

## Caustic alkalis and bases for analysis EMSURE®.

High purity and defined quality





# Caustic alkalis and bases for analysis EMSURE.

Caustic alkalis and bases are, along with salts and acids, the most important inorganic chemicals. In order to provide our customers with specified products for all types of wet chemical labs, Merck Millipore produces these chemicals itself using high-quality raw materials.

Merck Millipore's product range for caustic alkalis and bases for analysis includes sodium and potassium hydroxide pellets and the corresponding solutions, as well as ammonia solutions in various concentrations and quality grades.



### Useful information about ...

Available concentrations of some bases

Name	Weight %	Density g/cm <sup>3</sup> [20 °C]	Concentration mol/l *
Ammonia solution	32	0.88	16.5
	30	0.9	15.5
	25	0.91	13.5
Potassium hydroxide solution	30	1.48	7
Sodium hydroxide solution	10	1.11	3
	27	1.3	9
	32	1.35	11
	45	1.48	16.5
	50	1.53	19

<sup>\*</sup> rounded off

# Unique production technicque leads to unique quality.

Caustic alkalis and bases are produced in a dedicated plant at Merck KGaA in Darmstadt, Germany. Product-specific production lines anticipate cross-contamination between the different materials. Our unrivaled production techniques and sophisticated quality management system enable us to offer caustic alkalis and bases of outstanding quality. Our products are even qualified for demanding lab applications in regulated markets, such as the pharmaceutical industry. Furthermore, most caustic alkalis and bases for analysis EMSURE® meet or exceed the requirements of international standards such as ACS, ISO and / or Reag. Ph Eur.

### Our speciality: Pellets with very low values of impurities

Thanks to our unique production process and extensive experience, Merck Millipore is able to offer pellets with extremely low values of impurities. Thus, you can expect sodium hydroxide pellets with very low potassium impurities, and potassium hydroxide pellets with equally low sodium impurities. The specified maximum values for potassium and sodium for these products are indicated in the product name as well as in the Certificate of Analysis.

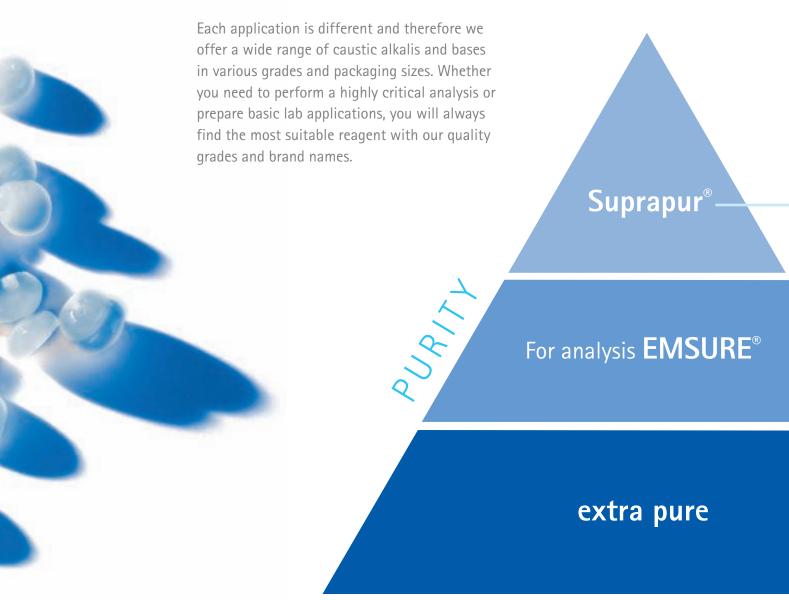
#### Benefits

- Comprehensive product range
- Defined outstanding quality for all applications
- High reliability and reproducibility of results through batch-to-batch consistency and extremely low limiting values of impurities
- Most caustic alkalis and bases for analysis EMSURE® meet or exceed the requirements of ACS, ISO and / or Reag. Ph Eur
- Uniform pellets of defined size thanks to unique production technique
- Made using specially selected raw materials
- Complete analysis of each batch with specific data on content or other limits provided in the Certificate of Analysis
- Sophisticated quality management system with audits, thus comprehensively certificated data
- Fulfill individual customer requests





# The ideal quality grade for each application.



#### **Specifications**

ACS Standards of the American

**Chemical Society** 

**ISO** Standards of the International

Organization for Standardization

Reag. Ph Eur Reagents specified by the

European Pharmacopoeia



#### Suprapur® caustics and bases

• Suprapur® reagents are ideal for digestion in trace analysis.

They have extremely low contents of all cations

### Caustics and bases for analysis EMSURE® ACS, ISO, Reag. Ph Eur

- Our premium grade for all regulated and highly demanding lab applications
- Worldwide best and most extensive product specifications
- Widest range of pack sizes

#### Uses:

- For sample preparation
- As neutralization and digestion agents
- For the production of alkaline salts
- For the production of buffer solutions
- For the regeneration of anionic ion exchangers
- For use in refining and precipitation processes
- As alkaline cleansing agents

### Caustics and bases extra pure

- For preparative lab applications and cleaning purposes
- Specifications with the most important parameters
- Available in different pack sizes

#### Uses:

- For the production of sodium and potassium hydroxide solutions
- For adjusting the pH of liquids
- As alkaline cleansing agents
- As neutralization agents for acids

# Ordering information. Caustics and bases for analysis EMSURE®.

Product	Content	Packaging	Catalogue No.
Pellets		-	
Potassium hydroxide pellets	500 g	Plastic bottle	1.05033.0500
for analysis EMSURE®	1 kg	Plastic bottle	1.05033.1000
	5 kg	Plastic bottle	1.05033.5000
	25 kg	Fibre carton	1.05033.9025
	50 kg	Fibre carton	1.05033.9050
Potassium hydroxide pellets (max. 0.002 % Na) for analysis EMSURE® ACS, ISO, Reag. Ph Eur	250 g	Plastic bottle	1.05021.0250
	1 kg	Plastic bottle	1.05021.1000
	5 kg	Plastic bottle	1.05021.5000
	25 kg	Fibre carton	1.05021.9025
Potassium hydroxide pellets (max. 0.05 % Na) for analysis EMSURE® ACS, Reag. Ph Eur	1 kg	Plastic bottle	1.05029.1000
	50 kg	Fibre carton	1.05029.9050
Sodium hydroxide pellets for analysis EMSURE® ISO	500 g	Plastic bottle	1.06498.0500
	1 kg	Plastic bottle	1.06498.1000
	5 kg	Plastic bottle	1.06498.5000
	25 kg	Fibre carton	1.06498.9025
	50 kg	Fibre carton	1.06498.9050
Sodium hydroxide pellets (max. 0.0002 % K)	250 g	Plastic bottle	1.06495.0250
for analysis EMSURE® ACS, Reag. Ph Eur	1 kg	Plastic bottle	1.06495.1000
	5 kg	Plastic bottle	1.06495.5000
Sodium hydroxide pellets (max. 0.02 % K)	1 kg	Plastic bottle	1.06469.1000
for analysis EMSURE® ACS, Reag. Ph Eur	5 kg	Plastic bottle	1.06469.5000
	50 kg	Fibre carton	1.06469.9050



Ammonia solution 25 % for analysis EMSURE® 1   Glass bottle 1.05432.1000  1   Plastic bottle 1.05432.1011  2.5   Glass bottle 1.05432.2500  5   Plastic container 1.05432.2500  25   Plastic container 1.05432.3002  Ammonia solution 28-30 % 1   Glass bottle 1.05423.1000  for analysis EMSURE® ACS, Reag. Ph Eur 2.5   Glass bottle 1.05423.2500  25   Plastic container 1.05423.2500  25   Plastic container 1.05423.2500  26   Plastic container 1.05423.2500  27   Plastic container 1.05423.2500  28   Plastic container 1.05423.2500  29   Plastic container 1.05423.2500  20   Plastic bottle 1.05426.2500  20   Plastic bottle 1.05426.2500  20   Plastic container 1.05545.0025  20   Plastic container 1.05545.0025  20   Plastic container 1.05588.0000  21   Plastic bottle 1.05588.0000  22   Plastic container 1.05588.0000  23   Plastic bottle 1.05588.0000  24   Plastic bottle 1.05588.0000  25   Plastic container 1.05589.0000  26   Plastic bottle 1.05588.0000  27   Plastic bottle 1.05588.0000  28   Plastic container 1.05589.0000  29   Plastic bottle 1.05588.0000  20   Plastic bottle 1.05588.0000  20   Plastic bottle 1.05588.0000  20   Plastic bottle 1.05588.0000  20   Plastic bottle 1.05588.0000  21   Plastic bottle 1.05588.0000  22   Plastic container 1.05588.0000  23   Plastic bottle 1.05588.0000  24   Plastic bottle 1.05588.0000  25   Plastic container 1.05588.0000  26   Plastic container 1.05588.0000  27   Plastic bottle 1.05588.0000  28   Plastic bottle 1.05588.0000  29   Plastic bottle 1.05588.0000  20   Plastic bottle 1.05588.0000  20   Plastic bottle 1.05588.0000  20   Plastic bottle 1.05589.0000  20   Plastic bottle 1.05589.	Product	Content	Packaging	Catalogue No.
1   Plastic bottle   1.05432.1011   2.5   Glass bottle   1.05432.2500   5   Plastic bottle   1.05432.2500   5   Plastic bottle   1.05432.2500   25   Plastic container   1.05432.3002   1.05432.3002   1.05432.3002   1.05432.3002   1.05432.3002   1.05432.3002   1.05423.3000   1.05423.3000   1.05423.3000   1.05423.3000   1.05423.3002   1.05432.3002   1.05423.3002	Solutions			
2.5   Glass bottle   1.05432.2500     5   Plastic bottle   1.05432.2500     5   Plastic container   1.05432.90025     5   Plastic container   1.05432.90025     5   Plastic container   1.05432.90025     5   Plastic container   1.05432.90025     5   Plastic container   1.05423.2500     5   Plastic container   1.05423.2500     5   Plastic container   1.05423.90025     5   Plastic container   1.05423.90025     6   Ammonia solution 32 %   1   Glass bottle   1.05426.2500     7   Potassium hydroxide solution 47 %   1   Plastic bottle   1.05426.2500     8   Potassium hydroxide solution 47 %   1   Plastic bottle   1.05545.1000     9   For analysis EMSURE®   25   Plastic container   1.05545.9025     8   Sodium hydroxide solution min. 10 % (1.11)   1   Plastic bottle   1.05588.9010     9   For analysis EMSURE®   10   Plastic container   1.05588.9010     9   Sodium hydroxide solution min. 27 % (1.30)   2.5   Plastic container   1.05589.9025     10   Flastic container   1.05589.9025     10   Flastic container   1.05587.2500     10   Flastic bottle   1.05587.2500     10   Flastic bottle   1.05587.9002     10   Flastic bottle   1.05587.9002     10   Flastic container   1.05587.9002     10   Flastic container   1.05587.9002     10   Flastic bottle   1.05587.9002     10   Flastic container   1.05589.9002     10   Flastic container   1.05590.9002     11   Flastic container   1.05590.9002     12   Flastic container   1.05590.9002     13   Flastic container   1.05590.9002     14   Flastic container   1.05590.9002     15   Flastic cont	Ammonia solution 25 % for analysis EMSURE®	1	Glass bottle	1.05432.1000
S		1	Plastic bottle	1.05432.1011
Ammonia solution 28-30 %   1   Glass bottle   1.05423.1000   1   Glass bottle   1.05423.1000   1   Glass bottle   1.05423.2500   2.5   Glass bottle   1.05423.2500   2.5   Plastic container   1.05423.9025   2.5   Plastic container   2.5   Plastic cont		2.5	Glass bottle	1.05432.2500
Ammonia solution 28-30 %         1 I Glass bottle         1.05423.1000           for analysis EMSURE® ACS, Reag. Ph Eur         2.5 I Glass bottle         1.05423.2500           25 I Plastic container         1.05423.9025           Ammonia solution 32 %         1 I Glass bottle         1.05426.1000           extra pure         2.5 I Glass bottle         1.05426.2500           Potassium hydroxide solution 47 %         1 I Plastic bottle         1.05545.1000           for analysis EMSURE®         25 I Plastic container         1.05545.9025           Sodium hydroxide solution min. 10 % (1.11)         1 I Plastic bottle         1.05588.000           Sodium hydroxide solution min. 27 % (1.30)         2.5 I Plastic container         1.05591.2500           (for the determination of nitrogen) for analysis EMSURE®         25 I Plastic bottle         1.05591.2500           Sodium hydroxide solution about 32 % extra pure         2.5 I Plastic bottle         1.05587.2500           Sodium hydroxide solution about 32 % extra pure         2.5 I Plastic bottle         1.05587.9200           Sodium hydroxide solution about 32 % extra pure         2.5 I Plastic bottle         1.05587.9200           Sodium hydroxide solution about 32 % extra pure         2.5 I Plastic bottle         1.05590.2500           Sodium hydroxide solution of nitrogen) for analysis EMSURE®         2.5 I Plastic bottle		5	Plastic bottle	1.05432.5000
Process   Proc		25 l	Plastic container	1.05432.9025
Ammonia solution 32 % extra pure  2.51 Glass bottle 1.05426.000 extra pure 2.51 Glass bottle 1.05426.2500  Potassium hydroxide solution 47 % for analysis EMSURE® 2.51 Plastic container 1.05545.0025  Sodium hydroxide solution min. 10 % (1.11) for analysis EMSURE® 2.51 Plastic bottle 1.05588.0000 for analysis EMSURE® 3.01 Plastic bottle 1.05588.0000 for the determination of nitrogen) for analysis EMSURE® 3.01 Plastic container 3.05588.0000  Sodium hydroxide solution about 32 % extra pure 3.01 Plastic bottle 3.05587.2500  2.01 Plastic bottle 3.05587.9025  Sodium hydroxide solution about 32 % extra pure 3.01 Plastic bottle 3.05587.9025  Sodium hydroxide solution about 32 % 5.01 Plastic bottle 5.05587.2500  2.01 Plastic bottle 5.05587.9025  Sodium hydroxide solution about 32 % 5.01 Plastic bottle 5.05590.2500  Sodium hydroxide solution about 32 % 5.01 Plastic bottle 5.05590.2500  Sodium hydroxide solution min. 45 % 5.01 Plastic container 5.0590.2025  Sodium hydroxide solution min. 45 % 5.01 Plastic container 5.05590.2025  Sodium hydroxide solution 50 % 5.01 Plastic container 5.0593.1000	Ammonia solution 28-30 %	11	Glass bottle	1.05423.1000
Ammonia solution 32 % extra pure         1   Glass bottle         1.05426.1000           extra pure         2.5   Glass bottle         1.05426.2500           Potassium hydroxide solution 47 % for analysis EMSURE®         1   Plastic bottle         1.05545.1000           Sodium hydroxide solution min. 10 % (1.11) for analysis EMSURE®         1   Plastic bottle         1.05588.1000           Sodium hydroxide solution min. 27 % (1.30)         2.5   Plastic bottle         1.05591.2500           (for the determination of nitrogen) for analysis EMSURE®         25   Plastic bottle         1.05591.9025           Sodium hydroxide solution about 32 % extra pure         2.5   Plastic bottle         1.05587.2500           Sodium hydroxide solution about 32 % extra pure         2.5   Plastic container         1.05587.9025           Sodium hydroxide solution about 32 % extra pure         2.5   Plastic bottle         1.05587.9020           Sodium hydroxide solution about 32 % extra pure         2.5   Plastic bottle         1.05587.9025           Sodium hydroxide solution min. 45 % for the determination of nitrogen) for analysis EMSURE®         2.5   Plastic bottle         1.05590.9025           Sodium hydroxide solution min. 45 % for analysis EMSURE®         2.5   Plastic container         1.05590.9025           Sodium hydroxide solution 50 %         1   Plastic bottle         1.11360.9025           Sodium hydroxide solution 50 %	for analysis EMSURE® ACS, Reag. Ph Eur	2.5	Glass bottle	1.05423.2500
Potassium hydroxide solution 47 %   1   Plastic bottle   1.05426.2500		25	Plastic container	1.05423.9025
Potassium hydroxide solution 47 %   1   Plastic bottle   1.05545.1000	Ammonia solution 32 %	1	Glass bottle	1.05426.1000
Sodium hydroxide solution min. 10 % (1.11)   11   Plastic bottle   1.05545.9025	extra pure	2.5	Glass bottle	1.05426.2500
Sodium hydroxide solution min. 10 % (1.11)   1   Plastic bottle   1.05588.1000   for analysis EMSURE®   10   Plastic container   1.05588.9010   Sodium hydroxide solution min. 27 % (1.30)   2.5   Plastic bottle   1.05591.2500   (for the determination of nitrogen) for analysis EMSURE®   25   Plastic container   1.05591.9025   Sodium hydroxide solution about 32 % extra pure   2.5   Plastic bottle   1.05587.2500   25   Plastic container   1.05587.5000   25   Plastic container   1.05587.9025   200   Plastic barrel   1.05587.9200   25   Plastic barrel   1.05587.9200   25   Plastic bottle   1.05590.2500   (for the determination of nitrogen) for analysis EMSURE®   25   Plastic container   1.05590.9025   Sodium hydroxide solution min. 45 %   2.5   Plastic bottle   1.11360.2500   for analysis EMSURE®   25   Plastic container   1.11360.9025   Sodium hydroxide solution 50 %   1   Plastic bottle   1.58793.1000   1.5879	Potassium hydroxide solution 47 %	1	Plastic bottle	1.05545.1000
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Sodium hydroxide solution min. 27 % (1.30)   2.5   Plastic bottle   1.05591.2500	Sodium hydroxide solution min. 10 % (1.11) for analysis EMSURE®	11	Plastic bottle	1.05588.1000
(for the determination of nitrogen) for analysis EMSURE®         25   Plastic container         1.05591.9025           Sodium hydroxide solution about 32 % extra pure         2.5   Plastic bottle         1.05587.2500           5   Plastic container         1.05587.5000           25   Plastic bottle         1.05587.9025           200   Plastic barrel         1.05587.9200           Sodium hydroxide solution about 32 % (for the determination of nitrogen) for analysis EMSURE®         2.5   Plastic container         1.05590.2500           Sodium hydroxide solution min. 45 % (for analysis EMSURE®)         2.5   Plastic bottle         1.11360.2500           For analysis EMSURE®         2.5   Plastic container         1.11360.9025           Sodium hydroxide solution 50 %         1   Plastic bottle         1.58793.1000		10	Plastic container	1.05588.9010
(for the determination of nitrogen) for analysis EMSURE®         25   Plastic container         1.05591.9025           Sodium hydroxide solution about 32 % extra pure         2.5   Plastic bottle         1.05587.2500           5   Plastic container         1.05587.5000           25   Plastic bottle         1.05587.9025           200   Plastic barrel         1.05587.9200           Sodium hydroxide solution about 32 % (for the determination of nitrogen) for analysis EMSURE®         2.5   Plastic container         1.05590.2500           Sodium hydroxide solution min. 45 % (for analysis EMSURE®)         2.5   Plastic bottle         1.11360.2500           For analysis EMSURE®         2.5   Plastic container         1.11360.9025           Sodium hydroxide solution 50 %         1   Plastic bottle         1.58793.1000	Sodium hydroxide solution min. 27 % (1.30) (for the determination of nitrogen) for analysis EMSURE®	2.5	Plastic bottle	1.05591.2500
5   Plastic bottle   1.05587.5000   25   Plastic container   1.05587.9025   2001   Plastic barrel   1.05587.9205   2001   Plastic barrel   1.05587.9200   2.5   Plastic bottle   1.05590.2500   2.5   Plastic bottle   1.05590.2500   2.5   Plastic container   1.05590.9025   2.5   Plastic container   1.05590.9025   2.5   Plastic bottle   1.11360.2500   2.5   Plastic bottle   1.11360.2500   2.5   Plastic container   1.11360.9025   2.5   Plastic container   1.11360.9025   2.5   Plastic bottle   1.58793.1000   2.5   Plastic bottle   1.58793.1000   2.5   Plastic bottle   1.58793.1000   2.5   Plastic bottle   2.5   Plast		25	Plastic container	1.05591.9025
25   Plastic container   1.05587.9025   200   Plastic barrel   1.05587.9025   200   Plastic barrel   1.05587.9200   200   Plastic barrel   1.05587.9200   2.5   Plastic bottle   1.05590.2500   2.5   Plastic container   1.05590.9025   2.5   Plastic container   1.05590.9025   2.5   Plastic bottle   1.11360.2500   2.5   Plastic container   1.11360.9025   2.5   Plastic container   1.11360.9025   2.5   Plastic container   1.11360.9025   2.5   Plastic bottle   1.58793.1000   2.5   Plastic bottle   1.58793.1000   2.5   Plastic bottle   1.58793.1000   2.5   Plastic bottle	Sodium hydroxide solution about 32 % extra pure	2.5	Plastic bottle	1.05587.2500
Sodium hydroxide solution about 32 % (for the determination of nitrogen) for analysis EMSURE®  Sodium hydroxide solution min. 45 % for analysis EMSURE®  25   Plastic container 1.05590.2500 25   Plastic container 1.11360.2500 25   Plastic container 26   Plastic container 27   Plastic container 28   Plastic container 29   Plastic container 20		51	Plastic bottle	1.05587.5000
Sodium hydroxide solution about 32 % (for the determination of nitrogen) for analysis EMSURE®  Sodium hydroxide solution min. 45 % for analysis EMSURE®  2.5   Plastic container 1.05590.2500  2.5   Plastic bottle 1.11360.2500  3.5   Plastic container 1.11360.9025  Sodium hydroxide solution 50 %  1   Plastic bottle 1.58793.1000		25	Plastic container	1.05587.9025
(for the determination of nitrogen) for analysis EMSURE®25   Plastic container1.05590.9025Sodium hydroxide solution min. 45 % for analysis EMSURE®2.5   Plastic bottle1.11360.2500Sodium hydroxide solution 50 %1   Plastic bottle1.58793.1000		200	Plastic barrel	1.05587.9200
Sodium hydroxide solution min. 45 % for analysis EMSURE®         2.5   Plastic bottle         1.11360.2500           Sodium hydroxide solution 50 %         25   Plastic container         1.11360.9025           Sodium hydroxide solution 50 %         1   Plastic bottle         1.58793.1000	Sodium hydroxide solution about 32 %	2.5	Plastic bottle	1.05590.2500
for analysis EMSURE®         25 I         Plastic container         1.11360.9025           Sodium hydroxide solution 50 %         1 I         Plastic bottle         1.58793.1000	,	25	Plastic container	1.05590.9025
for analysis EMSURE®         25 I         Plastic container         1.11360.9025           Sodium hydroxide solution 50 %         1 I         Plastic bottle         1.58793.1000	Sodium hydroxide solution min. 45 %	2.5	Plastic bottle	1.11360.2500
C L FACUDE	for analysis EMSURE®	25	Plastic container	1.11360.9025
( ) FMCUDE	Sodium hydroxide solution 50 %	11	Plastic bottle	1.58793.1000
	for analysis EMSURE®	25	Plastic container	1.58793.9025







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