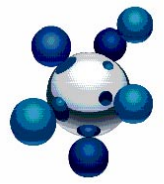


**SASOL**  
reaching new frontiers



## ***Sasol Olefins & Surfactants***

*NACOL<sup>®</sup> C<sub>6</sub>-C<sub>22</sub> Single Fractions*

*NAFOL<sup>®</sup> C<sub>10</sub>-C<sub>28</sub> Blends*

*Linear Alcohols*

NACOL® C<sub>6</sub>-C<sub>22</sub> Single Fractions

NAFOL® C<sub>10</sub>-C<sub>28</sub> Blends

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# 1

## Linear Alcohols

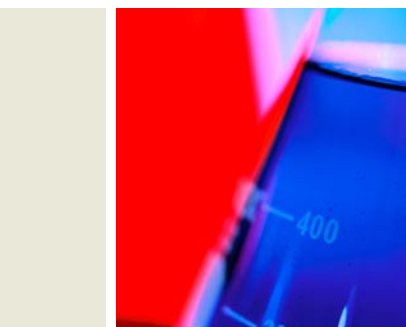
NACOL® (C<sub>6</sub>-C<sub>22</sub> Single Fractions),  
NAFOL® (C<sub>10</sub>-C<sub>28</sub> Blends)

Sasol Olefins & Surfactants GmbH is a worldwide market leader of linear, even-numbered, saturated alcohols and their derivatives which are manufactured at the Sasol Brunsbüttel Plant. Our alcohols are manufactured from petrochemical and natural raw materials in different, fully independent production processes. This unique combination of processes, which yields chemically identical products, ensures exceptional flexibility, a high quality standard, supply security, and a wide variety of products which can be tailor-made to meet individual customer requirements. Sasol alcohols and derivatives can be used to manufacture a multitude of products.

We market our linear alcohols worldwide under the following trademarks:

- NACOL® – Single fractions of linear alcohols C<sub>6</sub> – C<sub>22</sub>
- LINCOL® – Blends of linear alcohols C<sub>6</sub> – C<sub>12</sub>
- NAFOL® – Blends of linear alcohols C<sub>10</sub> – C<sub>28</sub>
- ALFOL® – Blends and single fractions of linear alcohols C<sub>6</sub> - C<sub>22</sub>+

Our diversified product range additionally includes special blends manufactured according to customer specifications.



# 2

## Applications

### **Cosmetics and Pharmaceuticals**

*Creams  
Lotions  
Lipsticks  
Toothpastes  
Perfume bases*

### **Toiletries**

*Shampoos  
Bubble baths  
Hair conditioners*

### **Detergents and Cleaners**

*Detergents  
Powders  
Liquid detergents  
Cleaners  
Laundry softeners*

### **Plastics Additives**

*Linear plasticizers  
Lubricants  
Stabilizers  
Polymerization  
auxiliaries*

### **Additives for the Leather and Textile Industries**

*Fiber finishes  
Spin preparations  
Wetting agents  
Levelling agents  
Softeners*

### **Metal Processing**

*Coupling agents  
Aluminium rolling oils  
Hydraulic oils  
Metal working liquids*

### **Water Evaporation Retardants**

### **Defoamers for the Paper Industry**

### **Pour Point Depres- sants for Crude Oil**

### **Lubricating Oil Additives**

*Viscosity index improvers*

### **Flotation Agents**

### **Disinfectants**

### **Agrochemicals**

### **Flavours and Fragrances**

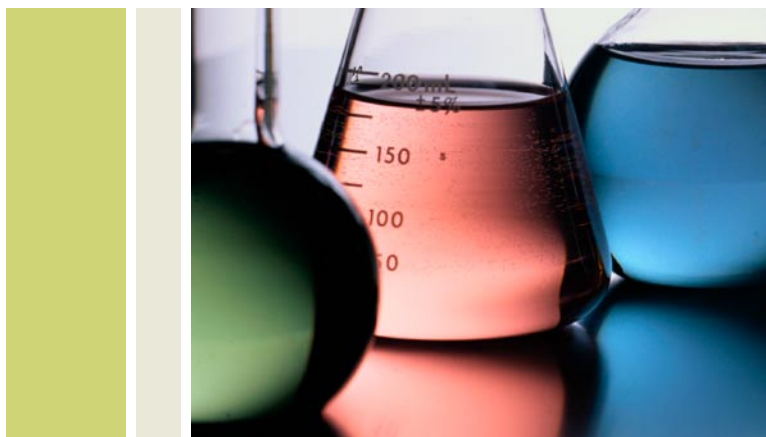
# 3

## Other Products and Trademarks

Based on our linear alcohols we produce the following specialities:

- **LINPLAST®** – Plasticizers made from alcohols
- **ISOFOL®** – Defined branched Guerbet alcohols C<sub>12</sub> – C<sub>32</sub>
- **ISOCARB®** – Defined branched Guerbet acids
- **GALENOL®** – Self-emulsifying blends of linear alcohols

Detailed product data are contained in our brochures  
**LINCOL®**, **LINPLAST®**, **ISOFOL®**, and **GALENOL®**.



## 4

## NACOL®

Linear Alcohols – C<sub>6</sub>-C<sub>22</sub> Single Fractions

|                              |               | NACOL®<br>6-98            | NACOL®<br>8-98            | NACOL®<br>8-99            |
|------------------------------|---------------|---------------------------|---------------------------|---------------------------|
| <i>Single Fractions</i>      |               | 1-Hexanol                 | 1-Octanol                 | 1-Octanol                 |
| <b>Sales Specification</b>   |               |                           |                           |                           |
| <i>Individual Alcohol</i>    | [%]           | 98.0 min.                 | 98.0 min.                 | 99.0 min.                 |
| <i>Content</i>               |               |                           |                           |                           |
| <i>Colour</i>                | [Hazen]       | 10.0 max.                 | 10.0 max.                 | 10.0 max.                 |
| <i>Ester Number</i>          | [mg KOH/g]    | 0.1 max.                  | 0.1 max.                  | 0.1 max.                  |
| <i>Acid Number</i>           | [mg KOH/g]    | 0.02 max.                 | 0.03 max.                 | 0.03 max.                 |
| <i>Iodine Number</i>         | [mg I/100 mg] | 0.1 max.                  | 0.1 max.                  | 0.1 max.                  |
| <i>Water Content</i>         | [wt. %]       | 0.1 max.                  | 0.1 max.                  | 0.1 max.                  |
| <b>Additional Properties</b> |               |                           |                           |                           |
| <i>Density</i>               | [g/ml]        | ap. 0.817–0.821<br>(20°C) | ap. 0.823–0.827<br>(20°C) | ap. 0.823–0.827<br>(20°C) |
| <i>Pour Point</i>            | [°C]          | approx. – 52              | approx. – 16              | approx. – 14              |
| <i>Solidification Point</i>  | [°C]          | –                         | –                         | –                         |
| <i>Boiling Range</i>         | [°C]          | 150 – 170                 | 185 – 200                 | 188 – 198                 |
| <i>Flash Point</i>           | [°C]          | approx. 61                | approx. 82                | approx. 82                |
| <i>Molecular Weight</i>      | [g/mol]       | 102                       | 130                       | 130                       |
| <i>Hydroxyl Number</i>       | [mg KOH/g]    | 540 – 555                 | 424 – 432                 | 428 – 435                 |



|                                 |                      | <b>NACOL®<br/>10-97</b>     | <b>NACOL®<br/>10-99</b>     | <b>NACOL®<br/>12-96</b>     | <b>NACOL®<br/>12-99</b>     |
|---------------------------------|----------------------|-----------------------------|-----------------------------|-----------------------------|-----------------------------|
| <i>Single Fractions</i>         |                      | <i>1-Decanol</i>            | <i>1-Decanol</i>            | <i>1-Dodecanol</i>          | <i>1-Dodecanol</i>          |
| <b>Sales Specification</b>      |                      |                             |                             |                             |                             |
| <i>Individual</i>               | <i>[%]</i>           | <i>97.5 min.</i>            | <i>99.0 min.</i>            | <i>96.5 min.</i>            | <i>99.0 min.</i>            |
| <i>Alcohol Content</i>          |                      |                             |                             |                             |                             |
| <i>Colour</i>                   | <i>[Hazen]</i>       | <i>10.0 max.</i>            | <i>10.0 max.</i>            | <i>10.0 max.</i>            | <i>10.0 max.</i>            |
| <i>Ester Number</i>             | <i>[mg KOH/g]</i>    | <i>0.1 max.</i>             | <i>0.1 max.</i>             | <i>0.15 max.</i>            | <i>0.1 max.</i>             |
| <i>Acid Number</i>              | <i>[mg KOH/g]</i>    | <i>0.03 max.</i>            | <i>0.03 max.</i>            | <i>0.03 max.</i>            | <i>0.03 max.</i>            |
| <i>Iodine Number</i>            | <i>[mg I/100 mg]</i> | <i>0.1 max.</i>             | <i>0.1 max.</i>             | <i>0.1 max.</i>             | <i>0.1 max.</i>             |
| <i>Water Content</i>            | <i>[wt. %]</i>       | <i>0.1 max.</i>             | <i>0.1 max.</i>             | <i>0.1 max.</i>             | <i>0.1 max.</i>             |
| <b>Additional Properties</b>    |                      |                             |                             |                             |                             |
| <i>Density</i>                  | <i>[g/ml]</i>        | <i>ap. 0.829<br/>(20°C)</i> | <i>ap. 0.829<br/>(20°C)</i> | <i>ap. 0.822<br/>(40°C)</i> | <i>ap. 0.822<br/>(40°C)</i> |
| <i>Pour Point</i>               | <i>[°C]</i>          | <i>approx. 6</i>            | <i>approx. 6</i>            | <i>–</i>                    | <i>–</i>                    |
| <i>Solidification<br/>Point</i> | <i>[°C]</i>          | <i>–</i>                    | <i>–</i>                    | <i>22 – 24</i>              | <i>23 – 25</i>              |
| <i>Boiling Range</i>            | <i>[°C]</i>          | <i>220 – 235</i>            | <i>220 – 235</i>            | <i>255 – 265</i>            | <i>258 – 265</i>            |
| <i>Flash Point</i>              | <i>[°C]</i>          | <i>approx. 95</i>           | <i>approx. 95</i>           | <i>approx. 116</i>          | <i>approx. 119</i>          |
| <i>Molecular<br/>Weight</i>     | <i>[g/mol]</i>       | <i>158</i>                  | <i>158</i>                  | <i>186</i>                  | <i>186</i>                  |
| <i>Hydroxyl<br/>Number</i>      | <i>[mg KOH/g]</i>    | <i>350 – 357</i>            | <i>350 – 357</i>            | <i>295 – 305</i>            | <i>299 – 304</i>            |

# NACOL®

## Linear Alcohols – C<sub>6</sub>-C<sub>22</sub> Single Fractions

|                              |               | NACOL®<br>14-95         | NACOL®<br>14-98         | NACOL®<br>16-95         | NACOL®<br>16-98         |
|------------------------------|---------------|-------------------------|-------------------------|-------------------------|-------------------------|
| <i>Single Fractions</i>      |               | 1-Tetradecanol          | 1-Tetradecanol          | 1-Hexadecanol           | 1-Hexadecanol           |
| <b>Sales Specification</b>   |               |                         |                         |                         |                         |
| Individual Alcohol Content   | [%]           | 95.0 min.               | 98.5 min.               | 95.0 min.               | 98.0 min.               |
| Colour                       | [Hazen]       | 10.0 max.               | 10.0 max.               | 10.0 max.               | 10.0 max.               |
| Ester Number                 | [mg KOH/g]    | 0.2 max.                | 0.2 max.                | 0.5 max.                | 0.5 max.                |
| Acid Number                  | [mg KOH/g]    | 0.03 max.               | 0.03 max.               | 0.05 max.               | 0.05 max.               |
| Iodine Number                | [mg I/100 mg] | 0.1 max.                | 0.1 max.                | 0.25 max.               | 0.25 max.               |
| Water Content                | [wt. %]       | 0.1 max.                | 0.1 max.                | 0.1 max.                | 0.1 max.                |
| <b>Additional Properties</b> |               |                         |                         |                         |                         |
| Density                      | [g/ml]        | approx. 0.809<br>(60°C) | approx. 0.809<br>(60°C) | approx. 0.812<br>(60°C) | approx. 0.812<br>(60°C) |
| Pour Point                   | [°C]          | –                       | –                       | –                       | –                       |
| Solidification Point         | [°C]          | 36 – 38                 | 37 – 39                 | 45 – 49                 | 47 – 50                 |
| Boiling Range                | [°C]          | 275 – 290               | 270 – 290               | 300 – 320               | 305 – 320               |
| Flash Point                  | [°C]          | approx. 145             | approx. 145             | approx. 175             | approx. 175             |
| Molecular Weight             | [g/mol]       | 214                     | 214                     | 242                     | 242                     |
| Hydroxyl Number              | [mg KOH/g]    | 256 – 262               | 258 – 262               | 226 – 235               | 226 – 235               |





|                                 |                      | <b>NACOL®<br/>18-98</b>         | <b>NACOL®<br/>18-99</b>         | <b>NACOL®<br/>20-95</b>         | <b>NACOL®<br/>22-98</b>         |
|---------------------------------|----------------------|---------------------------------|---------------------------------|---------------------------------|---------------------------------|
| <i>Single Fractions</i>         |                      | <i>1-Octadecanol</i>            | <i>1-Octadecanol</i>            | <i>1-Eicosanol</i>              | <i>1-Docosanol</i>              |
| <b>Sales Specification</b>      |                      |                                 |                                 |                                 |                                 |
| <i>Individual</i>               | <i>[%]</i>           | <i>98.0 min.</i>                | <i>99.0 min.</i>                | <i>95.0 min.</i>                | <i>98.0 min.</i>                |
| <i>Alcohol Content</i>          |                      |                                 |                                 |                                 |                                 |
| <i>Colour</i>                   | <i>[Hazen]</i>       | <i>10.0 max.</i>                | <i>10.0 max.</i>                | <i>20.0 max.</i>                | <i>30.0 max.</i>                |
| <i>Ester Number</i>             | <i>[mg KOH/g]</i>    | <i>0.1 max.</i>                 | <i>0.1 max.</i>                 | <i>0.3 max.</i>                 | <i>0.2 max.</i>                 |
| <i>Acid Number</i>              | <i>[mg KOH/g]</i>    | <i>0.05 max.</i>                | <i>0.05 max.</i>                | <i>0.05 max.</i>                | <i>0.1 max.</i>                 |
| <i>Iodine Number</i>            | <i>[mg I/100 mg]</i> | <i>0.25 max.</i>                | <i>0.15 max.</i>                | <i>1.0 max.</i>                 | <i>0.5 max.</i>                 |
| <i>Water Content</i>            | <i>[wt. %]</i>       | <i>0.1 max.</i>                 | <i>0.1 max.</i>                 | <i>0.1 max.</i>                 | <i>0.1 max.</i>                 |
| <b>Additional Properties</b>    |                      |                                 |                                 |                                 |                                 |
| <i>Density</i>                  | <i>[g/ml]</i>        | <i>approx. 0.815<br/>(60°C)</i> | <i>approx. 0.815<br/>(60°C)</i> | <i>approx. 0.802<br/>(80°C)</i> | <i>approx. 0.807<br/>(80°C)</i> |
| <i>Pour Point</i>               | <i>[°C]</i>          | <i>–</i>                        | <i>–</i>                        | <i>–</i>                        | <i>–</i>                        |
| <i>Solidification<br/>Point</i> | <i>[°C]</i>          | <i>56 – 59</i>                  | <i>56 – 59</i>                  | <i>62 – 66</i>                  | <i>68 – 71</i>                  |
| <i>Boiling Range</i>            | <i>[°C]</i>          | <i>325 – 340</i>                | <i>325 – 340</i>                | <i>–</i>                        | <i>–</i>                        |
| <i>Flash Point</i>              | <i>[°C]</i>          | <i>approx. 174</i>              | <i>approx. 174</i>              | <i>approx. 195</i>              | <i>approx. 227</i>              |
| <i>Molecular<br/>Weight</i>     | <i>[g/mol]</i>       | <i>270</i>                      | <i>270</i>                      | <i>298</i>                      | <i>326</i>                      |
| <i>Hydroxyl<br/>Number</i>      | <i>[mg KOH/g]</i>    | <i>200 – 210</i>                | <i>200 – 210</i>                | <i>180 – 188</i>                | <i>168 – 171</i>                |

*Other single fractions are available on request.*

# 5

## NAFOL®

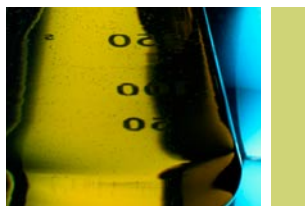
### Linear Alcohols – C<sub>8</sub> - C<sub>28</sub> Blends

|                              |               | NAFOL® 810 D   | NAFOL® 10 D  | NAFOL® 1012  |
|------------------------------|---------------|--|--|--|
| <b>Sales Specification</b>   |               |  |  |  |
| Alcohol Composition          | [%]           | C <sub>6</sub> – OH 1.0 max.<br>C <sub>8</sub> – OH 43.0 ± 4<br>C <sub>10</sub> – OH 55.0 ± 4<br>C <sub>12</sub> – OH 1.0 max. | C <sub>8</sub> – OH 10.0 max.<br>C <sub>10</sub> – OH 90.0 min.<br>C <sub>12</sub> – OH 4.0 max. | C <sub>8</sub> – OH 1.0 max.<br>C <sub>10</sub> – OH 85.0 ± 4<br>C <sub>12</sub> – OH 8.5 ± 2<br>C <sub>14</sub> – OH 6.5 ± 2<br>C <sub>16</sub> – OH 0.5 max. |
| Colour                       | [Hazen]       | 10.0 max.  | 10.0 max.  | 10.0 max.  |
| Ester Number                 | [mg KOH/g]    | 0.1 max.   | 0.1 max.   | 0.1 max.   |
| Acid Number                  | [mg KOH/g]    | 0.03 max.  | 0.03 max.  | 0.03 max.  |
| Iodine Number                | [mg I/100 mg] | 0.1 max.   | 0.1 max.   | 0.1 max.   |
| Water Content                | [wt. %]       | 0.1 max.   | 0.1 max.   | 0.1 max.   |
| <b>Additional Properties</b> |               |  |  |  |
| Alcohol Content              | [%]           | 99.0 min.  | 99.0 min.  | 99.0 min.  |
| Density                      | [g/ml]        | approx. 0.827<br>(20°C)  | approx. 0.829<br>(20°C)  | approx. 0.830<br>(20°C)  |
| Solidification Point         | [°C]          | approx. -11 <sup>1</sup>   | approx. +3 <sup>1</sup>  | -2 to +2   |
| Boiling Range                | [°C]          | 195 – 240  | 215 – 240  | 220 – 285  |
| Flash Point                  | [°C]          | approx. 85   | approx. 95   | approx. 105  |
| Molecular Weight             | [g/mol]       | 143 – 148  | 155 – 162  | 160 – 168  |
| Hydroxyl Number              | [mg KOH/g]    | 380 – 390  | 345 – 365  | 335 – 350  |

<sup>1)</sup> Pour point



|                              |               | NAFOL® 1214                   | NAFOL® 1214 S                 | NAFOL® 1214 Z                 |
|------------------------------|---------------|-------------------------------|-------------------------------|-------------------------------|
| <b>Sales Specification</b>   |               |                               |                               |                               |
| Alcohol                      | [%]           | C <sub>10</sub> – OH 1.5 max. | C <sub>10</sub> – OH 1.5 max. | C <sub>10</sub> – OH 0.5 max. |
| Composition                  |               | C <sub>12</sub> – OH 54.0 ± 3 | C <sub>12</sub> – OH 70.0 ± 3 | C <sub>12</sub> – OH 68.0 ± 3 |
|                              |               | C <sub>14</sub> – OH 44.0 ± 3 | C <sub>14</sub> – OH 27.0 ± 3 | C <sub>14</sub> – OH 27.0 ± 3 |
|                              |               | C <sub>16</sub> – OH 1.5 max. | C <sub>16</sub> – OH 1.5 max. | C <sub>16</sub> – OH 6.0 ± 2  |
|                              |               |                               |                               | C <sub>18</sub> – OH 0.5 max. |
| Colour                       | [Hazen]       | 10.0 max.                     | 10.0 max.                     | 10.0 max.                     |
| Ester Number                 | [mg KOH/g]    | 0.3 max.                      | 0.3 max.                      | 0.3 max.                      |
| Acid Number                  | [mg KOH/g]    | 0.03 max.                     | 0.03 max.                     | 0.05 max.                     |
| Iodine Number                | [mg I/100 mg] | 0.1 max.                      | 0.1 max.                      | 0.1 max.                      |
| Water Content                | [wt. %]       | 0.1 max.                      | 0.1 max.                      | 0.1 max.                      |
| <b>Additional Properties</b> |               |                               |                               |                               |
| Alcohol Content              | [%]           | 99.0 min.                     | 99.0 min.                     | 99.0 min.                     |
| Density                      | [g/ml]        | approx. 0.822<br>(40°C)       | approx. 0.822<br>(40°C)       | approx. 0.822<br>(40°C)       |
| Solidification Point         | [°C]          | 22–25                         | 19–22                         | 19–22                         |
| Boiling Range                | [°C]          | 265 – 295                     | 260 – 290                     | 255 – 305                     |
| Flash Point                  | [°C]          | approx. 130                   | approx. 130                   | approx. 137                   |
| Molecular Weight             | [g/mol]       | 195 – 203                     | 190 – 197                     | 193 – 200                     |
| Hydroxyl Number              | [mg KOH/g]    | 276 – 287                     | 285 – 295                     | 280 – 290                     |



## NAFOL®

### Linear Alcohols – C<sub>10</sub> - C<sub>28</sub> Blends

|                              |               | NAFOL® 1412 H                 | NAFOL® 1218                   | NAFOL® 1218 D                 |
|------------------------------|---------------|-------------------------------|-------------------------------|-------------------------------|
| <b>Sales Specification</b>   |               |                               |                               |                               |
| Alcohol                      | [%]           | C <sub>10</sub> – OH 1.5 max. | C <sub>10</sub> – OH 2.0 max. | C <sub>10</sub> – OH 1.0 max. |
| Composition                  |               | C <sub>12</sub> – OH 33.0 ± 3 | C <sub>12</sub> – OH 40.0 ± 4 | C <sub>12</sub> – OH 27.0 ± 3 |
|                              |               | C <sub>14</sub> – OH 64.0 ± 4 | C <sub>14</sub> – OH 30.0 ± 4 | C <sub>14</sub> – OH 23.0 ± 3 |
|                              |               | C <sub>16</sub> – OH 2.0 max. | C <sub>16</sub> – OH 18.0 ± 2 | C <sub>16</sub> – OH 26.0 ± 5 |
|                              |               |                               | C <sub>18</sub> – OH 10.0 ± 2 | C <sub>18</sub> – OH 23.0 ± 5 |
|                              |               |                               | C <sub>20</sub> – OH 1.0 max. | C <sub>20</sub> – OH 2.0 max. |
| Colour                       | [Hazen]       | 10.0 max.                     | 10.0 max.                     | 10.0 max.                     |
| Ester Number                 | [mg KOH/g]    | 0.3 max.                      | 0.5 max.                      | 0.5 max.                      |
| Acid Number                  | [mg KOH/g]    | 0.05 max.                     | 0.05 max.                     | 0.05 max.                     |
| Iodine Number                | [mg I/100 mg] | 0.1 max.                      | 0.2 max.                      | 0.2 max.                      |
| Water Content                | [wt. %]       | 0.1 max.                      | 0.1 max.                      | 0.1 max.                      |
| <b>Additional Properties</b> |               |                               |                               |                               |
| Alcohol Content              | [%]           | 99.0 min.                     | 98.5 min.                     | 98.5 min.                     |
| Density                      | [g/ml]        | approx. 0.822<br>(40°C)       | approx. 0.823<br>(40°C)       | approx. 0.823<br>(40°C)       |
| Solidification Point         | [°C]          | 26–29                         | 25–28                         | 30–34                         |
| Boiling Range                | [°C]          | 265 – 300                     | 270 – 335                     | 270 – 340                     |
| Flash Point                  | [°C]          | approx. 130                   | approx. 145                   | approx. 135                   |
| Molecular Weight             | [g/mol]       | 197 – 208                     | 204 – 216                     | 218 – 224                     |
| Hydroxyl Number              | [mg KOH/g]    | 270 – 285                     | 260 – 275                     | 246 – 254                     |



|                              |               | <b>NAFOL® 1218 K</b>   | <b>NAFOL® 1618</b>     | <b>NAFOL® 1618 H</b>     |
|------------------------------|---------------|------------------------|------------------------|--------------------------|
| <b>Sales Specification</b>   |               |                        |                        |                          |
| Alcohol                      | [%]           | $C_{10} - OH$ 3.0 max. | $C_{12} - OH$ 0.2 max. | $C_{12} - OH$ 0.2 max.   |
| Composition                  |               | $C_{12} - OH$ 53.0 ± 5 | $C_{14} - OH$ 2.0 max. | $C_{14} - OH$ 2.0 max.   |
|                              |               | $C_{14} - OH$ 21.0 ± 3 | $C_{16} - OH$ 63.0 ± 4 | $C_{16} - OH$ 48.5 ± 3.5 |
|                              |               | $C_{16} - OH$ 10.0 ± 2 | $C_{18} - OH$ 33.0 ± 4 | $C_{18} - OH$ 48.5 ± 3.5 |
|                              |               | $C_{18} - OH$ 11.0 ± 2 | $C_{20} - OH$ 3.0 max. | $C_{20} - OH$ 3.0 max.   |
|                              |               | $C_{20} - OH$ 1.0 max. | $C_{22} - OH$ 0.2 max. | $C_{22} - OH$ 0.2 max.   |
| Colour                       | [Hazen]       | 10.0 max.              | 10.0 max.              | 10.0 max.                |
| Ester Number                 | [mg KOH/g]    | 0.25 max.              | 0.8 max.               | 0.8 max.                 |
| Acid Number                  | [mg KOH/g]    | 0.05 max.              | 0.05 max.              | 0.05 max.                |
| Iodine Number                | [mg I/100 mg] | 0.2 max.               | 0.4 max.               | 0.4 max.                 |
| Water Content                | [wt. %]       | 0.1 max.               | 0.1 max.               | 0.1 max.                 |
| <b>Additional properties</b> |               |                        |                        |                          |
| Alcohol Content              | [%]           | 98.5 min.              | 98.5 min.              | 98.5 min.                |
| Density                      | [g/ml]        | approx. 0.823 (40°C)   | approx. 0.814 (60°C)   | approx. 0.815 (60°C)     |
| Solidification               | [°C]          | 22 – 26                | 46 – 49                | 47 – 51                  |
| Point                        |               |                        |                        |                          |
| Boiling Range                | [°C]          | 270 – 335              | 300 – 350              | 300 – 355                |
| Flash Point                  | [°C]          | approx. 146            | approx. 176            | approx. 180              |
| Molecular                    | [g/mol]       | 204 – 212              | 248 – 260              | 253 – 262                |
| Weight                       |               |                        |                        |                          |
| Hydroxyl                     | [mg KOH/g]    | 265 – 275              | 216 – 226              | 214 – 220                |
| Number                       |               |                        |                        |                          |

Other blends are available on request.

## NAFOL®

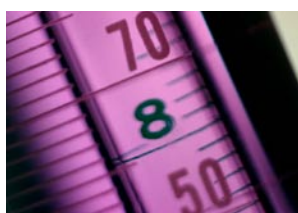
### Linear Alcohols – C<sub>10</sub> - C<sub>28</sub> Blends

|                              |               | NAFOL® 1618 L  | NAFOL® 1618 S  | NAFOL® 1620   |
|------------------------------|---------------|--|--|---|
| <b>Sales Specification</b>   |               |  |  |   |
| Alcohol Composition          | [%]           | C <sub>12</sub> – OH 0.2 max.<br>C <sub>14</sub> – OH 3.0 max.<br>C <sub>16</sub> – OH 73.0 ± 3<br>C <sub>18</sub> – OH 22.0 ± 2<br>C <sub>20</sub> – OH 2.0 max.<br>C <sub>22</sub> – OH 0.2 max. | C <sub>12</sub> – OH 0.4 max.<br>C <sub>14</sub> – OH 4.0 max.<br>C <sub>16</sub> – OH 27.0 ± 4<br>C <sub>18</sub> – OH 70.0 ± 5<br>C <sub>20</sub> – OH 2.0 max.<br>C <sub>22</sub> – OH 0.2 max. | C <sub>12</sub> – OH 0.2 max.<br>C <sub>14</sub> – OH 2.0 max.<br>C <sub>16</sub> – OH 51.0 ± 4<br>C <sub>18</sub> – OH 30.0 ± 4<br>C <sub>20</sub> – OH 14.0 ± 4<br>C <sub>22</sub> – OH 3.0 max.<br>C <sub>24</sub> – OH 0.2 max. |
| Colour                       | [Hazen]       | 10.0 max.  | 10.0 max.  | 30.0 max.   |
| Ester Number                 | [mg KOH/g]    | 0.8 max.   | 0.8 max.   | 1.0 max.  |
| Acid Number                  | [mg KOH/g]    | 0.05 max.  | 0.05 max.  | 0.1 max.  |
| Iodine Number                | [mg I/100 mg] | 0.4 max.   | 0.4 max.   | 0.6 max.  |
| Water Content                | [wt. %]       | 0.1 max.   | 0.1 max.   | 0.1 max.  |
| <b>Additional Properties</b> |               |  |  |   |
| Alcohol Content              | [%]           | 98.5 min.  | 98.5 min.  | 97.5 min.   |
| Density                      | [g/ml]        | approx. 0.815<br>(60°C)  | approx. 0.815<br>(60°C)  | approx. 0.815<br>(60°C)   |
| Solidification Point         | [°C]          | 45–49  | 50–54  | 45–49   |
| Boiling Range                | [°C]          | 300 – 355  | 300 – 355  | > 300   |
| Flash Point                  | [°C]          | approx. 170  | approx. 183  | approx. 175   |
| Molecular Weight             | [g/mol]       | 250 – 260  | 257 – 267  | 255 – 269   |
| Hydroxyl Number              | [mg KOH/g]    | 216 – 224  | 210 – 216  | 208 – 220   |



|                              |               | <b>NAFOL® 1822</b>            | <b>NAFOL® 1822 B</b>          | <b>NAFOL® 1822 C</b>          |
|------------------------------|---------------|-------------------------------|-------------------------------|-------------------------------|
| <b>Sales Specification</b>   |               |                               |                               |                               |
| Alcohol                      | [%]           | C <sub>16</sub> – OH 1.0 max. | C <sub>16</sub> – OH 1.0 max. | C <sub>16</sub> – OH 0.5 max. |
| Composition                  |               | C <sub>18</sub> – OH 43.0 ± 2 | C <sub>18</sub> – OH 15.0 ± 1 | C <sub>18</sub> – OH 5.0 ± 1  |
|                              |               | C <sub>20</sub> – OH 11.0 ± 2 | C <sub>20</sub> – OH 15.0 ± 1 | C <sub>20</sub> – OH 17.0 ± 2 |
|                              |               | C <sub>22</sub> – OH 44.0 ± 2 | C <sub>22</sub> – OH 69.0 ± 2 | C <sub>22</sub> – OH 76.0 ± 2 |
|                              |               | C <sub>24</sub> – OH 1.0 max. | C <sub>24</sub> – OH 1.0 max. | C <sub>24</sub> – OH 1.5 max. |
| Colour                       | [Hazen]       | 20.0 max.                     | 20.0 max.                     | 20.0 max.                     |
| Ester Number                 | [mg KOH/g]    | 0.15 max.                     | 0.3 max.                      | 0.3 max.                      |
| Acid Number                  | [mg KOH/g]    | 0.05 max.                     | 0.05 max.                     | 0.05 max.                     |
| Iodine Number                | [mg I/100 mg] | 0.5 max.                      | 0.5 max.                      | 0.6 max.                      |
| Water Content                | [wt. %]       | 0.1 max.                      | 0.1 max.                      | 0.1 max.                      |
| <b>Additional properties</b> |               |                               |                               |                               |
| Alcohol Content              | [%]           | 99.0 min.                     | 99.0 min.                     | 99.0 min.                     |
| Density                      | [g/ml]        | approx. 0.800<br>(80°C)       | approx. 0.802<br>(80°C)       | approx. 0.802<br>(80°C)       |
| Solidification Point         | [°C]          | 57–61                         | 63–65                         | 64–69                         |
| Boiling Range                | [°C]          | –                             | –                             | –                             |
| Flash Point                  | [°C]          | approx. 202                   | approx. 204                   | approx. 204                   |
| Molecular Weight             | [g/mol]       | 295 – 311                     | 312 – 320                     | 315 – 321                     |
| Hydroxyl Number              | [mg KOH/g]    | 185 – 190                     | 175 – 180                     | 173 – 177                     |

Other blends are available on request.



## NAFOL®

### Linear Alcohols – C<sub>10</sub> - C<sub>28</sub> Blends

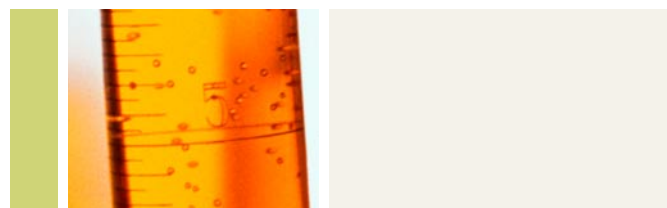
|                              |               | NAFOL® 20 + A  | NAFOL® 20 +  |
|------------------------------|---------------|--|--|
| <b>Sales Specification</b>   |               |  |  |
| Alcohol Composition          | [%]           | C <sub>16</sub> – OH 2.0 max.<br>C <sub>18</sub> – OH 25.0 ± 3<br>C <sub>20</sub> – OH 25.0 ± 4<br>C <sub>22</sub> – OH 35.0 ± 4<br>C <sub>24</sub> – OH 7.5 ± 2.5<br>C <sub>26</sub> – OH 4.5 ± 2.5 | C <sub>16</sub> – OH 0.5 max.<br>C <sub>18</sub> – OH 6.0 max.<br>C <sub>20</sub> – OH 50.0 ± 10<br>C <sub>22</sub> – OH 29.0 ± 6<br>C <sub>24</sub> – OH 14.0 ± 4<br>C <sub>26</sub> – OH 5.0 ± 3 |
| Colour                       | [Hazen]       | 1300.0 max.  | 1800.0 max.  |
| Ester Number                 | [mg KOH/g]    | 10.0 max.  | 10.0 max.  |
| Acid Number                  | [mg KOH/g]    | 0.1 max.   | 0.3 max.   |
| Iodine Number                | [mg I/100 mg] | 20.0 max.  | 20.0 max.  |
| Water Content                | [wt. %]       | 0.1 max.   | 0.1 max.   |
| <b>Additional Properties</b> |               |  |  |
| Alcohol Content              | [%]           | approx. 83.0   | approx. 80.0   |
| Density                      | [g/ml]        | approx. 0.803 (80°C)   | approx. 0.805 (80°C)   |
| Solidification Point         | [°C]          | 54–58  | 53–58  |
| Boiling Range                | [°C]          | –  | –  |
| Flash Point                  | [°C]          | approx. 208  | approx. 210  |
| Molecular Weight             | [g/mol]       | –  | –  |
| Hydroxyl Number              | [mg KOH/g]    | 145 – 165  | 130 – 150  |





|                              |               | NAFOL® 22 +            | NAFOL® 2022           |
|------------------------------|---------------|------------------------|-----------------------|
| <b>Sales Specification</b>   |               |                        |                       |
| Alcohol                      | [%]           | $C_{18}$ -OH 1.0 max.  | $C_{16}$ -OH 0.5 max. |
| Composition                  |               | $C_{20}$ -OH 10.0 max. | $C_{18}$ -OH 7.0 max. |
|                              |               | $C_{22}$ -OH 55.0 ± 10 | $C_{20}$ -OH 58.0 ± 6 |
|                              |               | $C_{24}$ -OH 25.0 ± 6  | $C_{22}$ -OH 30.0 ± 5 |
|                              |               | $C_{26}$ -OH 13.0 ± 4  | $C_{24}$ -OH 6.0 max. |
|                              |               | $C_{28}$ -OH 9.0 max.  |                       |
| Colour                       | [Hazen]       | 3500.0 max.            | 100.0 max.            |
| Ester Number                 | [mg KOH/g]    | 18.0 max.              | 4.0 max.              |
| Acid Number                  | [mg KOH/g]    | 1.0 max.               | 1.0 max.              |
| Iodine Number                | [mg I/100 mg] | 26.0 max.              | 3.5 max.              |
| Water Content                | [wt. %]       | 0.1 max.               | 0.1 max.              |
| <b>Additional properties</b> |               |                        |                       |
| Alcohol Content              | [%]           | approx. 65.0           | 95.0 min.             |
| Density                      | [g/ml]        | approx. 0.807 (80°C)   | approx. 0.802 (80°C)  |
| Solidification Point         | [°C]          | 55–65                  | 55–61                 |
| Boiling Range                | [°C]          | –                      | –                     |
| Flash Point                  | [°C]          | approx. 220            | approx. 200           |
| Molecular Weight             | [g/mol]       | –                      | 300–315               |
| Hydroxyl Number              | [mg KOH/g]    | 95–130                 | 160–185               |

Other blends are available on request.



## NAFOL®

### Linear Alcohols – C<sub>10</sub> - C<sub>28</sub> Blends

| <b>Analytical Methods</b> |                             | <b>Sasol Method</b> | <b>with reference to</b>   |
|---------------------------|-----------------------------|---------------------|----------------------------|
| Alcohol Composition       |                             | 600 – 11/12         | Gas Chromatographic Method |
| Alcohol Content           |                             | 600 – 11/12         | Gas Chromatographic Method |
| Colour                    |                             | 600 – 40            | DIN 53 409                 |
| Density                   |                             | 600 – 23            | DIN 51 757                 |
| Solidification Point      |                             | 600 – 22 A          | DIN 53 175                 |
| Pour Point                |                             | 600 – 20            | ISO 3016                   |
| Boiling Range             |                             | 600 – 21            | DIN 51 751<br>DIN 53 171   |
| Flash Point               | Abel Pinsky < 65°C          | 600 – 26 A          | DIN 51 755                 |
|                           | Pensky Martens 65°C – 165°C | 600 – 26 B          | DIN 51 758                 |
|                           | Cleveland > 165°C           | 600 – 26 C          | ISO 2592                   |
| Hydroxyl Number           |                             | 600 – 30            | DIN 53 240                 |
| Ester Number              |                             | 600 – 33            | DIN 53 401                 |
| Acid Number               |                             | 600 – 31            | DIN 53 402                 |
| Iodine Number             |                             | 600 – 39            | DIN 53 241                 |
| Viscosity [ubbelohde]     |                             | 600 – 25            | DIN 51 562                 |
| Water Content             |                             | 600 – 37            | DIN 51 777                 |
| Refraction Index          |                             | 600 – 24            | DIN 51 423                 |
| Carbonyl Number           |                             | 600 – 34            | ASTME 411                  |



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