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School Materials Safety Manual:

No. 251 Oleic Acid
Issued 9/90

♦ SECTION 1 INTRODUCTION

Material Oleic Acid, ca 100%

Chemical Formula $C_{17}H_{33}COOH$

CAS Number 0112-80-1

DOT Classification Not listed as a Hazardous Material for Transportation (49 CFR 172.101)

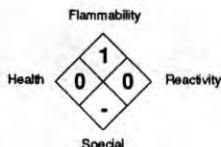
EPA Classification Not listed as a RCRA Hazardous Waste (40 CFR 261.33), a CERCLA Hazardous Substance (40 CFR 302.4), a SARA Extremely Hazardous Substance (40 CFR 355), or a SARA Toxic Chemical (40 CFR 372.65)

OSHA Classification Not listed as an Air Contaminant (29 CFR 1910.1000, Subpart Z)

Synonyms cis-8-Heptadecylenecarboxylic acid, cis-9-octadecenoic acid, 9-octadecenoic acid, Glycon RO, Glycon WO, K52, red oil

NFPA Hazard Rating

4 = Extreme
3 = High
2 = Moderate
1 = Slight
0 = Minimum



Description A nonsaturated fatty acid occurring in glycerides in vegetable oils and animal fats and oils. Pale yellow-to-red oily liquid with a characteristic fatty odor.

Overview Used in making textile soaps, synthetic detergents, lubricants, sulfonated oils and cosmetics, and in compounding rubber. Oleic acid is most likely found in a school environment as an ingredient of commercial products the custodial/maintenance staff uses. Although the information provided here pertains to this chemical alone, its hazards and precautions are applicable to products containing it as well. Although somewhat flammable, this material is not expected to be unusually hazardous.

Manufacturer Always request an up-to-date MSDS from your chemical supplier. That sheet should identify the substance's manufacturer and include an emergency phone number. This *Manual's* Resources/Manufacturers Index lists some larger manufacturers and available emergency phone numbers.

♦ SECTION 2 USE AND STORAGE DATA

Preliminary Planning Considerations Plan and provide for safe disposal of all school-generated chemical waste. Check applicable regulations prior to use. For safety, do not wear contact lenses in the lab; soft lenses may absorb, and all lenses concentrate, irritants. Wear impervious gloves to minimize skin contact. Employees and students should know the location of eyewash and shower facilities near where chemicals are used. Be sure eyewash stations and safety showers are in good working order.

Usage Precautions and Procedure Before using, read this material's container label and follow all precautions. Avoid exposing this material to excessive heat or open flame. Do not smoke in use or storage areas. Practice

good housekeeping to avoid unintentionally mixing incompatibles. Wear safety glasses or goggles and appropriate protective clothing to work with this substance. After working with chemical materials, and before eating, drinking, or smoking, always wash hands and face. Remove and launder contaminated clothing before reusing.

Additional Data Oleic acid is stable at room temperature under normal handling and storage conditions. Keep its containers closed to avoid exposure to air and to prevent rancidity. Oleic acid slowly absorbs oxygen from the air and darkens upon exposure. Oleic acid decomposes at 176 to 212 °F (80 to 100 °C). It does not polymerize. Its incompatibilities include oxidizing agents. The peroxidized acid explodes on contact with aluminum. A potentially dangerous reaction may occur with perchloric acid + heat.

Preferred Storage Location and Methods Store oleic acid in tightly closed containers in a clean, dry, well-ventilated area away from sources of heat, light, or open flame. To separate incompatible chemicals, store by chemical family, not by alphabetical name. Protect all chemical containers from physical damage. Prohibit smoking in chemical storage areas. Purchase amounts equal to only a year's needs, if at all.

♦ SECTION 3 SPILL/DISPOSAL PROCEDURES

If Spilled Remove all heat and ignition sources and ventilate spill area. Clean up spilled material promptly and thoroughly. Cleanup personnel should protect against skin or eye contact and mist inhalation. For liquid spills, cover with an inert solid absorbent (vermiculite, dry sand, etc.) and scoop into appropriate containers (with a secure lid) for disposal in accordance with existing regulations. For large spills, dike the spill area with an inert absorbent material, as needed, to contain the spilled material.

Disposal of Small Quantities Check regulations before disposal is necessary. Investigate recycling, reclamation, or destruction to a less hazardous material rather than disposal of untreated waste to a landfill. Oleic acid can be converted to water-soluble soap with the addition of sodium carbonate. If this method is not practical, feasible, or in accord with existing regulations, contact your supplier or a licensed disposal contractor for specific treatment/disposal procedures.

Disposal of Larger Amounts Contact your supplier or a licensed disposal company.

Follow all applicable local, state, and Federal regulations for all waste disposal.

♦ SECTION 4 HEALTH HAZARDS

This material is not expected to be hazardous. Avoid excessive inhalation of the mist or fume that heating generates. Prolonged or repeated skin contact with oleic acid may cause irritation.

1989-90 ACGIH TLV 8-hr TWA: None established
1988 NIOSH REL 10-hr TWA: None established

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1989 OSHA PEL 8-hr TWA: None established
1985-6 Toxicity Data Rat, oral, LD₅₀: 74 g/kg;
Human, skin: 15 mg administered intermittently over 3 days
produces moderate irritation
Carcinogenicity Not listed by the NTP, IARC, or OSHA
Acute Effects Skin irritation
Chronic Effects None reported

References 1, 4-7, 10, 34, 45, 83, 84, 126; Genium's
Material Safety Data Sheets Collection, No. 606 (3/87)
Prepared by MJ Allison, BS
School Staff Review by JH Bartsch, MS
Industrial Hygiene Review by DJ Wilson, CIH
Medical Review by W Silverman, MD
Edited by JR Stuart, MS

◆ SECTION 5 FIRST AID PROCEDURES

Eye Contact Promptly flush eyes with plenty of running water for at least 15 min, including under the eyelids. Get prompt medical attention.

Skin Contact Remove heavily contaminated clothing. Wash exposed areas with soap and water.

Inhalation Remove victim from exposure to fresh air and support breathing as necessary. Get medical help.

Ingestion Get *prompt* medical attention. Never give anything by mouth to an unconscious or convulsing person.

Get proper in-school, paramedic, or community medical attention and support.

◆ SECTION 6 FIRE PROCEDURES AND DATA

Fire Hazards Oleic acid is an OSHA class IIIB combustible liquid. For major fires, or for fires involving large quantities, firefighters should wear appropriate protective clothing and respirators. A self-contained breathing apparatus (SCBA) and fully protective clothing are recommended.

Flash Point and Method 372 °F (189 °C), CC

Autoignition Temperature 685 °F (362 °C)

Flammability Limits in Air (vol. %) None reported

Hazardous Decomposition Products Products of hazardous decomposition of oleic acid can include oxides of carbon and acid vapors.

Extinguishing Media Put out an oleic acid fire with a dry chemical, carbon dioxide, or foam. Water or foam may cause frothing if directed into a container of the burning liquid.

◆ SECTION 7 PHYSICAL DATA

Boiling Point (at 1 atm) 547 °F (286°C)

Melting Point (at 1 atm) 61.4 °F (16.3 °C)

Vapor Pressure 1.0 mm Hg at 180 °C

Solubility in Water (at 25 °C) Not soluble

Molecular Weight 282.5

Specific Gravity (H₂O = 1) 0.895