

PROPERTIES:

- ◆ Stearic acid is a waxy crystalline solid melting at 69.6⁰C.
- ◆ It is practically insoluble in water [0.00029 g / 100 g of water at 20⁰C], fairly soluble in chloroform [0.5g / 100ml] and decreasingly soluble in CS₂, C₆H₆, CCl₄,CH₃CH₂OH and CH₃ – O – CH₃.

OTHER PROPERTIES:

Molecular weight : 284.47

Melting point : 69.3⁰C

Boiling point : 383⁰C

Specific gravity : 0.847

Neutralization value : 197.23

| | Single Pressed | Double Pressed | Triple Pressed |
|--------------------------------------|----------------|----------------|----------------|
| Saponification Value (mg KOH/g) | 193-220 | 203-214 | 206-211 |
| Iodine value (g/I ₂ 100g) | 10-14 | 7--9 | 2--4 |
| Solidifying Point (°C) | 54-57 | ≥54 | ≥52 |

Table 1.1 Properties of Pressed Stearic Acid

SOURCES:

Stearic acid occurs in most fruit flesh and seed fats and in marine animal oils. It has also been reported to comprise somewhat more than 1% of carnauba wax. Palm oil contains 2 to 6% of this acid; Most so called yellow oils (Cotton seeds, Corn, Soybean, Peanut, Sesame, Sunflower, Kapole) contain 2 to 8%, milk fats – 5 to 15%) lard 10 to 12% ,tallows – 14 to 30%, Cocoa and Shea butters – 30 to 35%. It is a principal constituent of most commercially hydrogenated fats and constitutes as much as 90% of completely hydrogenated corn and soybean oils.

USES:

Widely used as Latex's vulcanized activator for natural rubber and synthetic rubber products (except Butyl alcohol). Also used as plasticizer, softener, water – proofing agent, polishing agent and oiling agent, antistatic agent in textile industry, lubricant in metal machining, mold releasing agent in tile making etc. or used as additive for Polyethylene, Polypropylene, PVC etc. Potassium salts of fatty acids with excess stearic acid give a slow drying lather for shaving soap. Derivations of stearic acid are used in manufacture of Soaps, Metallic salts, Stearoyl chlorides, Bromide, Steramide, Stearonitrile, Stearyl alcohol.