# 12-HYDROXYSTERIC ACID

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|---|---|
| **Other names:** | Octadecanoic acid, 12-hydroxy- |
| | Cerit Fac 3 |
| | Harwax A |
| | Hydrofol Acid 200 |
| | Stearic acid, 12-hydroxy- |
| | 12-Hydroxyoctadecanoic acid |
| | Barolub FTO |
| | Ceroxin GL |
| | KOW |
| | Loxiol G 21 |
| | DL-12-Hydroxystearic acid |
| | NSC 2385 |
| **Inchi:** | InChI=1S/C18H36O3/c1-2-3-4-11-14-17(19)15-12-9-7-5-6-8-10-13-16-18(20)21/h17,19H |
| **InchiKey:** | ULQISTXYYBZJSJ-UHFFFAOYSA-N |
| **Formula:** | C18H36O3 |
| **SMILES:** | CCCCCCC(O)CCCCCCCCCCC(=O)O |
| **Mol. weight [g/mol]:** | 300.48 |

# Physical Properties

| Property code | Value | Unit | Source |
|---|---|---|---|
| af | 1.1898 | | Cheméo Relay (1.0) |
| gf | -304.32 | kJ/mol | Joback Method |
| hf | -928.90 | kJ/mol | Cheméo Relay (1.0) |
| hfus | 48.63 | kJ/mol | Joback Method |
| hvap | 144.49 | kJ/mol | Cheméo Relay (1.0) |
| ie | 9.92 | eV | Cheméo Relay (1.0) |
| log10ws | -4.55 | | Cheméo Relay (1.0) |
| logp | 5.303 | | Crippen Method |
| mcvol | 277.790 | ml/mol | McGowan Method |
| pc | 1380.93 | kPa | Joback Method |
| tb | 623.26 | K | Cheméo Relay (1.0) |
| tc | 829.13 | K | Cheméo Relay (1.0) |
| tf | 369.49 | K | Cheméo Relay (1.0) |
| vc | 1.061 | m3/kmol | Cheméo Relay (1.0) |

# Temperature Dependent Properties

| Property code | Value | Unit | Temperature [K] | Source |
|---|---|---|---|---|
| cpg | 905.88 | J/mol×K | 849.03 | Joback Method |
| cpg | 922.00 | J/mol×K | 880.83 | Joback Method |
| cpg | 937.24 | J/mol×K | 912.64 | Joback Method |
| cpg | 951.63 | J/mol×K | 944.44 | Joback Method |
| cpg | 965.21 | J/mol×K | 976.24 | Joback Method |
| cpg | 978.04 | J/mol×K | 1008.05 | Joback Method |
| cpg | 990.14 | J/mol×K | 1039.85 | Joback Method |
| dvisc | 0.0012010 | Pa×s | 449.19 | Joback Method |
| dvisc | 0.0002312 | Pa×s | 515.83 | Joback Method |
| dvisc | 0.0000649 | Pa×s | 582.47 | Joback Method |
| dvisc | 0.0000236 | Pa×s | 649.11 | Joback Method |
| dvisc | 0.0000104 | Pa×s | 715.75 | Joback Method |
| dvisc | 0.0000053 | Pa×s | 782.39 | Joback Method |
| dvisc | 0.0000030 | Pa×s | 849.03 | Joback Method |

# Sources

**Crippen Method:** http://pubs.acs.org/doi/abs/10.1021/ci990307l
**Crippen Method:** https://www.chemeo.com/doc/models/crippen_log10ws
**Cheméo Relay (1.0):**
**Cheméo Relay (1.0, beta):**
**NIST Webbook:** http://webbook.nist.gov/cgi/cbook.cgi?ID=C106149&Units=SI
**Joback Method:** https://en.wikipedia.org/wiki/Joback_method
**McGowan Method:** http://link.springer.com/article/10.1007/BF02311772

# Legend

**af:** Acentric Factor
**cpg:** Ideal gas heat capacity
**dvisc:** Dynamic viscosity
**gf:** Standard Gibbs free energy of formation
**hf:** Enthalpy of formation at standard conditions
**hfus:** Enthalpy of fusion at standard conditions

| | |
|---|---|
| **hvap:** | Enthalpy of vaporization at standard conditions |
| **ie:** | Ionization energy |
| **log10ws:** | Log10 of Water solubility in mol/l |
| **logp:** | Octanol/Water partition coefficient |
| **mcvol:** | McGowan's characteristic volume |
| **pc:** | Critical Pressure |
| **tb:** | Normal Boiling Point Temperature |
| **tc:** | Critical Temperature |
| **tf:** | Normal melting (fusion) point |
| **vc:** | Critical Volume |