

Metalworking and VOCs

An issue of importance

The contribution of metalworking fluids to VOC is a concern. An ASTM test (ASTM E1868) has been developed that can help formulators select low-VOC additives like Synergex™ T amine additive from Eastman. Additionally, there are a variety of other methods and standards, such as boiling point.

VOC assessment based on thermogravimetric analysis (TGA) (ASTM E1868)

- Based on weight loss at 81°C for 110 minutes
- Synergex T amine additive: Less than 10% weight loss

Amine	VOC (g/L)	% Evaporated	Normal BP (°C)
DCHA	911	99.7	256
Synergex	883	98.9	199
Synergex LA	860	99.8	230
Corrguard™ EXT	620	78.2	218
MDEA	171	16.5	247
Synergex T	69	7.5	285

Synergex T

VOC-compliant alkanolamine for metalworking

Normal boiling point = 285°C

TAG CC flash point = 295°F

VOC exemptions

Green Seal exemption based on normal boiling point:

- Normal BP < 280°C is a VOC.
- Normal BP > 280°C is not a VOC.

EU ISO 11890 exemption based on normal boiling point:

- Normal BP < 250°C is a VOC.
- Normal BP > 250°C is not a VOC.

Flash point (TAG CC) exemption:

- Flash point < 280°F is a VOC.
- Flash point > 280°F is not a VOC.



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