



UREA AMMONIUM NITRATE SOLUTION (UAN)

Urea ammonium nitrate solution is a clear liquid nitrogen fertiliser produced by dissolving urea and ammonium nitrate in water, supplied in the traded grades UAN 30 and UAN 32. Half of the nitrogen is present as urea, one quarter as nitrate and one quarter as ammonium, which gives immediate and delayed nitrogen action from a single application. The product is non-flammable, contains a corrosion inhibitor and is handled in bulk tanks and tankers.

APPLICATIONS

Top dressing and side dressing of cereals, maize, oilseed rape, sugar beet, potatoes and grassland, applied with boom sprayers, drop nozzles, drag hoses or injection equipment.	Fertigation, starter and split nitrogen programmes, and tank mixes with plant protection products or liquid sulphur solutions, where accurate dosing of nitrogen per hectare is required.
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UREA AMMONIUM NITRATE SOLUTION · UAN 30-0-0 · UAN 32-0-0

Specification:

IDENTITY, PHYSICAL AND CHEMICAL CHARACTERISTICS

ITEM OF TEST	TEST RESULTS	METHOD / REFERENCE
NUTRIENT GRADE, N – P ₂ O ₅ – K ₂ O	UAN 30-0-0; UAN 32-0-0; grade agreed per order	Producer specifications UAN 30 / 32; Reg. (EU) 2019/1009, Annex III
APPEARANCE	Clear liquid, free from sediment and suspended matter	Visual; producer safety data sheet UAN 30/32 N
COLOUR	Colourless to pale straw	Visual; producer safety data sheet UAN 30/32 N
ODOUR	Odourless to slight ammonia odour	Organoleptic; producer safety data sheets
TOTAL NITROGEN (N)	30.0 % (UAN 30); 32.0 % (UAN 32) by mass	EN 15750 or EN 15478; declared per Reg. (EU) 2019/1009, Annex III
NITRATE NITROGEN (N-NO ₃)	7.5 % (UAN 30); 8.0 % (UAN 32)	EN 15604 or EN 15476; producer product data sheets UAN 30 and UAN 32
AMMONIACAL NITROGEN (N-NH ₄)	7.5 % (UAN 30); 8.0 % (UAN 32)	EN 15475; producer product data sheets UAN 30 and UAN 32
UREA NITROGEN (N-NH ₂)	15.0 % (UAN 30); 16.0 % (UAN 32)	EN 15604; producer product data sheets UAN 30 and UAN 32
UREA CONTENT	30.5 – 35.6 % (UAN 30); 32.6 – 38.0 % (UAN 32) by mass	Producer specification UAN 30 / 32; producer safety data sheet UAN 30/32 N (32 – 34 % w/w)
AMMONIUM NITRATE CONTENT	38 – 45 % (UAN 30); 41 – 48 % (UAN 32) by mass	Producer specification UAN 30 / 32; producer safety data sheet UAN 30/32 N (42 – 46 % w/w)
WATER CONTENT	approx. 18.8 – 22.1 % (UAN 32); balance of the solution for UAN 30	Producer technical data sheet UAN solution 32
DENSITY, at 16 °C	1.304 kg/L (UAN 30); 1.330 kg/L (UAN 32)	Producer safety data sheet UAN 28 / 30 / 32 (specific gravity at 60 °F)
DENSITY, at 20 °C	approx. 1,304 kg/m ³ (UAN 30); approx. 1,320 kg/m ³ (UAN 32)	Producer product data sheets UAN 30 and UAN 32
pH, at 20 °C	6.4 – 7.2	Producer safety data sheet UAN 30/32 N; producer product data sheets UAN 30 and UAN 32
SALTING-OUT (CRYSTALLISATION) TEMPERATURE	–9 °C (UAN 30); 0 °C (UAN 32)	Producer specification UAN 30 / 32
VISCOSITY, at 20 °C	approx. 5 mPa·s	Producer product data sheets UAN 30 and UAN 32
FREE AMMONIA, max.	500 mg/kg (500 ppm)	Producer specification UAN 30 / 32
CORROSION INHIBITOR	140 – 250 mg/kg (UAN 30); 150 – 250 mg/kg (UAN 32)	Producer specification UAN 30 / 32
BIURET (C ₂ H ₅ N ₃ O ₂), max.	0.5 % (specification value; statutory maximum 12 g/kg dry matter)	Producer product data sheet UAN 30 N; EN 15479 or ISO 18643
NITROGEN QUANTITY PER VOLUME	approx. 39.5 kg N per 100 L (UAN 30); UAN 32 per order	Producer product data sheet UAN 30 N
THERMAL BEHAVIOUR	Boiling point above 100 °C; decomposition above 290 °C; non-flammable	Producer safety data sheet UAN 30/32 N

Nutrient contents, composition ranges, salting-out temperatures, free ammonia and corrosion inhibitor levels are the specification values of the UAN 30 and UAN 32 grades traded on the world market. Analytical methods are the CEN methods listed for inorganic fertilisers in standardisation request M/564 under Regulation (EU) 2019/1009. The declared nitrogen forms and tolerances of the delivered grade are confirmed per order and in the certificate of analysis.

CONTAMINANT AND IMPURITY LIMITS

ITEM OF TEST	TEST RESULTS	METHOD / REFERENCE
CADMIUM (Cd) , max.	3 mg/kg dry matter (total phosphorus below 5 % P₂O₅-equivalent by mass)	Reg. (EU) 2019/1009, Annex I, Part II, PFC 1(C)(l), point 2(a); EN 16319 (ICP-AES, aqua regia)
HEXAVALENT CHROMIUM (Cr VI) , max.	2 mg/kg dry matter	Reg. (EU) 2019/1009, Annex I, Part II, PFC 1(C)(l), point 2(b); EN 16318 (photometry / ion chromatography)
MERCURY (Hg) , max.	1 mg/kg dry matter	Reg. (EU) 2019/1009, Annex I, Part II, PFC 1(C)(l), point 2(c); EN 16320 (vapour generation, aqua regia)
NICKEL (Ni) , max.	100 mg/kg dry matter	Reg. (EU) 2019/1009, Annex I, Part II, PFC 1(C)(l), point 2(d); EN 16319 (ICP-AES, aqua regia)
LEAD (Pb) , max.	120 mg/kg dry matter	Reg. (EU) 2019/1009, Annex I, Part II, PFC 1(C)(l), point 2(e); EN 16319 (ICP-AES, aqua regia)
ARSENIC (As) , max.	40 mg/kg dry matter	Reg. (EU) 2019/1009, Annex I, Part II, PFC 1(C)(l), point 2(f); EN 16317 (ICP-AES, aqua regia)
BIURET (C₂H₅N₃O₂) , max.	12 g/kg dry matter	Reg. (EU) 2019/1009, Annex I, Part II, PFC 1(C)(l), point 2(g); EN 15479 or ISO 18643 (HPLC)
PERCHLORATE (ClO₄⁻) , max.	50 mg/kg dry matter	Reg. (EU) 2019/1009, Annex I, Part II, PFC 1(C)(l), point 2(h); EN 17246 (ion chromatography)
COPPER (Cu) , max.	600 mg/kg dry matter (does not apply where copper is intentionally added and declared)	Reg. (EU) 2019/1009, Annex I, Part II, PFC 1(C)(l), point 3; CEN/TS 17754
ZINC (Zn) , max.	1,500 mg/kg dry matter (does not apply where zinc is intentionally added and declared)	Reg. (EU) 2019/1009, Annex I, Part II, PFC 1(C)(l), point 3; CEN/TS 17754
NITROGEN AS A RESULT OF AMMONIUM NITRATE	Restricted above 16 % N by mass from ammonium nitrate, equivalent to 45.7 % ammonium nitrate; the product is supplied to professional users only	Reg. (EU) 2019/1148, Annex I (restricted explosives precursors); EN 15476
SEDIMENT AND SUSPENDED MATTER	Free from sediment and suspended matter on delivery; homogenise the tank after winter storage	Visual; producer storage guidance UAN 30 N

All contaminant limits are the statutory maxima for inorganic macronutrient fertilisers laid down in Regulation (EU) 2019/1009, Annex I, Part II, PFC 1(C)(l), points 2 and 3. Because the product contains no declared phosphorus, the cadmium limit applied is 3 mg/kg dry matter. Ammonium nitrate is a restricted explosives precursor under Regulation (EU) 2019/1148, Annex I, above 16 % nitrogen by mass in relation to ammonium nitrate; consignments are therefore supplied to professional users against the documentation required by that Regulation. Batch results are reported in the certificate of analysis.

Product: urea ammonium nitrate solution, straight liquid nitrogen fertiliser

CN / HS code: 3102 80 00 (mixtures of urea and ammonium nitrate in aqueous or ammoniacal solution)

EU product function category: PFC 1(C)(l)(b)(i), straight liquid inorganic macronutrient fertiliser

Components: ammonium nitrate, CAS 6484-52-2, and urea, CAS 57-13-6, in water

Traded grades: UAN 30-0-0; UAN 32-0-0

Applications: top and side dressing of cereals, maize, oilseed rape, sugar beet, potatoes and grassland; fertigation; tank mixes with plant protection products

Packaging: bulk road and rail tankers, coastal and inland tank vessels; intermediate bulk containers 1,000 L by agreement

Storage & transport: closed carbon steel or stainless steel tanks, dry and well-ventilated, away from heat, ignition sources and combustible materials; above the salting-out temperature of the grade

Shelf life: as agreed per order; the product does not deteriorate on correct storage, but crystallises below –9 °C (UAN 30) or 0 °C (UAN 32); homogenise the tank after winter storage

COMPLIANCE & DOCUMENTATION

- The product is placed on the Union market as an EU fertilising product of product function category PFC 1(C)(l)(b)(i) under Regulation (EU) 2019/1009; the EU declaration of conformity and CE marking documentation of the producing plant are available on request.
- Total nitrogen and the declared nitrogen forms are stated as % by mass and are subject to the tolerance of ± 20 % relative deviation, up to a maximum of 1.5 percentage points in absolute terms, laid down in Annex III, Part III of Regulation (EU) 2019/1009.
- The product is a mixture of substances registered under Regulation (EC) No 1907/2006 (REACH); the registration numbers of ammonium nitrate and urea are stated in the safety data sheet of the delivered grade.
- Under Regulation (EC) No 1272/2008 (CLP) the mixture is classified in the producers' safety data sheets as Eye Irrit. 2, H319; it is non-flammable and non-oxidising as supplied, and is not regulated for transport under the international dangerous goods rules according to those safety data sheets.
- Ammonium nitrate is listed in Annex I to Regulation (EU) 2019/1148 on the marketing and use of explosives precursors; consignments are supplied to professional users only and suspicious transactions are reported as required by that Regulation.
- The solution contains a corrosion inhibitor that reduces the corrosion rate of carbon steel under ambient conditions; the product remains corrosive to copper, copper alloys and zinc, and evaporation to dryness must be avoided.
- Each consignment is accompanied by a certificate of analysis with batch-specific results; producer safety data sheets and plant management-system certificates are available on request.

References: Regulation (EU) 2019/1009, consolidated text, Annex I, Part II, PFC 1(C)(l), eur-lex.europa.eu; Standardisation request M/564 for fertilising products (CEN methods per parameter), fertilizer-certification.eu; Product specification sheet Urea Ammonium Nitrate Solution 28 / 30 / 32 %, CF Industries, cfindustries.com; Safety data sheet UAN 30/32 N, OCI Nitrogen, documentation.oci-global.com; Product data sheets UAN-30 and UAN-32 solution, Yara, yara.us; Regulation (EU) 2019/1148 on explosives precursors, Annex I, eur-lex.europa.eu.

This specification is issued for information purposes and does not constitute a warranty. Batch-specific values are confirmed in the certificate of analysis accompanying each consignment.