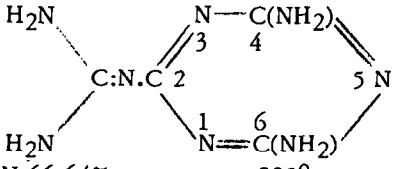


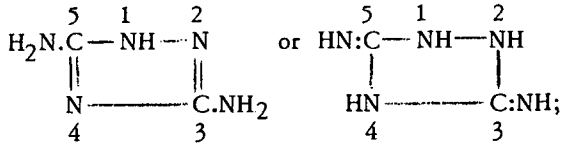
; mw 168.17, N 66.64%; crysts, mp 225°; was obtd as one of the products from reaction of cyanomelamine with KOH & NH_3. Its substituted derivs such as *Picrate*, mp 258-60° (Ref 2) & 290.5° (Ref 3) and *Dipicrate*, mp 257.7° (Ref 3) were also prepd as flameproofing agents. By depositing 10-40% of *Guanylmelamine Pyrophosphate* (obtd by reaction of guanylmelamine-HCl with di-Na di-H pyrophosphate) on a fabric, this compd was found to have fire retardant props for cellulosic materials (Ref 4)

The UV absorption spectra are reported by Hirt et al (Ref 5)

Refs: 1) Beil-not found 2) D.W. Kaiser & B.C. Redmon, USP 2537834(1951) & CA **45**, 4275(1951); BritP 653520(1951) & CA **45**, 10258(1951) 3) M.Kurabayashi & K. Yamagiya, ReptsGovChemIndResInst, Tokyo **48**, 139-57(1953)(English summary); JChemSoc-Japan, IndChemSect **56**, 426-28(1953) & CA **48**, 11429(1954) 4) A.M. Loukomsky, USP 2779691(1957) & CA **51**, 6181(1957) 5) R.C. Hirt et al, SpectrochimActa **1959**, 962-68 (English) & CA **54**, 8286(1960)

DIAMINOTRIAZOLE AND DERIVATIVES

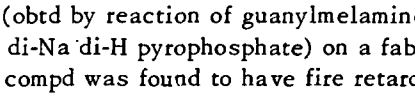
3,5-Diamino-α-s-triazole, Aminoaminotriazole or Guanazole (called 3,5-Diimino-1,2,4-triazolidin; Urazol-diimid; 3,5-Diamino-1,2,4-triazol; or Guanazol in Ger),



mw 99.10, N 70.68%; monoclinic prisms (from w), mp 204-06°; readily sol in w, giving an alk soln; mod sol in alc; insol in eth, chlf & benz; was first prepd in 1894 by heating at 100° for several hrs an alc soln of equimolar quantities of dicyandiamide & hydrazinohydrochloride; also prepd in good yield by heating a mixt of dicyandiamide & hydrazinehydrate on a w bath (Refs). Some derivs of Diaminotriazole are expl

Refs: 1) Beil **26**, 193 & (57) 2) G. Pellizzari, Gazz **24**(I), 491(1894) & JCS **66**(I), 518(1894) 3) K.A. Hofmann & O.Ehrhart, Ber **45**, 2733(1912) 4) R. Stollé & K. Krauch, JPraktChem **88**, 310-11(1913) 5) R. Stollé & W. Dietrich, JPraktChem **139**, 193-210 (1934)& CA **28**, 2714(1934)

3,4-Diamino-4H-1,2,4-triazole or 3,4-Diamino-γ-s-triazole,

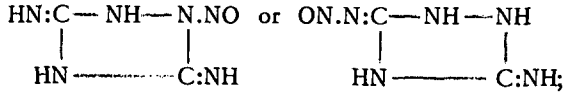


; large col plates (from alc), mp 216-18°; was prepd by refluxing 3,4-diamino-5-mercapto-4,1,2-triazole in alc with Raney Ni for 1 hr (Ref 2)

The *Nitrate*, $C_2H_6N_6O_3$, col ndls (from alc), mp 198-99°, was prepd by Lieber et al (Ref 3)

Refs: 1) Beil-not found 2) E. Hoggarth, JCS **1952**, 4816 & CA **48**, 5182(1954) 3) E. Lieber et al, JOC **18**, 227(1952)& CA **48**,1344(1954)

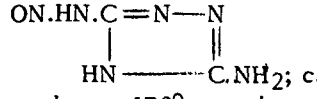
Mononitroso-3,5-diamino-α-s-triazole,



mw 128.10, N 65.61%; yel ppt; dec in hot w; insol in common org solvs; was prepd by treating guanazole with $NaNO_2$ in cold AcOH soln

Refs: 1) Beil **26**, (57) 2) R. Stollé & K. Krauch, JPraktChem **88**, 311(1913)

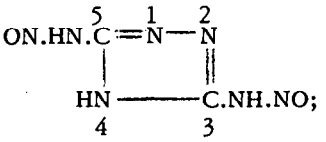
5-Nitrosamino-3-amino-γ-s-triazole,



; canary-yel crysts, mp dec ca 172°; warming with AcOH causing splitting off of HNO_2; with concd HCl it rearranges to 3-amino-1,2,4-5-diazonium chloride; was prepd from guanazole & NH_4NO_2 in alc (Ref 2)

Refs: 1) Beil-not found 2) R. Stollé & W. Dietrich, JPraktChem **139**, 193(1934) & CA **28**, 2714(1934)

3,5-Dinitrosamino-γ-s-triazole [called 3,5-Bis(nitrosoamino)-tetrazole in CA Coll Formula Index **14-40**(1920-46), p 181],



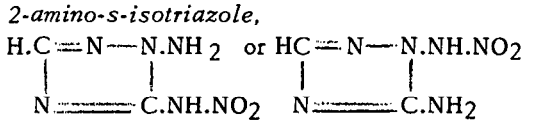
mw 157.10, N 62.42%; orn-red amor solid, mp dec 187°; was prepd from guanazole in 7N alc-HCl & NH_4NO_2

Reduction of the dinitroso compd with $SnCl_2$ & concd HCl gives *3-Amino-5-hydrazino-1,2,4-triazole di-HCl*, mp 217° (dec), which in an ice-cold aq soln & $NaNO_2$ gives **5-Azido-3-nitrosamino-1,2,4-triazole,** an ocher amor solid, mp detonates at 134° (Ref 2)

Compare with AMINOTRIAZOLE AND DERIVATIVES, Vol 1, of this Encycl, p A267-Rff

Refs: 1) Beil-not found 2) R. Stollé & W. Dietrich, JPraktChem **139**, 193(1934) & CA **28**, 2714(1934)

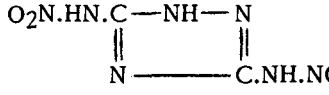
Mononitraminoaminotriazole, *3-Nitramino-2-amino-s-isotriazole,*



mw 144.10, N 58.33%; obtd from the nitrate deriv by treatment with H_2SO_4; its impact sensitivity expressed as FI is 47% of PA and its power & brisance are less than that of PA (Ref 2)

Refs: 1) Beil-not found 2) A.H. Blatt & F.C. Whitmore, "A Literature Survey of Explosives", OSRD **1085**(1942), p 62 3) Blatt, OSRD **2014**(1944)(Under Triazoles)

3,5-Dinitramino-α-triazole Salts,



this compd was isolated in the form of salts, of which the following were prepd by Henry et al (Ref 3):

Monoaminoguanidinium, $C_3H_9N_{11}O_4$, rosettes of ndls (from w), mp 180° dec

Monoammonium, $C_2H_6N_8O_4$, felted rosettes of fine wh ndls (from w), mp 182-84° decompg

Monoguanidinium, $C_3H_8N_{10}O_4$, crysts (from w), mp 176-79° & 186-87° dec

Monopotassium, $C_2H_2N_7O_4K$, crysts (from w), mp 199-200° dec

Prepn of the above salts is given by Henry et al (Ref 3)

Stollé & Dietrich (Ref 2) report a *Dinitrate* compd, pale-yel crysts, mp exploding when heated rapidly at 145°; was prepd by treating a soln of guanazole in 2NHCl with 65% HNO_3

Refs: 1) Beil-not found 2) R. Stollé & W. Dietrich, JPraktChem **139**, 193-210(1934) & CA **28**, 2714(1934) 3) R.A. Henry et al, JACS **75**, 961-62(1953) & CA **48**, 2050(1954)

Diammine-cadmium-nitrate. See under Ammines in Vol 1, p A277

Diammine-copper-nitrate. See Vol 1, p A280

Diammine-manganese-fulminate. See Vol 1, p A281

Diammine-zinc-fulminate. See Vol, p A281

Diammine-zinc-nitrate. See Vol 1, p A281

Diamond Ordnance Fuze Laboratories (DOFL). A US Ordnance Corps installation located in Washington, DC. These laboratories are engaged in research & development, procurement and associated activities for proximity, electronic & electric fuzes and related items. This facility is now called Harry Diamond Laboratories

Ref: OrdTechTerm(1962), p 99

Diamylamine Perchlorate or Dipentylamine Perchlorate, $[CH_3.(CH_2)_4]_2NH.HClO_4$, crysts, mp explodes at 323°; was prepd by double decompn of diamylamine HCl & Ag perchlorate (Ref 2)