



Synergex™ product selection guide

Eastman's Synergex line of amine additives significantly boosts performance while extending the life of your metalworking fluids.

Table 1 — Formulating with Synergex

| Amine | Fluid type(s) | Equivalent weight | Odor | LD50 (oral/rat) mg/kg |
|-----------------|---------------------------------------|-------------------|--------|-----------------------|
| Synergex | O/W emulsion, synthetic | 117 | Slight | 1150 |
| Synergex T | Synthetic | 161 | None | 4250 |
| Synergex T Plus | O/W emulsion, synthetic, straight oil | 217 | None | 2823 |
| Synergex LA | O/W emulsion | 173 | Light | 550 |

Synergex

This workhorse alkanolamine has been in use for decades. It helps extend fluid life and can easily be incorporated into oil-in-water (O/W) emulsions.

Synergex T

The hydrophilic tertiary amine alternative to Synergex. Provides for longer life in full synthetic fluids along with excellent corrosion inhibition.

Synergex T Plus

Superior extension of fluid life. Easy incorporation into oil-in-water (O/W) emulsions.

Synergex LA

As the newest addition to our Synergex product line, Synergex LA serves as a highly effective hydrophobic alkanolamine for hydrophobic/hydrophilic amine combinations.

Table 2 — Formulating with Synergex amines

| Amine | NBP | % VOC | HLB | Typical use level | Biosynergy | Oil/water partition | pKa |
|-----------------|----------|-------|-------------|-------------------|------------|---------------------|-----|
| Synergex | 200 °C | 99 | Mid-range | 4% - 6% | Excellent | Amphiphilic | 10 |
| Synergex T | 285 °C | < 8 | Hydrophilic | 2% - 10% | Good | Water | 9 |
| Synergex T Plus | > 300 °C | 0 | Hydrophobic | 2% - 6% | Excellent | Oil | 9 |
| Synergex LA | 230 °C | 99 | Hydrophobic | 4% - 8% | Good | Oil | 10 |

NBP = normal boiling point

% VOC per ASTM-D1868

NK = not known

Typical use level designates the typically optimal amount to use in a concentration, which in turn will be diluted to ≈ 5% in the working fluid.

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Eastman Chemical Company
Corporate Headquarters
P.O. Box 431
Kingsport, TN 37662-5280 U.S.A.

Telephone:
U.S.A. and Canada, 800-EASTMAN (800-327-8626)
Other Locations, (1) 423-229-2000
Fax: (1) 423-229-1193

www.eastman.com/locations

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