

SPECIALTY ALKYL ALKANOLAMINES

Most companies that use amines are aware that Arkema manufactures alkyl alkanolamines such as dimethylaminoethanol (DMAE), diethylaminoethanol (DEAE) and methyldiethanolamine (MDEA), but did you know that Arkema also produces a wide range of specialty alkyl alkanolamines?

TABLE 1 below lists Arkema's Specialty Alkyl Alkanolamines along with their commercial specifications.

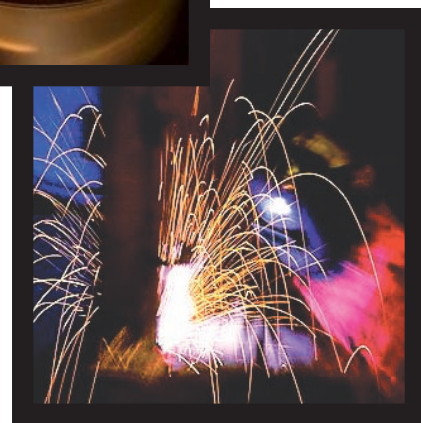
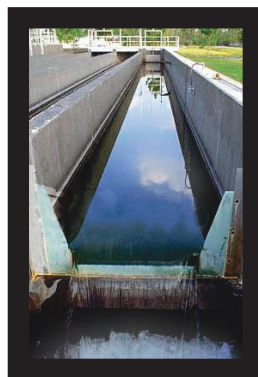
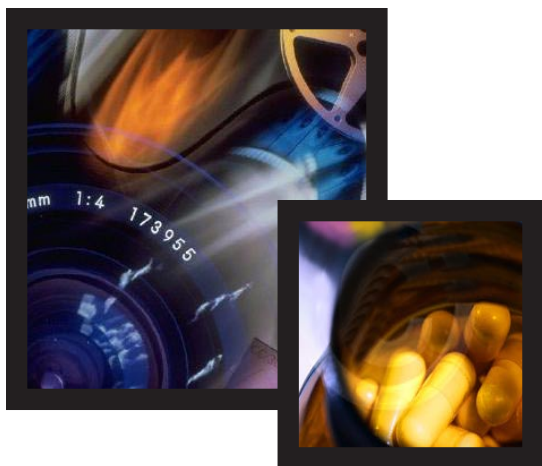


TABLE 1 Arkema Specialty Alkyl Alkanolamines along with their commercial specifications

PRODUCT	ASSAY (MINIMUM)	WATER CONTENT (MAXIMUM)	COLOR APHA (MAXIMUM)	CLARITY
n-Butylaminoethanol (BAE) ^a				
n-Butylethanolamine (BEA)	98.0%	—	50	Clear and free from suspended matter
t-Butylaminoethanol (TBAE)				White Solid Specific Gravity
t-Butylethanolamine (TBEA)	99.0%	0.1%	20	@50 °C 0.860 – 0.880
n-Butyldiethanolamine (BDEA)	98.6%	—	200	Clear and free from suspended matter
Dibutylaminoethanol (DBAE)				
Dibutylethanolamine (DBEA)	99.0%	0.3%	50	Clear and free from suspended matter
Diisopropylaminoethanol (DIPAE)				
Diisopropylethanolamine (DIPEA)	99.0%	0.1%	25	Clear and free from suspended matter
Dimethylamino-2-propanol 77% (DMA-2P)				
Dimethylisopropanolamine 77% (DMIPA)	76.0 -78.0%	—	200	—
Dimethylamino-2-propanol (DMA-2P)				No Turbidity or suspended matter
Dimethylisopropanolamine (DMIPA)	99.0%	0.25%	200	
Ethylaminoethanol (EAE)				
Ethylethanolamine (EEA)	98.0%	—	20	Clear and free from suspended matter
Isopropylaminoethanol, mixed (IPAe)	114.5 – 117.5 ^b	—	100	Clear and free from suspended matter

a) When more than one name is in common use, both names are given.

b) Combining Weight: The number average molecular weight of the sample.



Arkema Specialty Alkyl Alkanolamines find uses in a wide variety of applications and markets. A few examples of common applications of specialty alkyl alkanolamines are given below in **TABLE 2**.

TABLE 2 Applications of Arkema Specialty Alkyl Alkanolamines

PRODUCT	PHARMACEUTICAL	CORROSION CONTROL	METAL WORKING	COATINGS/INKS	FUNCTIONAL FLUIDS	ELECTRONICS	POLYURETHANES/EPOXIES	WATER TREATMENT	PHOTOGRAPHIC
n-Butylaminoethanol (BAE)									
n-Butylethanolamine (BEA)		X	X	X			X		
t-Butylaminoethanol (TBAE)									
t-Butylethanolamine (TBEA)	X	X		X		X			
n-Butyldiethanolamine (BDEA)		X		X			X	X	
Dibutylaminoethanol (DBAE)									
Dibutylethanolamine (DBEA)		X		X			X		
Diisopropylaminoethanol (DIPAE)									
Diisopropylethanolamine (DIPEA)	X	X		X	X				
Dimethylamino-2-propanol 77% (DMA-2P)									
Dimethylisopropanolamine 77% (DMIPA)		X		X			X		
Dimethylamino-2-propanol (DMA-2P)									
Dimethylisopropanolamine (DMIPA)	X	X							
Ethylaminoethanol (EAE)									
Ethylethanolamine (EEA)	X	X		X		X			
Isopropylaminoethanols, mixed (IPAE)		X			X		X	X	



Applications development and formulation is easier with access to relevant physical property information. The information in **TABLE 3** is provided so you can compare a number of key properties of Arkema Specialty Alkyl Alkanolamines and thus pick the right product for your application.

TABLE 3 Physical Properties of Arkema Specialty Alkyl Alkanolamines

PRODUCT ^a	CAS #	MOLECULAR WEIGHT	PH (5% AQUEOUS)	PH (1% AQUEOUS)	FLASH POINT °F	VAPOR PRESSURE MM HG @ 20 °C	SPECIFIC GRAVITY @ 20 °C	BOILING RANGE °C	AVERAGE WEIGHT LBS./GAL.
BAE	111-75-1	117.2	10.97	10.42	194 ^c	—	0.89	190 - 206	7.4
TBAE	4620-70-6	117.2	11.01	10.47	156 ^c	—	0.86	43 °C (mp)	7.18
BDEA	102-79-4	161.3	10.02	9.52	295 ^d	1	0.97	265 - 287	8.1
DBAE	102-81-8	173.3	10.02	9.86	195 ^d	0.1	0.86	229 - 230	7.2
DIPAE	96-80-0	145.2	10.84	10.45	153 ^d	< 1	0.87	188 - 192	7.3
DMA-2P, 77%	108-16-7	103.2	10.58	10.03	99 ^d	20	0.91	—	7.56
DMA-2P, 100%	108-16-7	103.2	10.60	10.13	82 ^d	8	0.85	121 - 127	7.08
EAE	110-73-6	89.14	11.14	10.58	162 ^c	< 1	0.91	160 - 170	7.5
IPAE	109-56-8	116 ^b	10.88	10.50	168 ^c	2	0.92	110 - 265	7.77

a) Acronyms are defined in Tables 1 and 2 of this brochure. b) Average combining weight (number average molecular weight)
 c) Pensky Martens closed cup d) TAG closed cup

More information is available by going to our website at www.arkemagroup.com
 or the amines section of www.e-organicchemicals.com

Call your Arkema Sales Representative or local Arkema Office and
 let our more than 75 years of amines experience go to work for you.



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