



# Standard Specification for Soda Ash, Anhydrous (Sodium Carbonate, Anhydrous)<sup>1</sup>

This standard is issued under the fixed designation E 1099; the number immediately following the designation indicates the year of original adoption or, in the case of revision, the year of last revision. A number in parentheses indicates the year of last reapproval. A superscript epsilon ( $\epsilon$ ) indicates an editorial change since the last revision or reapproval.

*This standard has been approved for use by agencies of the Department of Defense.*

## 1. Scope

1.1 This specification covers industrial grade material suitable for glass manufacture, useful in the detergent industry, and in a wide variety of industrial applications.

NOTE 1—Soda ash for various washing, cleaning, and scouring processes is covered by Specification D 458.

## 2. Referenced Documents

### 2.1 ASTM Standards:

D 458 Specification for Soda Ash<sup>2</sup>

D 501 Test Methods of Sampling and Chemical Analysis of Alkaline Detergents<sup>2</sup>

D 1895 Test Methods for Apparent Density, Bulk Factor, and Pourability of Plastic Materials<sup>3</sup>

E 300 Practice for Sampling Industrial Chemicals<sup>4</sup>

E 359 Test Methods for Analysis of Soda Ash (Sodium Carbonate)<sup>4</sup>

## 3. Chemical and Physical Requirements

3.1 Soda ash shall conform to the requirements specified in Table 1.

<sup>1</sup> This specification is under the jurisdiction of ASTM Committee E15 on Industrial and Specialty Chemicals and is the direct responsibility of Subcommittee E15.02 on Product Standards.

Current edition approved Sept. 10, 1996. Published February 1997. Originally published as E 1099 – 86. Last previous edition E 1099 – 91.

<sup>2</sup> *Annual Book of ASTM Standards*, Vol 15.04.

<sup>3</sup> *Annual Book of ASTM Standards*, Vol 08.01.

<sup>4</sup> *Annual Book of ASTM Standards*, Vol 15.05.

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TABLE 1 Chemical and Physical Requirements

Requirement	Grade		ASTM Test Method
	Light	Dense	
Total alkalinity			
Na <sub>2</sub> O, percent by weight	57.8 min	min	E 359
Na <sub>2</sub> CO <sub>3</sub> , percent by weight	98.8 min	99.2 min	E 359
Na <sub>2</sub> SO <sub>4</sub> , percent by weight	0.20 max	0.20 max	E 359
NaCl, percent by weight	0.40 max	0.40 max	E 359
NaHCO <sub>3</sub> , percent by weight	0.40 max	0.40 max	E 359
Fe, ppm	40 max	30 max	E 359
Water insolubles, percent by weight	0.1 max	0.1 max	D 501
Bulk density:			D 1895 (Method A)
lb/ft <sup>3</sup>	less than 54	54 min	
g/cm <sup>3</sup>	less than 0.86	0.86 min	
Screen analysis, cumulative, weight%			E 359
on US No. 30 (600- $\mu$ m) screen	–	5 max	
thru US No. 200 (75- $\mu$ m) screen	–	7 max	

## 4. Sampling

4.1 Soda ash shall be sampled in accordance with the appropriate sections of Practice E 300 for solid chemicals.

## 5. Test Methods

5.1 Each composite sample shall be analyzed in accordance with the test methods specified in Table 1.

## 6. Keywords

6.1 anhydrous; soda ash; sodium carbonate; specification