies caused by MWF or lubricants  | > Additives free of critical substances   |
|   | Easy & safe handling for co-workers                 | > Additives free of human hazard label  |
| <b>Environment</b><br> | Aquatic life protection through „cleaner“ effluents | > Additives free of environmental hazard label, biodegradable and conform to WGK1 |
|   | Reduced CO <sub>2</sub> footprint                   | > Renewable based additives   |

# Selected EcoTain® criteria for INDUSTRIAL LUBRICANTS

EcoTain® is our label for sustainability excellence. Through it we set an ambitious benchmark for products and solutions. A selection of the most important sustainability aspects for industrial lubricants are listed below:

## PEOPLE

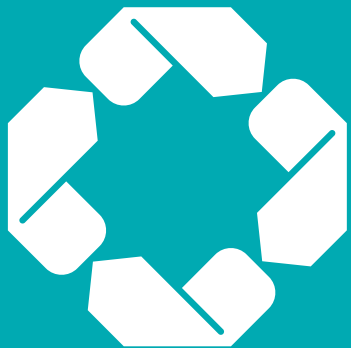
|  |   |   |   |
|--|---|---|---|
|  | <b>SAFE USE, TRANSPARENCY AND INFORMATION</b> <ul style="list-style-type: none"><li>• Free of human hazard label</li><li>• Free of critical substances (e.g. DEA)</li><li>• Suitable to replace APEO's in metal working formulation</li></ul> |  | <b>ADDRESSING MEGATRENDS AND SOCIAL NEEDS</b> <ul style="list-style-type: none"><li>• Safeguard the health of people who are involved in the manufacturing process as well as those who use them</li><li>• Greater fluid efficiency favors synthetic lubricants</li></ul> |
|--|---|---|---|

## PLANET

|  |  |   |  |
|--|--|---|--|
|  | <b>RAW MATERIALS AND SUSTAINABLE SOURCING</b> <ul style="list-style-type: none"><li>• Based on renewable resources</li><li>• Less CO<sub>2</sub> and GHG emissions, waste and effluents</li><li>• Less energy and fuel consumption</li></ul> |  | <b>RESOURCE EFFICIENCY AND ENVIRONMENTAL PROTECTION</b> <ul style="list-style-type: none"><li>• Environmental &amp; waste oil regulations</li><li>• (Readily) Biodegradability</li></ul> |
|--|--|---|--|

## PERFORMANCE

|  |   |   |  |
|--|---|---|--|
|  | <b>INTEGRATED SUSTAINABLE BUSINESS</b> <ul style="list-style-type: none"><li>• Supporting higher speed, load and temperature</li><li>• Protection of equipment, tools and working pieces</li><li>• Reduced CO<sub>2</sub> footprint</li></ul> |  | <b>PERFORMANCE ADVANTAGES</b> <ul style="list-style-type: none"><li>• Multifunctional additives and suitable for synthetic lubricants</li><li>• Performance boosters</li></ul> |
|--|---|---|--|



ECOTAIN®

# EcoTain® additives for SUSTAINABLE LUBRICANTS

22 products have been awarded with the EcoTain® sustainable excellence label. All products listed hereafter are free of human<sup>1</sup> and environmental hazard label, are (readily) biodegradable and compliant with WGK1<sup>2</sup>. The majority of them are based on renewable raw materials.

| PRODUCT                             | ACTIVE CONTENT | EMULSI-FYING | LOW FOAM | LIME SOAP DISPERS. | CORR. INHIB. | LUBRI-CATION | EP/ AW |
|-------------------------------------|----------------|--------------|----------|--------------------|--------------|--------------|--------|
| Emulsogen MTP 020                   | 100%           | ●            | ✓        | ✓                  |              |              |        |
| Emulsogen MTP 030                   | 100%           | ●            | ✓        | ✓                  |              |              |        |
| Emulsogen MTP 070 <sup>3</sup>      | 100%           | ●            | ✓        | ✓                  |              | ✓            |        |
| Emulsogen COL 020                   | 92%            | ●            |          |                    | ✓            |              |        |
| Emulsogen COL 050, 080, 100, 100 LC | 89-91%         | ●            |          | ✓                  |              |              |        |
| Emulsogen ELO 200                   | 100%           | ●            |          | ✓                  |              |              |        |
| Emulsogen MT 050                    | 100%           | ●            |          | ✓                  |              |              |        |
| Hostacor MT                         | 100%           | ✓            |          |                    | ●            |              |        |
| Hostacor IS                         | 100%           |              |          |                    | ●            |              |        |
| Hostacor IT                         | 100%           |              |          |                    | ●            |              |        |
| Hostacor AL                         | 92%            |              |          |                    | ●            | ✓            |        |
| Hostagliss A                        | 85%            |              |          |                    |              | ●            |        |
| Hostagliss DHSZ                     | 100%           |              |          |                    |              | ●            |        |
| Hostagliss 1510                     | 100%           |              |          |                    |              | ●            |        |
| Hostagliss L2, L4, L6               | 100%           |              | ✓        |                    | ✓            | ●            |        |
| Hordaphos 145                       | 99%            | ✓            | ✓        |                    | ✓            | ✓            | ●      |
| Hostaphat 1322                      | 99%            |              |          |                    | ✓            | ✓            | ●      |

- main function
- ✓ excellent properties
- ✓ additional properties

»Our vision is to become the world leading specialty chemicals company which means integrating sustainability in all our operations.«

Hariolf Kottmann, CEO

<sup>1</sup> The following products are free of human hazard label after neutralization: Emulsogen COL 020/050/080/100/100LC, Hordaphos 145  
<sup>2</sup> Deutsche Wassergefährdungsklasse 1, German water hazardous class 1  
<sup>3</sup> on request also in RSPO Mass Balance certified product quality available



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