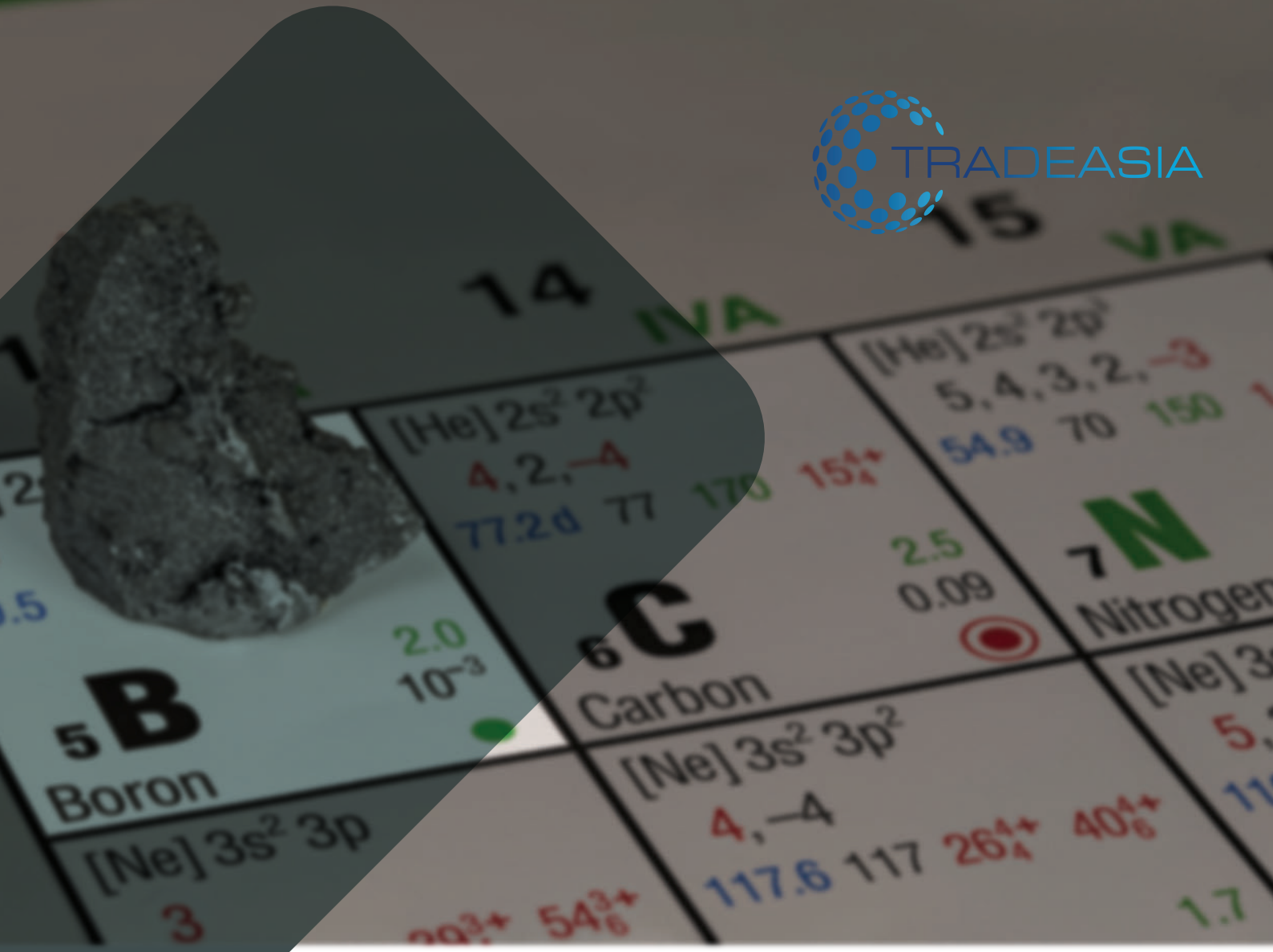


BORON CHEMICALS BROCHURE

www.chemtradeasia.com

About Us

Tradeasia International Pte. Ltd. is a privately owned, independent company headquartered in Singapore. We are a global trading organization providing integrated chemical procurement services with certainty and trust, which makes Tradeasia unique.

Tradeasia International was setup with the sole intention of carrying out chemical distribution services especially to commodity industries in many parts of the world. Today, Tradeasia International represents a growing number of businesses that are serving a variety of markets. We source and supply about 500-600 containers monthly to our customers worldwide.

12 Locations

50+ Suppliers

500+ Products

400+ Clients

Borax Decahydrate

Borax (or sodium tetraborate decahydrate) is a white colored inorganic powder having the formula $Na_2B_4O_7{\cdot}10H_2O$ or $Na_2[B_4O_5(OH)_4]{\cdot}8H_2O$. It is a compound of the element Boron and is also a salt of the compound called boric acid. It occurs naturally as Evaporite, or as a combination of various hydrates of borax. Some of the major properties of borax are its high solubility in water, its ability to produce a yellowish green colored flame when ignite,etc

Specifications for Argentina Origin :

Chemical Analysis	
Component	**Content**
$Na_2B_4O_7{\cdot}10H_2O$	101.3%
B_2O_3	≥ 36.4%
B	≥ 11.3%
Na_2O	≥ 16.2%
SO_4	≤ 60 ppm
Cl	≤ 2900 ppm
Fe	≤ 25 ppm

Granulometric Analysis	
Sieve (A.S.T.M Standard)	**Retained (accumulated)**
Mesh 14	≤ 1%
Mesh 140	≥ 65%

HS Code	: 28401900
CAS No.	: 1303-96-4
Grade	: Technical Grade - Granular
Origin	: Argentina, Turkey
Packaging	: 25kg bags, big bags

Specifications for Turkey Origin :

Chemical Analysis	
Component	**Content**
$Na_2B_4O_7{\cdot}10H_2O$	99.90 - 105.45%
B_2O_3	36.47 - 38.50%
B	11.3%
Na_2O	16.24 - 17.14%
SO_4	135 ppm
Cl	70 ppm max
Fe	10 ppm max

Granulometric Analysis	
Size	**Content**
+1.180 mm	4.00% max
-0.063 mm	4.00% max

Applications :

Detergent Industry

Borax Decahydrate is used in detergents because of water softening and disinfectant property

Ceramics Industry

Borax Decahydrate is used as raw material especially the enamel for the ceramic industry

Borosilicate Glass

Boron fibers probide very high tensile strength and can be added to plastics to make a material that is stronger than steel yet lighter than aluminum

Insulation Fiberglass

Borax Decahydrate is the main borate used in the manufacture of insulation fiberglass where it performs a powerful flux and lowers the batch melting temperature. It also helps control the relationship between melt viscosity, surface tension and temperature to create the optimum conditions for fiberization.

Borax Pentahydrate

Applications :

Detergent Industry

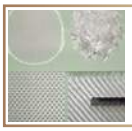
Borax pentahydrate is a natural laundry detergent booster, it could be added to the detergent and make it easier to clean heavily soiled clothes

Ceramics Industry

Borax pentahydrate is used as raw material especially the enamel for the ceramic industry

Borosilicate Glass

Borax pentahydrate is added to glass products where thermo-insulation is needed. Because when it is added to molten glass intermediates it increases viscosity, surface hardness and durability



Insulation Fiberglass

Borax pentahydrate as boron compound is used in insulation fiberglass. It is applied to the wall and ceiling as using it in building insulation in construction sector.

Borax pentahydrate, also known as Etibor 48 or sodium tetraborate pentahydrate, is the most common form of sodium borate used in various industries. It is a white, odorless crystalline granular or powder product that is mildly alkaline both alone and in solution. Compared to Borax Decahydrate, which is physio-chemically comparable, Etibor 48 has a higher Boron content per unit mass, a lower ratio of bound water and is less hygroscopic.

HS Code	: 28401900
CAS No.	: 12179-04-3
Origin	: Argentina, Turkey
Packaging	: 25kg bags

Specifications for Argentina Origin :

Chemical Analysis	
Component	**Content**
B_2O_3	≥ 46.5%
Equivalent $Na_2B_4O_7 \cdot 5H_2O$	≥ 99%
Na_2O	≥ 21.1%
SO_4	≤ 70 ppm
Cl	≤ 800 ppm
Fe	≤ 21 ppm, typical value 6 - 15 ppm
B	≥ 14.4%, typical value 14.7% min

Granulometric Analysis	
Sieve (A.S.T.M Standard)	**Retained (accumulated)**
Mesh 14	≤ 1%
Mesh 140	≥ 80%

Specifications for Turkey Origin :

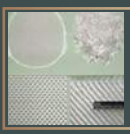
Chemical Analysis	
Component	**Content**
B_2O_3	48.00 - 49.35%
Equivalent $Na_2B_4O_7 \cdot 5H_2O$	100.42 - 103.24%
Na_2O	21.37 - 21.95%
SO_4	135 ppm max
Cl	70 ppm max
Fe	3 ppm max
Insoluble in Water	150 ppm max

Granulometric Analysis	
Size	**Content**
+1.180 mm	4.00% max
-0.075 mm	5.00% max

Boric Acid

Boric acid, is also called hydrogen borate or boracic acid, orthoboric acid or acidum boricum. It is a weak acid of boron and is often used as an antiseptic, insecticide, flame retardant, neutron absorber, or precursor to other chemical compounds. It has the chemical formula $B(OH)_3$, and exists as colorless crystals or white powder that dissolves in water. When occurring as a mineral, it is called sassolite

Applications :



Fiber Glass and Glass Industry

Boric compounds are important components in optical glass industry to reduce thermal and mechanical shocks but to increase chemical resistance and durability.

Pharmaceuticals and Cosmetics

Boric Acid is used as a pH buffer and as a moderate antiseptic agent and emulsifier.

Ceramics Industry

Boric compounds are used to control the coefficient of expansion to ensure that the glaze remains fixed with the body without crazing or distortion.

Wood Preservatives and Pesticides

Boric acid are very effective in controlling and eliminating insects and fungi.

Specifications for Peru Origin :

Chemical Specification		
Property	**Expected**	**Maximum**
Sulphate (SO_4)	200 ppm	500 ppm
Chloride (Cl)	150 ppm	300 ppm
Iron (Fe)	4 ppm	8 ppm

Property	Range
Boric Acid (H_3BO_3)	99.90 - 100.20%
Boric Oxide (B_2O_3)	56.24 - 56.41%
Boron (B)	17.46 - 17.52%

Granulometric Specification		
A.S.T.M Sieve N	**µm**	**Retained**
20	850	1.5% max

Bulk Density	
Parameter	**Test Result (t/m^3)**
Typical Range	0.85 - 0.95

Specifications for Turkey Origin :

Chemical Specification	
Property	**Test Result**
B_2O_3	56.25 - 56.90%
Equivalent H_3BO_3	99.92 - 101.07%
SO_4	300 ppm max
Fe	4 ppm max
Cl	5 ppm max

Size	Content
+1.000 mm	4.00% max
-0.063 mm	4.00% max

HS Code : 28100020
CAS No. : 10043-35-3
Origin : Peru, Turkey
Packaging : • 100kg PP bag with polyethylene liner
• 25kg PP bag with polyethylene liner
• 25kg paper bag with polyethylene liner

Boric Acid - Granular 99%

HS Code : 28100020
CAS No. : 10043-35-3
Origin : Argentina
Grade : Industrial
Packaging : • PP 25kg bags: per container up to 27MT/20'FCL, loose packing
• 1.0, 1.1, 1.2 MT big bags: 20/22/24 MT/20' FCL

Specifications :

Chemical Specification	
Parameter	**Unit**
Boric Acid (H_3BO_3)	99.00 ± 0.2%
Boric Oxide (B_2O_3)	56.00 ± 0.1%
Chloride (Cl)	0.3%
Sulphate (SO_4)	0.3%
Iron Oxide (Fe_2O_3)	0.0002%
Sodium (Na)	0.2%
Moisture (H_2O)	< 0.5%

Sieve Specification			
US Standard Sieve (ASTM E11-87)	**Sieve Opening (Micros)**	**Percent Retained**	**Percent Cumulative**
40	425	4.3	4.3
100	150	62.0	66.3
200	75	26.4	92.7
325	45	7.0	99.7
-325	-45	0.3	100

HS Code : 28100020
CAS No. : 10043-35-3
Origin : Chile
Packaging : • PP 25kg bags: per container up to 27MT/20'FCL, loose packing
• 1.0, 1.1, 1.2 MT big bags: 20/22/24 MT/20' FCL

Specifications :

Chemical Specification	
Parameter	**Unit**
Boric Acid (H_3BO_3)	≥ 99.9%
Boron (B)	≥ 17.5
Chloride (Cl)	200 ppm
Sulphate (SO_4)	300 ppm
Iron Oxide (Fe_2O_3)	< 4 ppm
Sodium (Na)	280 ppm
Moisture (H_2O)	< 0.03%

Sieve Specification			
US Standard Sieve (ASTM E11-87)	**Sieve Opening (Micros)**	**Percent Retained**	**Percent Cumulative**
40	425	3.8	3.8
100	150	68.0	71.8
200	75	25.0	96.8
325	45	2.7	99.5
-325	-45	0.5	100

Colemanite F

Colemanite is a borate mineral represented as $CaB_3O_4(OH)_3 \cdot H_2O$. Colemanite is considered as one of the stable borate minerals and able to develops electric charge when there is a change in temperature. It is brittle and belongs to sedimentary rock type. The diaphaneity of Colemanite is transparent to translucent.

HS Code	: 25280090
CAS No.	: 1318-33-8
Origin	: Argentina
Packaging	: Colemanite F natural powder available in 1350kg bulk sacks or 25kg bags

Specifications :

Chemical Specification

Property	Typical	Guarantee
B_2O_3	37	≥ 35
B	11.5	≥ 10.9
CaO	23.8	n.a
SO_4	4.2	n.a
Cl	0.10	n.a
Fe_2O_3	0.7	≤ 0.8
As ppm	107	≤ 134

Sieve Specification

Measurement of Mesh (mm)	Typical (accumulated retained %)	Guarantee (accumulated retained %)
0.425 (ASTM N° 40)	5	n.a
0.075 (ASTM N° 200)	20	n.a

Applications :

Cleaning Agent

Colemanite F is used as an ore of boron and as a source of borax (a cleaning agent and useful for industrial chemical)

Other Applications

Colemanite F It can be used to lower flux temperature, as opacifier, and various industrial, mechanical, glass industry and cosmetics applications

Ground Colemanite

Colemanite ($2CaO.3B_2O_3.5H_2O$) is a colorless or white monoclinic crystal which formed by the evaporation of deposits together with other borates. Colemanite is a secondary mineral which derived from borax and ulexite. Colemanite is a common natural source of insoluble boron and also one of the more stable borate mineral.

HS Code	: 25280090
CAS No.	: 1318-33-8
Origin	: Turkey

Specifications :

Component	Content	Component	Content
B_2O_3	40.00 ± 0.50%	SrO	1.50% max
CaO	27.00 ± 1.00%	Na_2O	0.50% max
SiO_2	4.00 - 6.50%	L.O.I.	25.00% max
SO_4	0.60% max	Moisture	1% max
As	35 ppm max	Bulk Density	1.00 ton/m^3 max
Fe_2O_3	0.08% max	-	-
Al_2O_3	0.40% max	-	-
MgO	3.00% max	-	-

Particle Size	
Size	**Content**
+150 µm	0.50% max
-75 µm	82.00% min

Applications :

Boron-related Industry

Colemanite is an important ore of boron. It has many industrial uses, for instance, the manufacturing of resistant glass.

Mineral-related Industry & Other Applications

As it is a popular collector mineral, Colemanite has many uses in other industries such as medicinal and cosmetics.

Calcined Ulexite 45%

Ulexite is a hydrous sodium calcium borate with formula of $NaCaB_5O_6(OH)_6.5H_2O$. In nature, ulexite is mostly fibrous. Ulexite is popularly called as TV rock as its natural fiber optic character transmits light along their lengths by internal reflection. The physical properties of ulexite is colorless or white triclinic crystal. Ulexiteis a complex mineral containing chains of sodium, water, and hydroxide octahedra.

HS Code	: 252800
CAS No.	: 92908-33-3
Origin	: Peru
Packaging	: 18 MT/20'FT 25kg PP bag

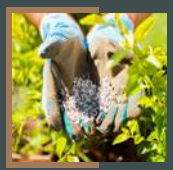
Specifications :

Property	Test Result
Calcium Oxide (CaO)	< 22%
Sodium Oxide (Na_2O)	< 15%
Sulphate (SO_4)	< 15%
Silicon Oxide (SiO_2)	< 15%
MgO	< 15%
K_2O	< 3%
Chloride (Cl)	5% (±2)
B_2O_3	46% (±1)
B	15% (±1)
H_2O	1% (±1)

Mesh Number (U.S.STD.Sleve)	Accumulative Range
N° 5 (4 mm)	10% (±5%)
N° 10 (2 mm)	90% (±5%)

Bulk Density N^2	
Parameter	**Test Result (t/m^2)**
Typical Range	0.65 (±0.1)

Applications :



Agriculture Industry

Calcined Ulexite application in agriculture industry is to correct soil which is boron deficient

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