

TLC OF NITRATE ESTERS

	<u>SEPARATED COMPOUNDS</u>	<u>ABSORBENT MATERIAL</u>	<u>DEVELOPING SOLVENT</u>	<u>VISUALIZATION OF R_F VALUES</u>	
1	EGDN, DEGN, NG, diglycerol tetranitrate	Silica gel	Benzene-Pet Ether (1:1)	1% DPA in H ₂ SO ₄	
2	EGDN, DEGN, NG, PETN, MHN, sorbitol hexanitrate (SHN)	a.Silica gel G b.Magnesium Silicate c.Alumina	a.Toluene b.Chloroform c.Xylene d.PET Ether- 1,2-Dichloro- ethane (4:1)	1% DPA in ethanol followed by UV irradiation	
3	NG, NC	Silica gel G	Benzene	NaOH/Greiss rgt	
4	Glycerol, glycerol 1- & 2-nitrate, glycerol 1,2-&1,3- dinitrate, NG	Silica gel G	a.Benzene-Ethyl Acetate-Acetic acid(16:4:1) b.Ethyl Acetate -n-Heptane (9:1)	Radio scanning (compounds were ¹⁴ C tagged) **NOTE** Developing solvent "a" was best for dinitrates & "b" for mononitrates	
5	Some pharmaceutically employed nitrate esters including NG, PETN, MHN, and erythritol tetra- nitrate	Silica gel G	a.Carbon Tetra- chloride- Acetone (4:1) b.2-dimesional: (1)Ether (2)Carbon Tetra chloride- Acetone (4:1)	1% DPA in Acetone-Ethanol (2:1) followed by UV irradiation **NOTE** The two dimensional system gave the best overall separation.	
6	Pentaerythritol and its mono-, di-, tri- and tetra (PETN) nitrates	Silica gel G	a.Toluene-Ethyl Acetate(1:1) b.Ethyl Acetate saturated with water	a.For the nitrate esters- 1%DPA in ethanol and UV b.For penta- erythritol	

				$\text{NaIO}_4/\text{KMnO}_4/\text{NaCO}_3$ **NOTE** Developing solvent "a" did not separate the alcohol from its mono-nitrate and "b" did not separate PETN from the Tri-nitrate.	
7	PETN, Pentaerythritol trinitrate, Dipentaerythritol hexanitrate & Tri-pentaerthritol octanitrate	Silica gel G (with Zn dust & Na sulfanilate)	Benzene-Acetone (24:1)	N,N-Dimethyl-1-naphthylamine in Acetic acid (Greiss type reaction)	
8	EGDN, NG, PETN	Silica gel G	Chloroform	1% DPA in Conc. H_2SO_4	