

MSDS: Lipid Peroxidation Assay Kit Product No. FR 12

This product, FR 12 – Lipid Peroxidation Assay Kit, is provided and produced by Oxford Biomedical Research as an in vitro diagnostic test kit for the sole purpose of research use.

Manufacturer:

Oxford Biomedical Research
2165 Avon Industrial Dr.
Rochester Hills, MI 48309
(248) 852-8815

Section 1 - Hazardous Components:

Component:	Hazardous Content:
R1	Name: Acetonitrile CAS #: 75-05-8 MF: C ₂ H ₃ N
R2	Name: Methanesulfonic Acid CAS #: 75-75-2 MF: CH ₄ SO ₃
Diluent	Name: Ferric Chloride Hexahydrate CAS #: 10025-77-1 MF: FeCl ₃ • 6H ₂ O
	Name: Methanol CAS #: 67-56-1 MF: CH ₄ O

Section 2 - Physical and Chemical Characteristics:

Acetonitrile:

Boiling Point: 81-82°C @ 10 mm Hg
Vapor Pressure: 72.8 mm Hg @ 20°C
Vapor Density: 1.41 g/L
Solubility in Water: Soluble

Specific Gravity: 0.786 g/cm³
Melting Point: -48°C
Evaporation Rate: 5.79
Appearance: Clear Liquid

Methanesulfonic Acid:

Boiling Point: 167°C @ 10 mm Hg
Vapor Pressure: <1 mm Hg @ 20°C

Vapor Density: 3.3 g/L
Solubility in Water: Soluble

Specific Gravity: 1.482 g/cm³
Melting Point: N/A

Evaporation Rate: Not Determined
Appearance: Viscous, Clear Liquid

Ferric Chloride Hexahydrate:

Boiling Point: 280-285°C @ 760 mm Hg
Vapor Pressure: 1 mm Hg @ 194°C
Vapor Density: Not Determined
Solubility in Water: Soluble

Specific Gravity: Not Determined
Melting Point: 37°C
Evaporation Rate: Not Determined
Appearance: Yellow Powder

Methanol:

Boiling Point: 64-65°C @ 760 mm Hg
Vapor Pressure: 97.68 mm Hg @ 20°C
Vapor Density: 0.79 g/L
Solubility in Water: Soluble

Specific Gravity: 0.791 g/cm³
Melting Point: -98°C
Evaporation Rate: Not Determined
Appearance: Clear Liquid

Section 3 - Fire and Explosion Hazard Data:

Acetonitrile:

Flash Point: 6°C (42°F)
Special Fire Fighting Measures: Dry Chemical, CO₂, "Alcohol" Foam
Unusual Fire and Explosion Hazards: Vapor may travel away from source and cause flashback upon ignition.
Auto-Ignition Temperature: 524°C (975.2°F)
Explosion Limits: Upper: 4.4% Lower: 16%

Methanesulfonic Acid:

Flash Point: 170°C (338°F)
Special Fire Fighting Measures: Dry Chemical, CO₂
Unusual Fire and Explosion Hazards: Releases toxic gas upon ignition
Auto-Ignition Temperature: N/A
Explosion Limits: Upper: N/A Lower: N/A

Ferric Chloride Hexahydrate:

Flash Point: Not Determined
Special Fire Fighting Measures: Dry Chemical, CO₂, Water Spray
Unusual Fire and Explosion Hazards: Not Determined
Auto-Ignition Temperature: N/A
Explosion Limits: Upper: Not Determined Lower: Not Determined

Methanol:

Flash Point: 11°C (52°F)
Special Fire Fighting Measures: Dry Chemical, CO₂, Water Spray
Unusual Fire and Explosion Hazards: Vapor may travel away from source and cause flashback upon ignition.
Auto-Ignition Temperature: 455°C (851°F)
Explosion Limits: Upper: 6% Lower: 36%

Section 4 – Reactivity Hazard Data:

Acetonitrile:

Stability: Reactive, Corrosive, Flammable

Conditions to Avoid: Sources of Ignition, Excess Heat, Moisture

Hazardous Polymerization: Will Not Occur

Hazardous Decomposition/Byproducts: Hydrogen Cyanide, Nitrogen Oxides, Carbon Monoxide, Carbon Dioxide

Material Incompatibility: Acids, Bases, Oxidizing Agents, Reducing Agents, Alkali Metals

Methanesulfonic Acid:

Stability: Reactive, Corrosive

Conditions to Avoid: N/A

Hazardous Polymerization: Will Not Occur

Hazardous Decomposition/Byproducts: Sulfur Oxides, Carbon Monoxide, Carbon Dioxide

Material Incompatibility: Amines, Strong Oxidizing Agents, Strong Reducing Agents

Ferric Chloride Hexahydrate:

Stability: Stable

Conditions to Avoid: Moisture

Hazardous Polymerization: Will Not Occur

Hazardous Decomposition/Byproducts: Hydrogen Chlorine Gas, Iron Oxides

Material Incompatibility: Strong Oxidizing Agents

!Reacts EXPLOSIVELY with Sodium Metal and Potassium Metal!

Methanol:

Stability: Stable

Conditions to Avoid: Sources of Ignition, Excess Heat

Hazardous Polymerization: Will Not Occur

Hazardous Decomposition/Byproducts: Carbon Monoxide, Carbon Dioxide

Material Incompatibility: Acids, Acid Chloride, Acid Anhydrides, Oxidizing Agents, Reducing Agents, Alkali Metals

Section 5 - Health Hazard Data:

Acetonitrile:

Exposure Limits: OSHA PEL: 40 ppm / 70 mg/m³ ACGIH: 20 ppm skin

Toxicity Data: Toxic - Carcinogen

Health Hazards: Toxic by inhalation, ingestion, or skin absorption. Irritant. Destructive to eyes, respiratory system and skin.

Chronic Exposure: Reproductive Hazard, Carcinogen

Target Organs: Central Nervous System, Liver, Kidneys, Blood, Lungs

First Aid: Ingestion: Wash mouth out with water if conscious and seek immediate medical attention.

Inhalation: Expose to fresh air and seek immediate medical

attention. Give oxygen if breathing is difficult.
Skin: Flush area with water for 15 minutes and seek immediate medical attention. Remove contaminated clothing.
Eyes: Flush with water for 15 minutes while lifting eyelids and seek immediate medical attention.

Methanesulfonic Acid:

Exposure Limits: Not Established
Toxicity Data: Toxic
Health Hazards: Corrosive, causes burns. Harmful by ingestion, inhalation, or skin absorption. Destructive to eyes, respiratory system and skin. Inhalation may be fatal.
Chronic Exposure: Burns
Target Organs: Skin
First Aid: Ingestion: Give large amounts of water if conscious and seek immediate medical attention. Do not induce vomiting.
Inhalation: Expose to fresh air and seek immediate medical attention. Give oxygen if breathing is difficult.
Skin: Flush area with water for 15 minutes and seek immediate medical attention. Remove contaminated clothing.
Eyes: Flush with water for 15 minutes while lifting eyelids and seek immediate medical attention.

Ferric Chloride Hexahydrate:

Exposure Limits: TLV: 1 mg/m³
Toxicity Data: Toxic
Health Hazards: Toxic by inhalation, ingestion, or skin absorption. Irritant. Destructive to eyes, respiratory system and skin.
Chronic Exposure: Systemic Metal Poisoning, Liver and Kidney Damage
Target Organs: Liver, Kidneys, Eyes
First Aid: Ingestion: Induce vomiting by drinking 2-4 glasses of water and touching the back of the throat with fingers if conscious and seek immediate medical attention.
Inhalation: Expose to fresh air and seek immediate medical attention. Give oxygen if breathing is difficult.
Skin: Flush area with water for 15 minutes and seek medical attention if irritation persists.
Eyes: Flush area with water for 15 minutes while lifting eyelids and seek immediate medical attention.

Methanol:

Exposure Limits: OSHA PEL: 200 ppm / 260 mg/m³
Toxicity Data: Toxic – Cannot be made non-toxic.
Health Hazards: Toxic by ingestion, inhalation, or skin absorption. Destructive

to eyes, respiratory system and skin. Ingestion may cause blindness or death. Direct contact with eyes can cause inflammation and transient corneal opacity.

Chronic Exposure: Teratogen, Mutagen, Reproductive Hazard
Target Organs: Eyes, Kidneys, Liver, Heart, Central Nervous System
First Aid: Ingestion: Induce vomiting by drinking 2-4 glasses of water and touching the back of the throat with fingers if conscious and seek immediate medical attention.
Inhalation: Expose to fresh air and seek immediate medical attention. Give oxygen if breathing is difficult.
Skin: Flush area with water for 15 minutes and seek immediate medical attention. Remove contaminated clothing.
Eyes: Flush with water for 15 minutes while lifting eyelids and seek immediate medical attention.

Section 6 - Control Measures:

Respiratory Protection: Do not breath vapors.
Ventilation: Requires local exhaust.
Protective Gloves: Proper disposable gloves.
Eye Protection: Safety glasses or goggles.
Other Protective Equipment: Uniform, lab coat, or disposable lab wear.
Work/Hygienic Practices: Follow usual precautionary measures for handling chemicals.
Keep away from food and beverages.

Section 7 - Handling and Use Precautions:

Accidental Release Measures: Wear suitable protective equipment to prevent inhalation, ingestion, or skin and eye contact. Cover spills with sand, soda ash, or dry-lime.
Waste Disposal: Disposal shall be in accordance with local, state, or federal guidelines.
Handling and Storage: 4-8°C

Section 8 – Transportation Information

Domestic (Land, D.O.T.) and International (Water, I.M.O., Air, I.C.A.O.)
Proper Shipping Name: Chemical Kit
UN/NA: UN3316
Packing Group: II

Section 9 – Regulatory Information

Acetonitrile:
EU DIRECTIVES CLASSIFICATION
Symbol of Danger: F-Xn
Indication of Danger: Highly Flammable. Harmful.
R: 11-20/21/22-36
Risk Statements: Highly flammable. Harmful by inhalation, in contact with skin and if swallowed. Irritating to eyes.

S: 16-36/37

Safety Statements: Keep away from sources of ignition – no smoking. Wear suitable protective clothing and gloves.

US CLASSIFICATION AND LABEL TEXT

Indication of Danger: Flammable (USA) Highly Flammable (EU). Harmful.

Risk Statements: Harmful by inhalation, in contact with skin and if swallowed. Irritating to respiratory system and skin. Risk of serious damage to eyes.

Safety Statements: Keep away from sources of ignition – no smoking. In case of contact with eyes, rinse immediately with plenty of water and seek medical advice. Wear suitable protective clothing, gloves, and eye/face protection. In case of accident or if you feel unwell, seek medical advice immediately (show the label where possible).

US Statements: This material can produce a cyanide-like effect.

Target organ(s): Central nervous system. Liver.

Methanesulfonic Acid:

EU DIRECTIVES CLASSIFICATION

Symbol of Danger: C

Indication of Danger: Corrosive.

R: 34

Risk Statements: Causes burns.

S: 26-36-45

Safety Statements: In case of contact with eyes, rinse immediately with plenty of water and seek medical advice. Wear suitable protective clothing. In case of accident or if you feel unwell, seek medical advice immediately (show the label where possible).

US CLASSIFICATION AND LABEL TEXT

Indication of Danger: Toxic.

Risk Statements: Toxic if swallowed. Causes burns.

Safety Statements: In case of contact with eyes, rinse immediately with plenty of water and seek medical advice. Wear suitable protective clothing, gloves, and eye/face protection. In case of accident or if you feel unwell, seek medical advice immediately (show the label where possible).

Ferric Iron Chloride:

EU ADDITIONAL CLASSIFICATION

Symbol of Danger: Xn

Indication of Danger: Harmful.

R: 22-38-41

Risk Statements: Harmful if swallowed. Irritating to skin. Risk of serious damage to eyes.

S: 26-39

Safety Statements: In case of contact with eyes, rinse immediately with plenty of water and seek medical advice. Wear eye/face protection.

US CLASSIFICATION AND LABEL TEXT

Indication of Danger: Harmful.

Risk Statements: Harmful if swallowed. Irritating to skin. Risk of serious damage to eyes.

Safety Statements: In case of contact with eyes, rinse immediately with plenty of water and seek medical advice. Wear eye/face protection.

Methanol:

EU DIRECTIVES CLASSIFICATION

Symbol of Danger: F-T

Indication of Danger: Highly Flammable. Toxic.

R: 11-23/24/25-39/23/24/25

Risk Statements: Highly flammable. Toxic by inhalation, in contact with skin or if swallowed.

Toxic: Danger of very serious irreversible effects through inhalation, in contact with skin and if swallowed.

S: 7-16-36/37-45

Safety Statements: Keep container tightly closed. Keep away from sources of ignition – no smoking. Wear suitable protective clothing and gloves. In case of accident or if you feel unwell, seek medical advice immediately (show the label where possible).

US CLASSIFICATION AND LABEL TEXT

Indication of Danger: Flammable (USA) Highly Flammable (EU). Toxic.

Risk Statements: Toxic by inhalation, in contact with skin and if swallowed.

Toxic: Danger of very serious irreversible effects through inhalation, in contact with skin and if swallowed. Irritating to eyes and skin.

Safety Statements: Keep container tightly closed. Keep away from sources of ignition – no smoking. Take precautionary measures against static discharges. Avoid contact with skin. Wear suitable protective clothing and gloves. In case of accident or if you feel unwell, seek medical advice immediately (show the label where possible).

US Statements: Target organ(s): Eyes. Kidneys.

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