

**1. Identification**

(a) Product identifier used on the label:

Test Mix MSW

(b) Other means of identification:

Synonyms: NONE

Grade: N/A

Isco Part Numbers: 605234627, 605234311

CAS Number: N/A (Mixture)

(c) Recommended use of the chemical and restrictions on use:

Verification Test Mix for Mass Spec with ESI

(d) Name, address, and telephone number of the chemical manufacturer, importer, or other responsible party:

Teledyne Instruments, Inc. d/b/a Teledyne Isco

4700 Superior Street

Lincoln, NE 68504

Telephone: (402)464-0231

(e) Emergency phone number:

ChemTel (Contract Number MIS8758990)

United States, Canada, Puerto Rico, and the U.S. Virgin Islands:

Toll Free: (800) 255-3924

International Access:

+01-813-248-0585

**2. Hazard(s) Identification**

(a) GHS Classification of the chemical in accordance with paragraph (d) of §1910.1200:

<u>Hazard Class</u>	<u>Category</u>
Flammable Liquid and Vapor	2
Acute Toxicity, Oral	3
Acute Toxicity, Dermal	3
Acute Toxicity, Inhalation	3
Specific Target Organ Toxicity, Single Exposure	1 (Eyes)

(b) Signal word, hazard statement(s), symbol(s) and precautionary statement(s) in accordance with paragraph (f) of §1910.1200:

Hazard Symbol:



Signal Word:

DANGER

Hazard Statements:

H225

Highly flammable liquid and vapor.

H301+H311+H331

Toxic if swallowed, in contact with skin, or if inhaled.

H370

Causes damage to organs (eyes).

## 2. Hazard(s) Identification (continued)

### Precautionary Statements:

P210	Keep away from heat/sparks/open flame/hot surfaces – No smoking.
P233	Keep container tightly closed.
P264	Wash hands thoroughly after handling.
P270	Do not eat or drink when using this product.
P271	Use only outdoors or in a well-ventilated area.
P280	Wear protective gloves/protective clothing/eye protection/face protection.
P301+P310	IF SWALLOWED: Immediately call a POISON CENTER/Doctor.
P302+P352	IF ON SKIN: Wash with plenty of soap and water.
P304+P340	IF INHALED: Remove person to fresh air and keep comfortable for breathing.
P308+P310	If exposed or concerned, call a POISON CENTER/Doctor.
P361+P364	Take off immediately all contaminated clothing and wash before reuse.
P370	In case of fire: Use water or appropriate media to extinguish.
P403+P235	Store in a well-ventilated place. Keep cool.
P405	Store locked up.
P501	Dispose of contents/container in accordance with local/regional/national/international regulation.

(c) Hazards not otherwise classified: None

## 3. Composition/Information on Ingredients

Ingredient:	CAS Number:	Percent:
Methanol (LC/MS Grade): CH <sub>3</sub> OH	67-56-1	<99.8%
Formic Acid (LC/MS Grade): CH <sub>2</sub> O <sub>2</sub>	64-18-6	>0.1%
Tetramethylammonium bromide: C <sub>4</sub> H <sub>12</sub> BrN	64-20-0	>0.1%
Tetrabutylammonium bromide: C <sub>16</sub> H <sub>36</sub> BrN	1643-19-2	>0.1%
Tetrahexylammonium bromide: C <sub>24</sub> H <sub>52</sub> BrN	4328-13-6	>0.1%
Tetraoctylammonium bromide: C <sub>32</sub> H <sub>68</sub> BrN	14866-33-2	>0.1%
Tetrakis(decyl)ammonium bromide: C <sub>40</sub> H <sub>84</sub> BrN	14937-42-9	>0.1%

## 4. First-Aid Measures

General:	First Responders should take steps to protect themselves
Inhalation:	Remove to fresh air. If breathing stops: Immediately apply artificial respiration, if necessary, oxygen. Get medical attention for any breathing difficulty.
Ingestion:	Remove to fresh air. Make victim drink ethanol (e.g. 1 drinking glass of a 40% alcoholic beverage). Immediately call a physician (mention methanol ingestion). Never give anything by mouth to an unconscious person.
Skin Contact:	Wash exposed area with soap and water. Immediately call a physician.
Eye Contact:	Immediately flush eyes with plenty of water for at least 15 minutes, lifting lower and upper eyelids occasionally. Immediately call a physician.

## 5. Fire-Fighting Measures

Fire Extinguishing Media: Use water spray, alcohol-resistant foam, dry chemical or CO<sub>2</sub>.  
Special Information: Combustible. Vapors are heavier than air and may spread along floors. Forms explosive mixtures with air at ambient temperatures. Prevent fire extinguishing water/media from contaminating surface water or ground water system.

## 6. Accidental Release Measures

- (a) Personal precautions, protective equipment:  
Use PPE (see section 8). Avoid direct contact. Avoid breathing vapors, mist, gas, or dust. Ensure adequate ventilation. Keep away from heat and sources of ignition.
- (b) Environmental precautions:  
Do not let product enter drains. Risk of explosion.
- (c) Methods and materials for containment and cleaning up:  
Cover drains. Collect spills. Dispose of properly.

## 7. Handling and Storage

- (a) Precautions for safe handling:  
Avoid contact with skin and eyes. Work under hood. Do not inhale. Avoid generation of vapors/aerosols. Keep away from open flames, hot surfaces, and sources of ignition.
- (b) Conditions for safe storage:  
Keep in a tightly closed container, stored in a cool, dry, ventilated area. Keep locked up or in an area accessible only to qualified or authorized persons. Store at room temperature.

## 8. Exposure Controls/Personal Protection

- (a) Airborne Exposure Limits:  
Methanol (150-13-0):

ACGIH:	Time Weighted Average (TWA):	200ppm
	Short Term Exposure Limit (STEL):	250ppm
	Skin Designation:	Can be absorbed through skin
NIOSH/Guide:	Recommended Exposure Limit (REL):	200ppm
	Short Term Exposure Limit (STEL):	250ppm/325mg/m <sup>3</sup>
	Skin Designation:	Can be absorbed through skin
OSHA:	Permitted Exposure Limit(PEL):	200ppm/260mg/m <sup>3</sup>
Z1A	Time Weighted Average (TWA):	200ppm/260mg/m <sup>3</sup>
	Short Term Exposure Limit (STEL):	200ppm/325mg/m <sup>3</sup>
	Skin Designation:	Can be absorbed through skin
- (b) Appropriate engineering controls:  
Handle in accordance with good industrial hygiene and safety practice. Wash hands before breaks and at the end of the workday.
- (c) Individual protection measures, personal protective equipment (PPE):  
Eye/Face Protection: Safety Glasses and Face Shield, ANSI or NIOSH approved.  
Skin Protection: Handle using Nitrile gloves.  
Body Protection: Flame Retardant Clothing.  
Respiratory Protection: Work with this material in a well-ventilated area (hood if available).

## 9. Physical and Chemical Properties

(a) Appearance (physical state, color, etc.):	Liquid, clear
(b) Odor:	Characteristic
(c) Odor threshold:	10-20,000ppm
(d) pH:	No data
(e) Melting point/freezing point:	-98 °C
(f) Initial boiling point and boiling range:	148.1 °F (64.5 °C) @ 1,013 hPa
(g) Flash point:	Closed Cup: 50 °F (10 °C)
(h) Evaporation rate:	6.3 (Diethyl ether) 1.9 (n-butyl acetate)
(i) Flammability (solid, gas):	No data
(j) Upper/lower flammability or explosive limits:	44%/5.5% (V)
(k) Vapor pressure:	128 hPa @ 68 °F (20 °C)
(l) Vapor density:	1.11
(m) Relative density:	0.792 g/cm <sup>3</sup> @ 68 °F (20 °C)
(n) Solubility (ies):	@ 68 °F (20 °C) – soluble
(o) Partition coefficient: n-octanol/water:	log Pow: -0.77
(p) Auto-ignition temperature:	851 °F (455 °C)
(q) Decomposition temperature:	Distillable in an undecomposed state at normal pressure
(r) Viscosity (dynamic):	0.597 mPa @ 68 °F (20 °C)
(s) Minimum ignition energy:	0.14 mJ
(t) Conductivity:	< 1 µS/cm

## 10. Stability and Reactivity

(a) Reactivity:	Vapors may form explosive mixture with air.
(b) Chemical stability:	Stable under ordinary conditions of use and storage
(c) Possibility of hazardous reactions:	
Risk of explosion with:	
Oxidizing agents, perchloric acid, perchlorates, salts of oxyhalogenic acids, chromium(VI) oxide, halogen oxides, nitrogen oxides, nonmetallic oxides, chromosulfuric acid, chlorates, hydrides, zinc diethyl, halogens, magnesium, hydrogen peroxide, nitric acid	
Exothermic reaction with:	
Acid halides, acid anhydrides, reducing agents, acids	
Generates dangerous gasses or fumes in contact with:	
Alkaline earth metals, alkali metals	
(d) Conditions to avoid:	Warming.
(e) Incompatible materials:	Various plastics, magnesium, zinc alloys
(f) Hazardous decomposition products:	No data

## 11. Toxicological Information

- (a) Likely routes of exposure: inhalation, skin and eye contact
- (b) Symptoms related to the physical, chemical and toxicological characteristics; and

## 11. Toxicological Information (continued)

- (c) Delayed and immediate effects, chronic effects from short- and long-term exposure:  
Irritant effects, drowsiness, dizziness, narcosis, agitation, spasms, inebriation, nausea, vomiting, headache, blindness, vision impairment, coma, drying-out effects resulting in rough and chapped skin.
- (d) Toxicity:
- Acute Oral:
    - LDLO human – 143mg/kg (RTECS)
    - LD50, Rat – 5,628 mg/kg (IUCLID)
  - Acute Inhalation:
    - LC50, Rat – 85.26 mg/l; 4 h (IUCLID)
  - Acute Dermal:
    - LD50, rabbit – ca. 17,100 mg/kg
  - Sensitization: Test (Guinea Pig) – negative (IUCLID)
  - Mutagenicity
    - Genotoxicity in vivo: Mammal cell test: micronucleus – negative
    - Genotoxicity in vitro: Ames Test – negative (IUCLID)
  - Reproductive: No data available
  - Specific Target Organ Systemic Toxicity (Single Exposure): Eyes (causes damage)
- (e) NTP / IARC / OSHA Carcinogen Listing: did not show carcinogenic effects in animal experiments

## 12. Ecological information

- (a) Ecotoxicity (aquatic and terrestrial)
- Toxicity to fish: LC50 *Lepomis macrochirus* (sunfish): 15,400mg/l; 96 h (ECOTOX database)  
NOEC *Oryzias latipes* (Orange-red killifish): 7,900mg/l; 200 h
  - Toxicity to daphnia and other aquatic invertebrates: EC50 *Daphnia magna* (Water flea): >10,000 mg/l; 48 h (IUCLID)
  - Toxicity to algae: EC50 *Pseudokirchneriella subcapitata* (green algae): ca. 22,000mg/l; 96 h  
IC5 *Scenedesmus quadricauda* (green algae): 8,000mg/l; 8 d (IUCLID)
  - Toxicity to bacteria: EC5 *Pseudomonas fluorescens*: 6,600mg/l; 16 h (IUCLID)
- (b) Persistence and degradability
- Biodegradability: 99%; 30 d - Readily biodegradable (OECD Test Guideline 301D)
  - Biochemical Oxygen Demand (BOD): 600-1,120mg/g (5d) (IUCLID)
  - Chemical Oxygen Demand (COD): 1,420mg/g (IUCLID)
  - Theoretical Oxygen Demand (ThOD): 1,500mg/g
  - Ratio BOD/ThOD: BOD5 – 76% (Closed bottle test)
- (c) Bioaccumulative potential: log Pow: -0.77 (bioaccumulation not expected)
- (d) Mobility in soil: No data available
- (e) Other adverse effects: Surface tension – 22.6mN/m @ 68 °F (20 °C)  
Stability in water – 2.2 yr (reaction w/ hydroxyl radicals) (IUCLID)  
Discharge into the environment must be avoided

### 13. Disposal Considerations

Product: Whatever cannot be saved for recovery or recycling should be managed in an appropriate and approved waste disposal facility. Processing, use or contamination of this product may change the waste management options. State and local disposal regulations may differ from federal disposal regulations.

Container: Dispose of container as unused product in accordance with federal, state and local requirements.

### 14. Transport Information

DOT (US), IMDG, IATA:

UN number: 3077      Class: 3      Packing group: II

Proper shipping name: METHANOL

Further information:

Material is not packaged in quantities > RQ

### 15. Regulatory Information

#### 15.1 US Federal Regulations

TSCA: All components of this material are listed in the TSCA inventory

SARA 311/312 Hazard Class: Fire Hazard, Chronic Health Hazard

SARA Title III - Section 313 - Toxic Chemical Release Reporting: This material does not contain any SARA 313 chemicals above de minimus levels.

HAPS (Hazardous Air Pollutants): This material does not contain any hazardous air pollutants.

Clean Water Act: This material/substance is not listed as hazardous in Tables 116.4A or 117.3

DEA: Not listed.

#### 15.2 US States Regulatory Reporting

CA Proposition 65 Components:

WARNING! This product contains a chemical known to the State of California to cause birth defects or other reproductive harm.

Ingredient:      Methanol

Massachusetts, Minnesota, New Jersey, Pennsylvania Right-to-Know Hazardous Substance Lists:

Ingredient:      CAS Number:

Methanol: CH<sub>3</sub>OH      67-56-1

### 16. Other Information

NFPA 704 (National Fire Protection Association):

Health: 2, Flammability: 3, Reactivity: 0, Others: None

HMIS (Hazardous Materials Identification System, based on the Third Edition Ratings Guide):

Health: 4, Flammability: 3, Physical Hazard: 0, PPE: X

This SDS has been prepared to meet the requirements defined in 29CFR1910.1200 - Hazard Communication, and its appendices; and organized per Table D.1. Teledyne Isco provides the information contained herein in good faith but makes no representation as to its comprehensiveness or accuracy. This document is intended only as a guide to the appropriate precautionary handling of the material by a properly trained person using this product. Individuals receiving the information must exercise their independent judgment in determining its appropriateness for a particular purpose.

TELEDYNE ISCO MAKES NO REPRESENTATIONS OR WARRANTIES, EITHER EXPRESS OR IMPLIED, INCLUDING WITHOUT LIMITATION ANY WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE WITH RESPECT TO THE INFORMATION SET FORTH HEREIN OR THE PRODUCT TO WHICH THE INFORMATION REFERS. ACCORDINGLY, TELEDYNE ISCO WILL NOT BE RESPONSIBLE FOR DAMAGES RESULTING FROM USE OF OR RELIANCE UPON THIS INFORMATION.

Date of preparation: 06/06/2017

Last Revision: Initial Issue