

Химическое потребление кислорода

Технические характеристики

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Chemical oxygen demand (COD) is an indirect measurement of the amount of organic matter in a sample commonly used in water analysis. These reagents break down organic matter and oxidise the compounds, creating a demand for oxygen to complete the reaction.



Ammonium iron(II) sulfate hexahydrate, for analysis, ExpertQ®, ACS, ISO, Reag. Ph Eur

- Synonyms: Iron(II) ammonium sulfate, Ferrous ammonium sulfate, Mohr's salt
- $(\text{NH}_4)_2\text{Fe}(\text{SO}_4)_2 \cdot 6\text{H}_2\text{O}$
- $M = 392,14 \text{ g/mol}$
- CAS [7783-85-9]
- EINECS-No.: 233-151-8
- Solub. in water: (20 °C): 269 g/l
- Melting point: 100 °C
- Tariff number: 2842 90 80 00
- Applications: analytical chemistry, synthesis of polymers, photography.

SPECIFICATIONS

assay (permanganometric): 99,0 - 101,5 %
insoluble in diluted H_2SO_4 : max. 0,01 %
pH (5 %, H_2O): 3,0 - 5,0
chlorides (Cl): max. 0,001 %
phosphates (as PO_4): max. 0,002 %
calcium (Ca): max. 0,002 %
copper (Cu): max. 0,002 %
iron (III) (Fe (III)): max. 0,01 %
lead (Pb): max. 0,001 %
magnesium (Mg): max. 0,002 %
manganese (Mn): max. 0,01 %
potassium (K): max. 0,002 %
sodium (Na): max. 0,01 %
zinc (Zn): max. 0,003 %

Volume

x 500 g

Reference

[HI03160500](#)

Packaging

x 500 g :: Plastic bottle

Volume

x 1 kg

Reference

[HI03161000](#)

Packaging

x 1 kg :: Plastic bottle



Ammonium iron(II) sulfate, solution ~ 0,12 mol/l (0,12 N), for COD determination, according to ISO 6060

- $(\text{NH}_4)_2\text{Fe}(\text{SO}_4)_2 \cdot 6\text{H}_2\text{O}$
- M = 392,13 g/mol
- CAS [7783-85-9]
- EINECS-No.: 233-151-8
- Density: 1,025 g/cm³
- Solub. in water: (20 °C): miscible
- Tariff number: 2833 29 90 00
- Applications: determining COD.

SPECIFICATIONS

titer : 0,119 - 0,129 mol/l

uncertainty : $\pm 0,001$

1 ml = 0,047056 g $(\text{NH}_4)_2\text{Fe}(\text{SO}_4)_2 \cdot 6\text{H}_2\text{O}$ This volumetric solution was checked by means of volumetric methods using a potassium dichromate standard solution, that was also checked against Scharlau's sodium thiosulfate standard solution. Scharlau's volumetric standards are directly traceable to the Standard Reference Materials from NIST (National Institute of Standards and Technology, USA).



Mercury(II) sulfate, for analysis, ExpertQ®, ACS

- Synonyms: Mercury bisulfate
- HgSO_4
- M = 296,65 g/mol
- CAS [7783-35-9]
- EINECS-No.: 231-992-5
- Solub. in water: (20 °C): hydrolysis reaction
- Ignition temp.: > 450 °C
- LD 50 (oral, rat): 57 mg/kg
- EC-Index-No.: 080-002-00-6
- ADR: 6.1 T5 II UN 1645
- IMDG: 6.1 II UN 1645
- IATA/ICAO: 6.1 II UN 1645
- GHS-signal word: Danger
- GHS-H sentences: H300 - H310 - H330 - H373 - H410
- GHS-P sentences: P260 - P284 - P301+P310 - P320 - P405 - P501a
- Tariff number: 2852 10 00 00
- Applications: analytical chemistry, laboratory reagent, electrolyte for batteries.

SPECIFICATIONS

assay (complexometric): min. 99 %

chlorides (Cl): max. 0,003 %

nitrates (NO₃): passes test

cadmium (Cd): max. 0,001 %

calcium (Ca): max. 0,003 %
copper (Cu): max. 0,001 %
iron (Fe): max. 0,003 %
lead (Pb): max. 0,001 %
mercury (I) (as Hg): max. 0,15 %
nickel (Ni): max. 0,001 %
potassium (K): max. 0,002 %
zinc (Zn): max. 0,001 %
Residue after reduction: max. 0,02 %
suitability for COD: passes test



Potassium dichromate 0,04 mol/l / mercury(II) sulfate 80 g/l, solution in sulfuric acid, for COD determination, according to ISO 6060

- Density: ~ 1,19 g/cm³
- Solub. in water: (20 °C): miscible
- ADR: 8 CT1 II UN 2922
- IMDG: 8 II UN 2922
- IATA/ICAO: 8 II UN 2922
- GHS-signal word: Danger
- GHS-H sentences: H331 - H334 - H340 - H350 - H360FD - H373 - H314 - H302 - H317 - H411
- GHS-P sentences: P260 - P303+P361+P353 - P305+P351+P338 - P310 - P320 - P405 - P501a
- Tariff number: 3822 00 00 00
- Applications: analytical chemistry, determining COD.
- Appearance: Orange liquid

SPECIFICATIONS

titer : 0,039 - 0,041

uncertainty : ± 0,001

1 ml = 0,01176 g K₂Cr₂O₇ This volumetric solution was checked by means of volumetric methods using an ammonium iron(II) sulfate standard solution, that was also checked against Scharlau's potassium dichromate volumetric standard. Scharlau's volumetric standards are directly traceable to the Standard Reference Materials from NIST (National Institute of Standards and Technology, USA).



Potassium dichromate, for analysis, ExpertQ®, ACS, ISO, Reag. Ph Eur

- Synonyms: Potassium bichromate, Potassium pyrochromate
- K₂Cr₂O₇
- M = 294,19 g/mol
- CAS [7778-50-9]
- EINECS-No.: 231-906-6
- Solub. in water: (20 °C): 130 g/l
- Melting point: 398 °C
- Boiling point: > 500 °C
- LD 50 (oral, rat): 25 mg/kg
- EC-Index-No.: 024-002-00-6
- ADR: 6.1 T5 II UN 3288
- IMDG: 6.1 II UN 3288
- IATA/ICAO: 6.1 II UN 3288

- GHS-signal word: Danger
- GHS-H sentences: H272 - H301 - H330 - H334 - H340 - H350 - H360FD - H372 - H314 - H400 - H410 - H312 - H317
- GHS-P sentences: P221 - P301+P310 - P303+P361+P353 - P305+P351+P338 - P320 - P370+P378 - P405 - P501a
- Tariff number: 2841 50 00 00
- Applications: oxidizing agent, synthesis of organic products, manufacture of dyes, painting.
- Appearance: Orange solid

SPECIFICATIONS

assay (iodometric): min. 99,9 %
 insoluble matter: max. 0,005 %
 chlorides (Cl): max. 0,001 %
 sulfates (SO₄): max. 0,005 %
 calcium (Ca): max. 0,002 %
 copper (Cu): max. 0,001 %
 iron (Fe): max. 0,001 %
 lead (Pb): max. 0,005 %
 sodium (Na): max. 0,02 %
 loss on drying (105 °C): max. 0,05 %



Potassium dichromate, solution 0,04 mol/l, for COD determination

- K₂Cr₂O₇
- M = 294,19 g/mol
- CAS [7778-50-9]
- EINECS-No.: 231-906-6
- Density: 1,004 g/cm³
- LD 50 (oral, rat): 25 mg/kg (toxic component)
- EC-Index-No.: 024-002-00-6
- ADR: 6.1 T4 III UN 3287
- IMDG: 6.1 III UN 3287
- IATA/ICAO: 6.1 III UN 3287
- GHS-signal word: Danger
- GHS-H sentences: H334 - H340 - H350 - H360FD - H373 - H315 - H319 - H317 - H412
- GHS-P sentences: P260 - P284 - P305+P351+P338 - P321 - P405 - P501a
- Tariff number: 2841 50 00 00
- Applications: analytical chemistry (determining COD), oxidizing agent.

SPECIFICATIONS

factor: 0,999 - 1,001
 uncertainty ± 0,001

1 ml = 0,01176 g K₂Cr₂O₇ This volumetric solution was checked by means of potentiometric methods using a sodium thiosulfate standard solution, that was also checked against Scharlau's potassium iodate volumetric standard. Scharlau's volumetric standards are directly traceable to the Standard Reference Materials from NIST (National Institute of Standards and Technology, USA).



Silver sulfate, for analysis, ExpertQ®, ACS

- Synonyms: Sulfuric acid silver salt
- Ag₂SO₄
- M = 311,79 g/mol

- CAS [10294-26-5]
- EINECS-No.: 233-653-7
- Solub. in water: (25 °C): 8 g/l
- Melting point: 655 °C
- LD 50 (oral, rat): ~ 5000 mg/kg
- ADR: 9 M7 III
- UN 3077
- IMDG: 9 III UN 3077
- IATA/ICAO: 9 III UN 3077
- GHS-signal word: Danger
- GHS-H sentences: H318 - H410
- GHS-P sentences: P280 - P273 - P305+P351+P338 - P310 - P391 - P501a
- Tariff number: 2843 29 00 90
- Applications: analytical chemistry, laboratory reagent, catalyst (determining COD).

SPECIFICATIONS

assay (argentometric): min. 99,5 %
 identity: passes test
 insoluble in water and silver chloride: max. 0,02 %
 chlorides (Cl): max. 0,001 %
 nitrates (NO₃): max. 0,001 %
 copper (Cu): max. 5 ppm
 iron (Fe): max. 10 ppm
 lead (Pb): max. 10 ppm
 nickel (Ni): max. 10 ppm
 zinc (Zn): max. 5 ppm
 non precipitable with HCl (as SO₄): max. 0,03 %



Silver sulfate, solution 0,66% in sulfuric acid

- Ag₂SO₄
- M = 311,79 g/mol
- CAS [10294-26-5]
- EINECS-No.: 233-653-7
- Density: 1,84 g/cm³
- Solub. in water: (20 °C): miscible
- ADR: 8 C1 II UN 3264
- IMDG: 8 II UN 3264
- IATA/ICAO: 8 II UN 3264
- GHS-signal word: Danger
- GHS-H sentences: H314
- GHS-P sentences: P260 - P303+P361+P353 - P305+P351+P338 - P310 - P405 - P501a
- Tariff number: 3822 00 00 00
- Applications: determining COD (catalyst).

SPECIFICATIONS

mixture: 0,66g of silver sulfate in 100 ml of sulfuric acid 96%



Silver sulfate, solution 1% in sulfuric acid, for COD determination, according to ISO 6060

- Ag₂SO₄
- M = 311,79 g/mol
- CAS [10294-26-5]
- EINECS-No.: 233-653-7

- Density: 1,84 g/cm³
- Solub. in water: (20 °C): miscible
- Boiling point: > 340 °C
- LD 50 (oral, rat): 2140 mg/kg (sulfuric acid)
- ADR: 8 C1 II UN 3264
- IMDG: 8 II UN 3264
- IATA/ICAO: 8 II UN 3264
- GHS-signal word: Danger
- GHS-H sentences: H314
- GHS-P sentences: P260 - P303+P361+P353 - P305+P351+P338 - P310 - P405 - P501a
- Tariff number: 3822 00 00 00
- Applications: determining COD (catalyst).

SPECIFICATIONS

mixture: 1 g of silver sulfate in 100 ml of sulfuric acid 96%



Sulfuric acid, 95 - 97%, for analysis, ExpertQ®, ISO, Reag. Ph Eur

- Synonyms: Sulphuric acid
- H₂SO₄
- M = 98,08 g/mol
- CAS [7664-93-9]
- EINECS-No.: 231-639-5
- Density: 1,84 g/cm³
- Solub. in water: (20 °C): miscible
- Melting point: ~ -15 °C
- Boiling point: ~ 310 °C
- Vapour pressure: (20 °C) ~ 0,0001 hPa
- LD 50 (oral, rat): 2140 mg/kg
- EC-Index-No.: 016-020-00-8
- ADR: 8 C1 II UN 1830
- IMDG: 8 II UN 1830
- IATA/ICAO: 8 II UN 1830
- GHS-signal word: Danger
- GHS-H sentences: H290 - H314
- GHS-P sentences: P260 - P303+P361+P353 - P305+P351+P338 - P310 - P405 - P501a
- Tariff number: 2807 00 00 00
- Applications: analytical chemistry, laboratory reagent, acidifying agent, synthesis of organic products, nitrogen determinations.

SPECIFICATIONS

assay (acidimetric): 95,0 - 97,0 %
 appearance: clear and colourless
 colour (Hazen): max. 10
 density (20°/20°): 1,834 - 1,837
 oxidisable substances: passes test
 Identification sulfates: passes test
 chlorides (Cl): max. 0,5 ppm
 nitrates (NO₃): max. 0,5 ppm
 nitrates and nitrites (as NO₃): max. 0,2 ppm
 ammonium (NH₄): max. 2 ppm
 arsenic (As): max. 0,02 ppm
 copper (Cu): max. 0,1 ppm
 iron (Fe): max. 0,5 ppm
 lead (Pb): max. 0,1 ppm
 heavy metals (as Pb): max. 2 ppm
 substances reducing KMnO₄ : max. 5 ppm
 residue on ignition: max. 0,001 %



Sulfuric acid, solution 4 mol/l (8 N), for COD determination, according to ISO 6060

- H₂SO₄
- M = 98,08 g/mol
- CAS [7664-93-9]
- EINECS-No.: 231-639-5
- Density: ~ 1,23 g/cm³
- EC-Index-No.: 016-020-00-8
- ADR: 8 C1 II UN 2796
- IMDG: 8 II UN 2796
- IATA/ICAO: 8 II UN 2796
- GHS-signal word: Danger
- GHS-H sentences: H290 - H314
- GHS-P sentences: P260 - P303+P361+P353 - P305+P351+P338 - P310 - P405 - P501a
- Tariff number: 2807 00 00 00
- Applications: analytical chemistry, laboratory reagent, neutralising agent.

SPECIFICATIONS

factor: 0,999 - 1,001

uncertainty ± 0,001

1 ml = 0,39232 g H₂SO₄ This solution was analysed using a certified reference material (tris(hydroxymethyl)-aminomethane). The certified reference material is ISO 17034 accredited, measured according to ISO/IEC 17025 and traceable to the International System of Units by means of a Standard Reference Material from NIST: SRM® 723 (Tris(hydroxymethyl)aminomethane (HOCH₂)₃CNH₂ (Acidimetric Standard)).

Volume

x 1 l

Reference

[AC20751000](#)

Packaging

x 1 l :: Glass bottle

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