

Which gloves can be recommended against amines?

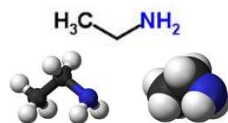
Amines are a group of organic compounds, derived from ammonia (NH₃); they all contain one or more –NH₂, NH- or N-groups.

There exist aliphatic and aromatic amines, depending on the hydrocarbon structure.

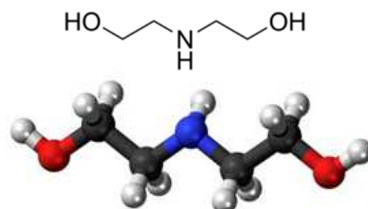
Amines are *primary*, *secondary* or *tertiary*, depending on the amount of H-atoms which have been replaced with a hydrocarbon from the original ammonia structure. *Polyamines* have more than one N-group.

Hereby some structural examples:

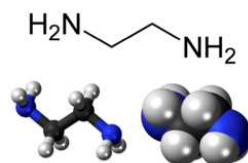
Ethylamine is a primary amine
CH₃CH₂NH₂



Diethanolamine is a secondary amine
N(CH₂CH₂OH)₂



Ethylenediamine is a polyamine (2 amine-groups)
NH₂-CH₂-CH₂-NH₂



What are they used for?

Amines in the industry have many different applications, for example:

- Ethylenediamine (EDA) is used in the production of Ethylenediamine tetraacetic acid (commonly known as EDTA).

EDTA is a widely used analytical reagent, and used in the paper, photo, cosmetic and textile industry. It is present in cosmetics, cutting oils, detergents.

- Diethylenetriamine (DETA) is used as an epoxy curing agent
- Ethanolamines are used to make detergents, lubricating oils, agrochemicals...

Which gloves are recommended as protection against amines?

A general recommendation for the complete amine group is difficult to make, although Barrier (02-100) gloves would be a first choice and second choice would be neoprene gloves against amines containing one aromatic substituent /Nitrile gloves against amines containing aliphatic substituents. Except in the case of ethanolamines, natural rubber and PVC gloves are not suitable to protect against amines.

EDTA is a solid product and all gloves will have a reasonable chemical resistance against the solid and aqueous solutions of the chemical.

A detailed overview is shown in the table below.

Recommendations made in this note are based on extrapolations from laboratory test results and information regarding the composition of chemicals and may not adequately represent specific conditions of end use. Synergistic effects of mixing chemicals have not been accounted for. For these reasons, and because Ansell has no detailed knowledge of or control over the conditions of end use, any recommendation must be advisory only and Ansell fully disclaims any liability including warranties related to any statement contained herein.

Which gloves can be recommended against amines?

Material				Butyl	LLDPE	Neoprene	Neoprene	Nitrile	Nitrile	Nitrile/Neoprene	PVA	PVC	Viton Butyl
Thickness (mm)				0.35	0.062	0.13	N.A.	0.12	0.38	0.19	N.A.	N.A.	0.7
Product Name / Style				ChemTek	Barrier	NeoTouch	Scorpio	TouchNTuff	Solvex	Microflex	PVA	Snorkel	ChemTek
Type	CAS	Chemical name	%	38-514	02-100	25-101.201	08-352.354	92-500.600.605 / 93-250.300.700	37-675.676	93-260	15-554	04-414	38-628
sgl	102-71-6	Triethanolamine	100	>480'	>480'	60-120'	>480'	60-120'	>480'	240-480'	240-480'	>480'	>480'
sgl	107-15-3	Ethylene diamine	100	>480'	>480'	<10'	60-120'	<10'	<10'	<10'		<10'	<10'
sgl	109-89-7	Diethylamine	100	<5'	>480'	2'	<5'	1'	17'	6'	9'	19'	57'
sgl	111-40-0	Diethylenetriamine	100	>480'	>480'	60-120'	>480'	<10'	10-30'	<10'	<10'	<10'	>480'
sgl	111-42-2	Diethanolamine	100	>480'	>480'	>480'	>480'	>480'	>480'	>480'	<10'	>480'	>480'
sgl	121-44-8	Triethylamine	100	<10'	>480'	<5'	<5'	155'	>480'	>480'	>480'	<10'	240-480'
sgl	124-40-3	Dimethylamine, aqueous solution	40	>480'	>480'	60-120'	240-480'	60-120'	240-480'	240-480'	<10'	240-480'	>480'
sgl	141-43-5	Ethanolamine	100	>480'	>480'	>480'	>480'	>480'	>480'	>480'	60-120'	>480'	>480'
sgl	74-89-5	Methylamine, 40% aqueous solution	40	>480'	>480'	<10'	>480'	30-60'	>480'	240-480'	<10'	60-120'	>480'
sgl	75-50-3	Trimethylamine, aqueous solution	50	>480'	>480'	10-30'	>480'	10-30'	>480'	>480'	<10'	60-120'	>480'

This chart was generated based on EN374 standard