

PROFESSIONAL SEA SALT QUALITY CHECK



Produkt / product: Professional Sea Salt

Charge / Batch: 24638

Konzentration / concentration:

Lösung aus 39 g/l in Osmosewasser / solution of 39 g/l in osmosis water.

Methodik / method:

ICP-OES (induktiv gekoppeltes Plasma mit optischer Emissionsspektrometrie), photometrische und elektrochemische Verfahren spezifisch für Meerwasser / ICP-OES (inductively coupled plasma optical emission spectrometry), photometric and electrochemical methods specific to seawater.

PHYSIKALISCH-CHEMISCHE GRUNDWERTE / BASIC PHYSICAL-CHEMICAL VALUES

| | | Gemessen / measured | Toleranzbereich / tolerance range |
|--------------------------|------|------------------------|--------------------------------------|
| Alkalinität / alkalinity | °dKH | 7,8 | 8,0 - 8,5 |
| pH-Wert / pH value | - | 8,2 | 8,0 - 8,4 |

MAKROELEMENTE UND HALOGENE / MAJOR ELEMENTS AND HALOGENS in mg/l

| | | Gemessen / measured | Toleranzbereich / tolerance range |
|-----------------------------|-------------------------------|------------------------|--------------------------------------|
| Natrium / sodium | Na | 10817 | 10300 - 10700 |
| Schwefel / sulphur | S | 859 | 880 - 920 |
| Sulfat / sulphate | SO ₄ ²⁻ | 2586 | 2650 - 2750 |
| Kalium / potassium | K | 422 | 380 - 400 |
| Bor / boron | B | 5,8 | 5,6 - 6,2 |
| Magnesium / magnesium | Mg | 1307 | 1250 - 1340 |
| Calcium / calcium | Ca | 425 | 410 - 440 |
| Strontium / strontium | Sr | 7,8 | 7,0 - 9,0 |
| Brom / bromine ¹ | Br | 72 | 65 - 75 |
| Fluorid / fluoride | F ⁻ | 1,2 | 1,3 - 1,5 |
| Iod / iodine ² | I | 0,060 | 0,060 - 0,080 |

MAKRONÄHRSTOFFE / MACRONUTRIENTS in mg/l

| | | Gemessen / measured | Toleranzbereich / tolerance range |
|------------------------------------|---|------------------------|--------------------------------------|
| Nitrat / nitrate | NO ₃ ⁻ | 0,0 | n.n. - 0,3 |
| Nitrit / nitrite | NO ₂ ⁻ | 0,000 | n.n. |
| Phosphor / phosphorus ³ | P | 0,001 | n.n. - 0,008 |
| Gesamtphosphat / total phosphate | PO ₄ ³⁻ _{tot.} | 0,003 | n.n. - 0,025 |
| Silizium / silicon | Si | 0,13 | 0,10 - 0,20 |

RELEVANTE SPURENELEMENTE / RELEVANT TRACE ELEMENTS in µg/l

| | | Gemessen / measured | Toleranzbereich / tolerance range |
|-----------------------|----|------------------------|--|
| Zink / zinc | Zn | 4,0 | 3 - 5 |
| Vanadium / vanadium | V | 4,6 | 2 - 5 |
| Kupfer / copper | Cu | 4,9 | 2 - 5 |
| Nickel / nickel | Ni | 4,0 | 2 - 4 |
| Molybdän / molybdenum | Mo | 10,6 | 10 - 16 |
| Barium / barium | Ba | 24,5 | 10 - 20 |
| Cobalt / cobalt | Co | 0,29 | n.n. - 2 |
| Chrom / chromium | Cr | 0,35 | n.n. - 2 |
| Eisen / iron | Fe | > 20 | Rieselhilfsmittel / anti-caking agent ⁴ |
| Lithium / lithium | Li | 183 | 180 - 220 |
| Mangan / manganese | Mn | > 50 | Rieselhilfsmittel / anti-caking agent ⁴ |
| Selen / selenium | Se | n.n. | n.n. - 2 |

SONSTIGE SPURENELEMENTE / OTHER TRACE ELEMENTS in µg/l

| | | Gemessen / measured | Toleranzbereich / tolerance range |
|-----------------------|----|------------------------|--------------------------------------|
| Aluminium / aluminium | Al | n.n. | n.n. - 2 |
| Antimon / antimony | Sb | n.n. | n.n. |
| Arsen / arsenic | As | n.n. | n.n. |
| Beryllium / beryllium | Be | n.n. | n.n. |
| Blei / lead | Pb | n.n. | n.n. |
| Cadmium / cadmium | Cd | n.n. | n.n. |
| Lanthan / lanthanum | La | 3,2 | 2 - 5 |
| Quecksilber / mercury | Hg | n.n. | n.n. |
| Silber / silver | Ag | n.n. | n.n. |
| Titan / titanium | Ti | n.n. | n.n. |
| Wolfram / tungsten | W | n.n. | n.n. |
| Zinn / tin | Sn | n.n. | n.n. |
| Zirkonium / zirconium | Zr | n.n. | n.n. |

Bemerkungen / notes

1 Gesamtbrom, bestimmt mittels ICP-OES / total bromine, measured using ICP-OES

2 Gesamtjod, bestimmt mittels ICP-OES / total iodine, measured using ICP-OES

3 Gesamtphosphor, bestimmt mittels ICP-OES / total phosphorus, measured using ICP-OES

4 Rieselhilfsmittel haben keine bioaktive Wirkung und werden durch Abschäumer entfernt / anti-caking agents have no bioactive effect and are removed by skimmers.

Abkürzungen / Abbreviations:

n.n. (nicht nachweisbar) / n.n. (not detectable)

Tabelle2

| <i>Achtung! Muss < sein</i> | <i>Achtung! Muss < sein</i> | <i>Achtung! Muss < sein</i> | <i>Wenn nötig, anpassen an Soll</i> | <i>Wenn nötig, anpassen an Soll</i> | <i>Achtung! Muss < sein</i> | <i>Wenn nötig, anpassen an Soll</i> |
|------------------------------------|------------------------------------|------------------------------------|---|---|------------------------------------|---|
| Ag < | Al < | As < | B 4,5-6,5 | Ba 5-30 | Be < | Br 55-75 |
| < 4,00 | < 1,000 | < 4,00 | 5,76 | 24,5 | < 0,500 | 71,7 |
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| < 4,00 | 11,20 | < 4,00 | 5,76 | 24,5 | < 0,500 | 71,7 |
| < 4,00 | < 1,000 | < 4,00 | 6,24 | 25,5 | < 0,500 | 74,5 |
| < 4,00 | < 1,000 | < 4,00 | 5,96 | 24,0 | < 0,500 | 68,4 |
| < 4,00 | < 1,000 | < 4,00 | 5,71 | 19,8 | < 0,500 | 77,5 |
| < 4,00 | 1,24 | < 4,00 | 6,10 | 19,2 | < 0,500 | 71,8 |
| < 4,00 | < 1,000 | < 4,00 | 6,32 | 13,2 | < 0,500 | 75,5 |
| < 4,00 | < 1,000 | < 4,00 | 5,92 | 11,8 | < 0,500 | 72,9 |
| < 4,00 | < 1,000 | < 4,00 | 5,71 | 9,9 | < 0,500 | 59,2 |
| < 4,00 | < 1,000 | < 4,00 | 6,15 | 19,7 | < 0,500 | 72,2 |
| < 4,00 | < 1,000 | < 4,00 | 6,37 | 27,9 | < 0,500 | 71,2 |
| < 4,00 | < 1,000 | < 4,00 | 5,96 | 15,1 | < 0,500 | 76,2 |
| < 4,00 | < 1,000 | < 4,00 | 6,00 | 13,6 | < 0,500 | 72,2 |
| < 4,00 | < 1,000 | < 4,00 | 6,16 | 19,6 | < 0,500 | 80,7 |
| < 4,00 | < 1,000 | < 4,00 | 5,72 | 10,2 | < 0,500 | 68,0 |
| < 4,00 | < 1,000 | < 4,00 | 5,48 | 6,6 | < 0,500 | 67,5 |
| < 4,00 | < 1,000 | < 4,00 | 6,44 | 12,1 | < 0,500 | 78,8 |
| < 4,00 | < 1,000 | < 4,00 | 4,83 | 15,9 | < 0,500 | 59,8 |
| < 4,00 | < 1,000 | < 4,00 | 6,10 | 15,6 | < 0,500 | 69,7 |
| < 4,00 | < 1,000 | < 4,00 | 5,17 | 12,0 | < 0,500 | 58,0 |
| < 4,00 | < 1,000 | < 4,00 | 6,54 | 14,9 | < 0,500 | 72,9 |

Tabelle2

| <i>Wenn nötig, anpassen an Soll</i> | <i>Achtung! Muss < sein</i> | <i>Wenn nötig, anpassen an Soll</i> | <i>Wenn nötig, anpassen an Soll</i> | <i>Wenn nötig, anpassen an Soll</i> | <i>Wert egal, Anzeige ist fest <28</i> | <i>Achtung! Muss < sein</i> |
|---|------------------------------------|---|---|---|---|------------------------------------|
| Ca 420-459 | Cd < | Co 0,25-1,9 | Cr 0,3-2,3 | Cu 2-6 | Fe > | Hg < |
| 425 | < 0,250 | 0,29 | 0,35 | 4,91 | 79,6 | < 1,000 |
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| 425 | < 0,250 | < 0,300 | < 0,300 | 4,91 | 79,6 | < 1,000 |
| 429 | < 0,250 | < 0,300 | < 0,300 | 4,02 | 57,8 | < 1,000 |
| 420 | < 0,250 | 0,44 | < 0,300 | 4,76 | 73,9 | < 1,000 |
| 429 | < 0,250 | 0,34 | < 0,300 | 4,55 | 54,2 | < 1,000 |
| 426 | < 0,250 | 0,34 | < 0,300 | 3,61 | 60,2 | < 1,000 |
| 458 | < 0,250 | 0,47 | < 0,300 | 3,75 | 64,4 | < 1,000 |
| 423 | < 0,250 | < 0,300 | < 0,300 | 3,76 | 67,0 | < 1,000 |
| 325 | < 0,250 | < 0,300 | < 0,300 | 2,98 | 62,3 | < 1,000 |
| 433 | < 0,250 | < 0,300 | < 0,300 | 3,09 | 53,1 | < 1,000 |
| 448 | < 0,250 | < 0,300 | < 0,300 | 4,23 | 44,8 | < 1,000 |
| 432 | < 0,250 | < 0,300 | < 0,300 | 3,88 | 58,0 | < 1,000 |
| 418 | < 0,250 | < 0,300 | < 0,300 | 4,80 | 44,2 | < 1,000 |
| 436 | < 0,250 | < 0,300 | < 0,300 | 4,97 | 45,2 | < 1,000 |
| 441 | < 0,250 | < 0,300 | < 0,300 | 4,30 | 53,8 | < 1,000 |
| 413 | < 0,250 | < 0,300 | < 0,300 | 3,57 | 42,9 | < 1,000 |
| 443 | < 0,250 | < 0,300 | < 0,300 | 3,98 | 48,9 | < 1,000 |
| 431 | < 0,250 | < 0,300 | < 0,300 | 4,02 | 46,2 | < 1,000 |
| 438 | < 0,250 | < 0,300 | < 0,300 | 4,47 | 43,3 | < 1,000 |
| 440 | < 0,250 | 0,53 | < 0,300 | 3,56 | 46,4 | < 1,000 |
| 440 | < 0,250 | 0,32 | < 0,300 | 3,00 | 42,8 | < 1,000 |

Tabelle2

| <i>Wenn nötig, anpassen an Soll</i> | <i>Wenn nötig, anpassen an Soll</i> | <i>Wenn nötig, anpassen an Soll</i> | <i>Wenn nötig, anpassen an Soll</i> | <i>Wenn nötig, anpassen an Soll</i> | <i>Wert egal, Anzeige ist fest <28</i> | <i>Immer zu niedrig, +10</i> |
|---|---|---|---|---|---|----------------------------------|
| I 0,060-0,08 | K 390-428 | La 2-10 | Li 180-230 | Mg 1260-1420 | Mn > | Mo 10-20 |
| 0,060 | 422 | 3,22 | 183 | 1307 | 46,3 | 10,6 |
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| 0,060 | 422 | 3,22 | 173 | 1307 | 46,3 | 10,6 |
| 0,127 | 427 | < 3,00 | 188 | 1333 | 47,4 | 13,2 |
| 0,068 | 412 | 4,99 | 182 | 1272 | 39,7 | 12,9 |
| 0,063 | 445 | < 3,00 | 171 | 1327 | 46,6 | 11,5 |
| 0,065 | 423 | < 3,00 | 168 | 1303 | 44,4 | 11,9 |
| 0,068 | 442 | 3,94 | 217 | 1403 | 50,8 | 9,8 |
| 0,074 | 426 | < 3,00 | 171 | 1309 | 42,3 | 18,0 |
| 0,070 | 318 | < 3,00 | 159 | 1022 | 36,1 | 5,9 |
| 0,124 | 419 | < 3,00 | 202 | 1304 | 37 | 8,4 |
| 0,106 | 423 | 3,38 | 183 | 1330 | 48,1 | 7,3 |
| 0,079 | 427 | 4,55 | 167 | 1313 | 36,2 | 10,2 |
| 0,089 | 407 | < 3,00 | 169 | 1280 | 45,8 | 8,8 |
| 0,090 | 424 | < 3,00 | 171 | 1323 | 48,2 | 10,9 |
| 0,041 | 420 | 3,11 | 153 | 1316 | 48,4 | 7,8 |
| 0,040 | 418 | 4,11 | 176 | 1273 | 33,9 | 5,7 |
| 0,107 | 428 | 4,68 | 175 | 1368 | 52,4 | 13,4 |
| 0,083 | 419 | 3,93 | 140 | 1327 | 38,7 | 9,0 |
| 0,040 | 419 | 3,77 | 172 | 1333 | 40 | 7,3 |
| 0,055 | 422 | 4,04 | 212 | 1354 | 40,8 | 5,9 |
| 0,084 | 423 | < 3,00 | 178 | 1374 | 41,2 | 7,2 |

Tabelle2

| <i>ca. 10880 – 11030 (Sal beachten)</i> | <i>Wenn nötig, anpassen an Soll</i> | <i>Max. 0,007!</i> | <i>Achtung! Muss < sein</i> | <i>Wenn nötig, anpassen an Soll</i> | <i>Achtung! Muss < sein</i> | <i>Achtung! Muss < sein</i> |
|---|---|--------------------|------------------------------------|---|------------------------------------|------------------------------------|
| Na 10800 – | Ni 3-6 | P 0,002 | Pb < | S 850-950 | Sb < | Se < |
| 10817 | 3,96 | 0,001 | < 4,00 | 859 | < 5,00 | < 5,00 |
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| 10817 | 1,96 | < 0,001928 | < 4,00 | 819 | < 5,00 | < 5,00 |
| 10607 | 2,24 | < 0,001928 | < 4,00 | 854 | < 5,00 | < 5,00 |
| 10895 | 2,29 | < 0,001928 | < 4,00 | 795 | < 5,00 | < 5,00 |
| 10642 | 2,52 | < 0,001928 | < 4,00 | 839 | < 5,00 | < 5,00 |
| 10769 | 1,85 | < 0,001928 | < 4,00 | 835 | < 5,00 | < 5,00 |
| 10495 | 2,45 | < 0,001928 | < 4,00 | 905 | < 5,00 | < 5,00 |
| 10853 | 2,52 | < 0,001928 | < 4,00 | 840 | < 5,00 | < 5,00 |
| 11878 | 1,47 | < 0,001928 | < 4,00 | 701 | < 5,00 | < 5,00 |
| 10831 | 2,34 | < 0,001928 | < 4,00 | 828 | < 5,00 | < 5,00 |
| 10699 | 1,71 | < 0,001928 | < 4,00 | 851 | < 5,00 | < 5,00 |
| 10760 | 1,92 | < 0,001928 | < 4,00 | 830 | < 5,00 | < 5,00 |
| 10649 | 1,81 | < 0,001928 | < 4,00 | 820 | < 5,00 | < 5,00 |
| 10769 | 1,95 | < 0,001928 | < 4,00 | 850 | < 5,00 | < 5,00 |
| 10679 | 1,59 | < 0,001928 | < 4,00 | 840 | < 5,00 | < 5,00 |
| 10880 | 2,13 | < 0,001928 | < 4,00 | 808 | < 5,00 | < 5,00 |
| 10615 | 1,78 | < 0,001928 | < 4,00 | 885 | < 5,00 | < 5,00 |
| 10670 | 1,74 | < 0,001928 | < 4,00 | 850 | < 5,00 | < 5,00 |
| 10814 | 1,45 | < 0,001928 | < 4,00 | 853 | < 5,00 | < 5,00 |
| 10646 | 1,61 | < 0,001928 | < 4,00 | 864 | < 5,00 | < 5,00 |
| 10491 | 2,10 | < 0,001928 | < 4,00 | 881 | < 5,00 | < 5,00 |

Tabelle2

| <i>Zu hoch wegen Glas, 1 hinter das ,</i> | <i>Achtung! Muss < sein</i> | <i>Wenn nötig, anpassen an Soll</i> | <i>Achtung! Muss < sein</i> | <i>Wenn nötig, anpassen an Soll</i> | <i>Achtung! Muss < sein</i> | <i>Wenn nötig, anpassen an Soll</i> |
|---|--------------------------------|-------------------------------------|--------------------------------|-------------------------------------|--------------------------------|-------------------------------------|
| Si 0,15 | Sn < | Sr 6,5-9 | Ti < | V 2-10 | W < | Zn 3-8 |
| 0,134 | < 4,00 | 7,84 | < 1,50 | 4,60 | < 3,50 | 3,95 |
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| 0,341 | < 4,00 | 7,84 | < 1,50 | 4,60 | < 3,50 | 1,95 |
| 0,344 | < 4,00 | 7,93 | < 1,50 | 4,53 | < 3,50 | 1,91 |
| 0,342 | < 4,00 | 8,15 | < 1,50 | 4,43 | < 3,50 | 1,97 |
| 0,337 | < 4,00 | 7,60 | < 1,50 | 4,68 | < 3,50 | 2,03 |
| 0,339 | < 4,00 | 7,68 | < 1,50 | 4,45 | < 3,50 | 2,15 |
| 0,343 | < 4,00 | 8,26 | < 1,50 | 5,12 | < 3,50 | 1,74 |
| 0,343 | < 4,00 | 7,91 | < 1,50 | 4,11 | < 3,50 | 2,42 |
| 0,342 | < 4,00 | 6,79 | < 1,50 | 4,47 | < 3,50 | 1,87 |
| 0,341 | < 4,00 | 7,93 | < 1,50 | 4,62 | < 3,50 | 1,75 |
| 0,342 | < 4,00 | 8,57 | < 1,50 | 4,22 | < 3,50 | 2,52 |
| 0,347 | < 4,00 | 7,75 | < 1,50 | 4,38 | < 3,50 | 2,32 |
| 0,344 | < 4,00 | 7,80 | < 1,50 | 5,35 | < 3,50 | 2,29 |
| 0,351 | < 4,00 | 7,98 | < 1,50 | 3,83 | < 3,50 | 1,77 |
| 0,354 | < 4,00 | 7,46 | < 1,50 | 4,33 | < 3,50 | 2,50 |
| 0,355 | < 4,00 | 7,53 | < 1,50 | 4,08 | < 3,50 | 1,86 |
| 0,361 | < 4,00 | 8,93 | < 1,50 | 3,89 | < 3,50 | 1,89 |
| 0,357 | < 4,00 | 6,73 | < 1,50 | 4,18 | < 3,50 | 2,09 |
| 0,337 | < 4,00 | 7,71 | < 1,50 | 4,44 | < 3,50 | 2,31 |
| 0,341 | < 4,00 | 6,66 | < 1,50 | 4,49 | < 3,50 | 2,11 |
| 0,328 | < 4,00 | 8,44 | < 1,50 | 4,93 | < 3,50 | 7,05 |

