Product Specification

TOMAMINE® PA-Series and DA-Series – Ether Amines

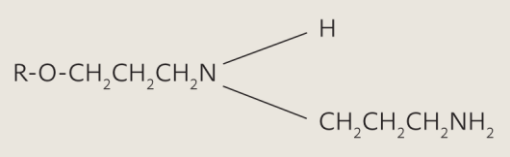
Description

The TOMAMINE® DA-Series synthetic ether amines are produced by the reaction of an aliphatic alcohol with acrylonitrile. These unique primary ether amines can be used as additives or building blocks for many other surfactants with broad applications. Ether amines have excellent low temperature liquidity.

Evonik produces primary amines with the following basic structure: $R-O-CH_2CH_2CH_2NH_2$

The TOMAMINE® DA-series synthetic ether diamines are produced by the reaction of an aliphatic alcohol with two moles of acrylonitrile. Like the TOMAMINE® DA-Series, these unique ether diamines can be used as additives or building blocks for many other surfactants with broad applications use and have excellent low temperature liquidity.

Evonik produces diamines with the following basic structure:



Applications

- Collectors for flotation process
- Specialty surfactants
- Replacement for fatty amines
- Chemical intermediates
- Corrosion inhibitors
- Lubrication additives
- Fuel additives
- Petroleum refining
- Metalworking fluids
- Textile chemical foaming agents
- Agricultural chemicals
- Cross linking agents for epoxy resins

Advantages

- Excellent liquidity
- High quality – no mono-substituted amide
- Ether linkage provides unique properties

Alkyl groups are commercially available from C6 to C18.

Performance Advantages

Table 1: TOMAMINE® PA-Series Ether Amines

Product	R Equals	Description
TOMAMINE® PA-10L	C6H13	Hexyloxypropyl amine
TOMAMINE® PA-12EH	Branched C8H17	2-Ethylhexyloxypropyl amine
TOMAMINE® PA-1214	C8H17/C10H21	Octyl/decyloxypropyl amine
TOMAMINE® PA-14	Branched C10H21	Isodecyloxypropyl amine
TOMAMINE® PA-16	Branched C12H25	Isododecyloxypropyl amine
TOMAMINE® PA-1618	C12H25/C14H29	Dodecyl/tetradecy-loxypropyl amine
TOMAMINE® PA-17	Branched C13H27	Isotridecyloxypropyl amine
TOMAMINE® PA-1816	C14H29/C12H25	Tetradecyl/dodecy-loxypropyl amine
TOMAMINE® PA-19	C12H25/C15H31	Linear alkyloxypropyl amine
TOMAMINE® PA-2220	C18H37/C16H33	Octadecyl/hexadecy-loxypropyl

Hazardous goods classification

Information concerning

- classification and labelling according to regulations
  for transport and for dangerous substances
- protective measures for storage and handling
- measures in case of accidents and fire
- toxicity and ecological effects

is given in our material safety data sheets.

Table 2: TOMAMINE® PA-Series Typical Properties

PA-Series	PA-10L	PA-12 EH	PA-1214	PA-14	PA-16	PA-1618	PA-17	PA-1816	PA-19	PA-2220
Molecular weight	165	200	207	225	253	260	265	265	272	350
Amine value, min.	315	280	260	243	215	200	200	200	195	150
Mole % primary amine, min.	96	96	96	96	96	96	96	96	96	96
Water, % max.	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
Flash point, °C	183	> 200	> 200	> 200	> 200	> 200	> 200	> 200	> 200	> 200
Specific gravity @ 25 °C	0.84	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85
Gardner color, max.	5	5	5	5	5	5	5	5	5	5
Pour point, °F	-30	- 30	20							
Physical form @ 25 °C	liquid	liquid	liquid	liquid	liquid	liquid	liquid	paste	paste	paste

Table 3: TOMAMINE® DA-Series Ether Amines

Product	R Equals	Description
TOMAMINE® DA-1214	C8H17/C10H21	Octyl/decyloxypropyl-1,3-diaminopropane
TOMAMINE® DA-14	Branched C10H21	Isodecyloxypropyl-1,3-diaminopropane
TOMAMINE® DA-16	Branched C12H25	Isododecyloxypropyl-1,3-diaminopropane
TOMAMINE® DA-1618	C12H25/C14H29	Dodecyl/tetradecyloxypropyl-1,3-diaminopropane
TOMAMINE® DA-17	Branched C13H27	Isotridecyloxypropyl 1,3-diaminopropane

Table 4: TOMAMINE® DA-Series Typical Properties

PA-Series	DA-1214	DA-14	DA-16	DA-1618	DA-17
Molecular weight	290	295	325	340	330
Amine value, min.	385	375	335	330	325
Mole % primary amine, min.	49	49	49	49	49
Water, % max.	0.5	0.5	0.5	0.5	0.5
Flash point, °C	> 200	> 200	> 200	> 200	> 200
Specific gravity @ 25 °C	0.87	0.87	0.87	0.87	0.87
Gardner color, max.	5	5	5	5	5
Pour point, °F	20	- 50	- 30	60	- 30
Physical form @ 25 °C	liquid	liquid	liquid	liquid	liquid

For Technical Information, Support and Samples:

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