

(8) Ricin

CAS No. 9009-86-3

NIOSH/RTECS No. VJ 26250000

Merck 8211

Synonyms: Ricin A, Ricin B, RCA (Ricin Communis Agglutin) RCA₆₀, RCA₁₂₀, Ricin D, RCL 111, RCA₁₁.

Physical Properties: It is a white powder obtained from castor beans. It is normally preformulated due to its great toxicity; RCA₆₀ and RCA₁₂₀ refer to molecular weights of 60000 and 120000 respectively.

Synthesis: Castor oil seeds are pressed to remove the commercially valuable castor oil. The oil cake residue is mainly protein and it is the source of the poisonous albumin called ricin which is a polymeric protein. The ricin is destroyed by steam treatment of the oil seed cake that is then used for animal feeds or fertilizer.

Toxicity: Amongst the most poisonous substances known. The lowest published lethal concentration (LDLo) is 300 mg/kg. It is a deadly poison by ingestion or inhalation. The effect of inhalation/ingestion is violent purging which leads to collapse and death; it causes destruction of red blood cells; as few as 5 castor beans have resulted in the death of children.

Uses: It is used in biochemical research and in medicine. Ricin conjugated with mono- or polyclonal antibodies is being investigated as a possible cancer treatment.

Suppliers: Two suppliers are listed for the USA. However 22 suppliers of castor oil are listed in 12 countries. These are: Canada (1), PRC (1), Mexico (1), India (3), Japan (5), Australia (2), Belgium (2), France (1), UK (1), Italy (1), Portugal (2) and Spain (2).