Composition

Atlantic Seawater is prepared from natural open-ocean water collected from the surface waters of the mid-Atlantic. It is treated with ultra-violet light and filtered to 0.2 microns to minimise microbial contamination. However this product is not classified as sterile.

The chemical composition of Atlantic Seawater will be similar to published data for open-ocean seawater (see example table below) although the concentrations of some of the minor elements may vary as a result of processing and storage.

Concentrations and most important chemical species of some dissolved elements in sea water.
Source: Summerhayes, C. P., and Thorpe, S. A., 1996 : *Oceanography An Illustrated Guide*, **Chapter 11**, 165-181.

Element	**Average concentration**	**Range**	**Units (per kg)**	**Most abundant chemical species[a]**
Lithium	174	b	µg	Li^+
Boron	4.5	b	mg	H_3BO_3
Carbon	27.6	24-30	mg	HCO_3^-,CO_3^{2-}
Nitrogen[c]	420	<1-630	µg	NO_3^-
Fluorine	1.3	b	mg	F^-,MgF^+
Sodium	10.77	b	g	Na^+
Magnesium	1.29	b	g	Mg^{2+}
Aluminium	540	<10-1200	ng	$Al(OH)_4^-$,$Al(OH)_3^0$
Silicon	2.8	<0.02-5	mg	$H_4SiO_4^0$
Phosphorus	70	<0.1-110	µg	HPO_4^{2-},$NaHPO_4^-$,$MgHPO_4^0$
Sulphur	0.904	b	g	SO_4^{2-},$NaSO_4^-$,$MgSO_4^0$
Chlorine	19.354	b	g	Cl^-
Potassium	0.399	b	g	K^+
Calcium	0.412	b	g	Ca^{2+}
Manganese	14	5-200	ng	Mn^{2+},$MnCl^+$
Iron	55	5-140	ng	$Fe(OH)_3^0$
Nickel	0.50	0.10-0.70	µg	Ni^+,$NiCO_3^0$,$NiCl^+$
Copper	0.25	0.03-0.40	µg	$CuCO_3^0$,$CuOH^+$,Cu^{2+}
Zinc	0.40	<0.01-0.6 0	µg	Zn^{2+},$ZnOH^+$,$ZnCO_3^0$,$ZnCl^+$
Arsenic	1.7	1.1-1.9	µg	$HAsO_4^{2-}$
Bromine	67	b	mg	Br^-
Rubidium	120	b	µg	Rb^+
Strontium	7.9	b	mg	Sr^{2+}
Cadmium	80	0.1-120	ng	$CdCl_2^0$
Iodine	50	25-65	µg	IO_3^-
Caesium	0.29	b	µg	Cs^+
Barium	14	4-20	µg	Ba^{2+}
Mercury	1	0.4-2	ng	$HgCl_4^{2-}$
Lead	2	1-35[d]	ng	$PbCO_3^0$,$Pb(CO_3)_2^{2-}$,$PbCl^+$
Uranium	3.3	b	µg	$[UO_2(CO_3)_3]^{4-}$

a Refers to the inorganic speciation in oxygenated waters.
b Variations are determined entirely or largely by those in salinity, i.e., the element is essentially conservative (see text for definition). For these elements, average concentration given is for sea water of salinity 35.
c Concentrations refer to combined nitrogen; element occurs also as dissolved nitrogen (N_2) gas. Species other than NO_3^- are often important in the upper ocean (e.g., NO_2^-, NH_4^+).
d Concentrations are affected by inputs to surface ocean of atmospherically transported lead from combustion of leaded petroleum.