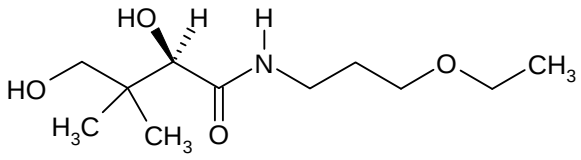
Vitamin B5 ExtraLite™ (D-Pantothenyl Ethyl Ether)

D-Pantothenyl Ethyl Ether is the more stable ether form of Pantothenic Acid (Vitamin B5).

CAS No. / EINECS	667-83-4 / 211-569-1
INCI/CTFA	Panthenyl Ethyl Ether
CN Code	2936 2400

SPECIFICATION

Chemical structure



Chemical formula	$C_{11}H_{23}NO_4$	**Molecular weight**	233,31
Characters	colourless to light yellow, clear, viscous liquid		
Odour	slightly characteristic		
Identification	Ninhydrin reaction		
pH	9,0 to 11,0		
Specific optical rotation (20°C)	+27,5° to 29,5°		
Refractive Index (20°C)	1,474 to 1,476		
Heavy metals	not more than 20ppm		
Water (Karl Fischer method)	not more than 0,5%		
Residue on ignition (sulphated ash)	not more than 0,1%		
Ethoxypropylamine	not more than 0,5%		
Assay	not less than 98,0%		

Microbiological limits

- Total aerobic microbial count: max. 100cfu/g
- Total yeast and moulds count: max. 10cfu/g

Storage and packaging

- Expiry date
  in unopened original packaging and under adequate storage conditions minimum 2 years after production date
- Storage condition
  store in tight container at room temperature (JP: 1°C to 30°C)
- Standard packaging
  20kg PE bottle, cartonized

REACh

D-Pantothenyl Ethyl Ether has been pre-registered. The final REACh registration will consider and assess the uses recommended by COLIPA.

Formulating

D-Pantothenyl Ethyl Ether is a viscous liquid, but fairly to handle at room temperature. It is easily soluble in water, alcohol, propylene glycol, glycerin and readily miscible in some typical cosmetic oils such as corn oil, sunflower oil peanut oil, castor oil and insoluble in paraffin oil, methicone, fats and mineral oil.
Exposure to heat exceeding 70°C-75°C may cause racemization. D-Pantothenyl Ethyl Ether is stable in neutral or less acidic aqueous solution (ph 4-6), less stable in acidic or alkaline aqueous solution by hydrolytic cleavage.
The recommended usage level of D-Pantothenyl Ethyl Ether is 0,3% to 5,0%.

Toxicological Data*

- Acute oral toxicity OECD 401 (rats): LD_{50} > 2000mg/kg
- Acute dermal toxicity OECD 402 (rats): LD_{50} > 2000mg/kg
- Acute eye irritation OECD 405 (rabbits): non-irritant
- Acute dermal irritation OECD 404 (rabbits): non-irritant
- Sensitization test OECD 406 (guinea pigs): non sensitizer

*test were done before March 2009, reports available on request

Physiological function

- in comparison with D-Panthenol the deposition of D-Pantothenyl Ethyl Ether on the hair and the penetration into the hair is greater