

OLEIC ACID

PRODUCT IDENTIFICATION

CAS NO.	112-80-1; 8046-01-3; 17156-84-2; 56833-51-3
EINECS NO.	204-007-1
FORMULA	$\text{CH}_3(\text{CH}_2)_7\text{CH}=\text{CH}(\text{CH}_2)_7\text{COOH}$
MOL WT.	282.47
H.S. CODE	3823.12
DERIVATION	
TOXICITY	Oral rat LD50: 74000 mg/kg
SYNONYMS	9-Octadecenoic acid (Z)-; (Z)-9-Octadecenoic acid; cis-9-Octadecenoic acid; Red oil; Metaupon; 9-octadecenoic acid; cis-Delta-9-octadecanoate; cis-octadec-9-enoic acid; Ooleoate;

CLASSIFICATION

PHYSICAL AND CHEMICAL PROPERTIES

PHYSICAL STATE	pale yellow oily liquid
MELTING POINT	> 13 C
BOILING POINT	> 290 C
SPECIFIC GRAVITY	0.89 - 0.899
SOLUBILITY IN WATER	insoluble
pH	
VAPOR DENSITY	
AUTOIGNITION	
NFPA RATINGS	Health: 1 ; Flammability: 1; Reactivity: 0
REFRACTIVE INDEX	
FLASH POINT	180 C
STABILITY	Stable under ordinary conditions.

GENERAL DESCRIPTION & APPLICATIONS

Fatty Acids are aliphatic carboxylic acid with varying hydrocarbon lengths at one end of the chain joined to a (-COOH) group at the other end. The general formula is $\text{R}-(\text{CH}_2)_n-\text{COOH}$. Fatty acids are predominantly unbranched with even numbers of carbon atoms between 12 and 22 carbons long react with glycerol to form lipids (fat-soluble substances) in plants, animals, and microorganisms. Fatty acids all have common names respectively lauric (C12), myristic (C14), palmitic (C16), stearic (C18), oleic (C18, unsaturated), and linoleic (C18, polyunsaturated) acids. The saturated fatty acids have no solid bonds, while oleic acid is an unsaturated fatty acid has one solid bond (also described as a double bond). Polyunsaturated fatty acids like linolenic acid contain two or more solid bonds. Lauric acid (also called Dodecanoic acid) is the main acid in coconut oil (45 - 50 percent) and palm kernel oil (45 - 55 percent). Nutmeg butter is rich in myristic acid (C14). Tetradecanoic acid (also called Myristic acid) which constitutes 60-75 percent of the fatty-acid content. Palmitic acid (also called Hexadecanoic acid) constitutes between 20 and 30 percent of most animal fats and is also an important constituent of most vegetable oils (constitutes 40-50 percent of palm oil). Saturated carboxylic acids (C1 – C10) are liquids whereas long chain saturated fatty acids with long carbon chains form a compact pile in a regular pattern with high van der Waals attractions resulting in high melting points. If no solid bonds are present in the fatty acid portion of the molecule, the fat is said to be unsaturated. Monounsaturated fatty acids contain only one solid bond; polyunsaturated contains more than one solid bond (up to a maximum of about six) and can be saturated, conjugated and can form geometric cis/trans isomers. Naturally occurring unsaturated fatty acids are liquids at room temperature. The cis- geometrical configuration which twists molecular structure (the kink of the cis form); can not pack closely together. Unsaturated fatty acids in the kinked, cis form are much more common in cells than the trans form which is straight and can pack in one direction without a pronounced kink. The cis form of unsaturated fatty acids are more fluid at biological temperatures. Saturated fatty acids are more abundant in living organisms. Fatty acids are named by the number of carbon atoms n and the number of double bonds m as (n:m). The system for naming solid bond position is to indicate the first solid bond in the carbon backbone starting from the opposite end from the carboxyl group. The terminal carbon atom is called the omega carbon atom. The term omega-6" signifies that their single solid bond is occurred at carbon number 3 or 6 respectively counted from the end of the chain nearest the carboxyl group.

omega carbon. Human bodies are not capable of synthesizing omega-3 and omega-6 fatty acids which are essential fatty acids must be obtained through the diet. (These fatty acids were designated as "Vitamin F", until it was determined that they must be classified with the fats.) Fatty acids are converted to energy through the process called fatty acid oxidation. Fatty acids are used as basic building blocks of biological membranes, for long-term energy storage (the monoglycerides and triglycerides) as well as for the precursors of eicosanoid hormones.

SALES SPECIFICATION

APPEARANCE	pale yellow oily liquid
COMPOSITION	C14 2% + C16 10% + C18:1 70% + C18:2 11% + C18:3 2%
ACID VALUE	195 - 205
IODINE VALUE	95 max
SAP VALUE	197 - 205
UN SAP	1.5% max
TITER	10 C max
COLOR	2.0Y 2.5R (5.25" Lovibond Cell)

TRANSPORTATION

PACKING	180kgs in drum
HAZARD CLASS	Not regulated
UN NO.	

OTHER INFORMATION

Hazard Symbols: XI, Risk Phrases: 36/37/38, Safety Phrases: 28A-37-45