SAFETY DATA SHEET
according to the (US) Hazard Communication Standard (29 CFR 1910.1200)

Revision Date 05/22/2019 Version 1.5

SECTION 1.Identification

Product identifier

Product number	MX0490
Product name	Methanol Histology Grade
Synonyms	MeOH
CAS-No.	67-56-1

Relevant identified uses of the substance or mixture and uses advised against

Identified uses	Reagent for analysis

Details of the supplier of the safety data sheet

Company	EMD Millipore Corporation | 400 Summit Drive | Burlington | Massachusetts 01803 | United States of America | General Inquiries: +1 800-645-5476 | Monday to Friday, 9:00 AM to 4:00 PM Eastern Time (GMT-5) MilliporeSigma is a business of Merck KGaA, Darmstadt, Germany.
Emergency telephone	800-424-9300 CHEMTREC (USA) +1-703-527-3887 CHEMTREC (International) 24 Hours/day; 7 Days/week

SECTION 2. Hazards identification

GHS Classification

Flammable liquid, Category 2, H225
Acute toxicity, Category 3, Oral, H301
Acute toxicity, Category 3, Inhalation, H331
Acute toxicity, Category 3, Dermal, H311
Specific target organ systemic toxicity - single exposure, Category 1, Eyes, H370

For the full text of the H-Statements mentioned in this Section, see Section 16.

GHS-Labeling

Hazard pictograms

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).

Precautionary Statements
P210 Keep away from heat/sparks/open flames/hot surfaces. No smoking.
P233 Keep container tightly closed.
P240 Ground/bond container and receiving equipment.
P241 Use explosion-proof electrical/ ventilating/ lighting/ equipment.
P242 Use only non-sparking tools.
P243 Take precautionary measures against static discharge.
P260 Do not breathe dust/ fume/ gas/ mist/ vapors/ spray.
P264 Wash skin thoroughly after handling.
P270 Do not eat, drink or smoke 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.
P303 + P361 + P353 IF ON SKIN (or hair): Remove/ Take off immediately all contaminated clothing. Rinse skin with water/ shower.
P304 + P340 IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing.
P322 Specific measures (see supplemental first aid instructions on this label).
P330 Rinse mouth.
P361 Remove/Take off immediately all contaminated clothing.
P363 Wash contaminated clothing before reuse.
P370 + P378 In case of fire: Use dry sand, dry chemical or alcohol-resistant foam for extinction.
P403 + P233 Store in a well-ventilated place. Keep container tightly closed.
P403 + P235 Store in a well-ventilated place. Keep cool.
P405 Store locked up.
P501 Dispose of contents/ container to an approved waste disposal plant.

Other hazards

None known.

SECTION 3. Composition/information on ingredients

Formula	CH_3OH	CH_4O (Hill)
Synonyms	MeOH	
Molar mass	32.04 g/mol	

Hazardous ingredients

Chemical name (Concentration)
CAS-No.
methanol (>= 90 % - <= 100 %)
67-56-1
Exact percentages are being withheld as a trade secret.

SECTION 4. First aid measures

Description of first-aid measures

General advice
First aider needs to protect himself.

Inhalation
After inhalation: fresh air. Immediately call in physician. If breathing stops: immediately apply artificial respiration, if necessary also oxygen.

Skin contact
In case of skin contact: Take off immediately all contaminated clothing. Rinse skin with water/ shower. Call a physician immediately.

Eye contact
After eye contact: rinse out with plenty of water. Call in ophthalmologist. Remove contact lenses.

Ingestion
After swallowing: fresh air. Make victim drink ethanol (e.g. 1 drinking glass of a 40% alcoholic beverage). Call a doctor immediately (mention methanol ingestion). Only in exceptional cases, if no medical care is available within one hour, induce vomiting (only in fully conscious persons) and make victim drink ethanol again (approx. 0.3 ml of a 40% alcoholic beverage/kg body weight/hour). Do not attempt to neutralize.

Never give anything by mouth to an unconscious person.

Most important symptoms and effects, both acute and delayed

irritant effects, Drowsiness, Dizziness, narcosis, agitation, spasms, inebriation, Nausea, Vomiting, Headache, blindness, Impairment of vision, Coma
Drying-out effect resulting in rough and chapped skin.

Indication of any immediate medical attention and special treatment needed
No information available.

SECTION 5. Fire-fighting measures

Extinguishing media

Suitable extinguishing media
Foam, Carbon dioxide (CO2), Dry powder, Water

Unsuitable extinguishing media
For this substance/mixture no limitations of extinguishing agents are given.

Special hazards arising from the substance or mixture
Combustible.
Vapors are heavier than air and may spread along floors.
Forms explosive mixtures with air at ambient temperatures.
Pay attention to flashback.
Development of hazardous combustion gases or vapors possible in the event of fire.

Advice for firefighters

Special protective equipment for fire-fighters
Stay in danger area only with self-contained breathing apparatus. Prevent skin contact by keeping a safe distance or by wearing suitable protective clothing.

Further information
Remove container from danger zone and cool with water. Suppress (knock down) gases/vapors/mists with a water spray jet. Prevent fire extinguishing water from contaminating surface water or the ground water system.

SECTION 6. Accidental release measures

Personal precautions, protective equipment and emergency procedures
Advice for non-emergency personnel: Do not breathe vapors, aerosols. Avoid substance contact. Ensure adequate ventilation. Keep away from heat and sources of ignition. Evacuate the danger area, observe emergency procedures, consult an expert.

Advice for emergency responders:

Protective equipment see section 8.

Environmental precautions
Do not let product enter drains. Risk of explosion.

Methods and materials for containment and cleaning up

Cover drains. Collect, bind, and pump off spills. Observe possible material restrictions (see sections 7 and 10). Take up carefully with liquid-absorbent material (e.g. Chemizorb®). Dispose of properly. Clean up affected area.

SECTION 7. Handling and storage

Precautions for safe handling

Work under hood. Do not inhale substance/mixture. Avoid generation of vapors/aerosols.

Observe label precautions.

Advice on protection against fire and explosion
Keep away from open flames, hot surfaces and sources of ignition. Take precautionary measures against static discharge.

Conditions for safe storage, including any incompatibilities

Keep container tightly closed in a dry and well-ventilated place. Keep away from heat and sources of ignition. Keep locked up or in an area accessible only to qualified or authorized persons.

Store at room temperature.

SECTION 8. Exposure controls/personal protection

Exposure limit(s)

Components

Basis	Value	Threshold limits	Remarks
methanol 67-56-1			
ACGIH	Time Weighted Average (TWA):	200 ppm	
	Short Term Exposure Limit (STEL):	250 ppm	
	Skin designation:		Can be absorbed through the skin.
NIOSH/GUIDE	Recommended exposure limit (REL):	200 ppm 260 mg/m³	
	Skin designation:		Can be absorbed through the skin.
	Short Term Exposure Limit (STEL):	250 ppm 325 mg/m³	
OSHA_TRANS	PEL:	200 ppm 260 mg/m³	
Z1A	Time Weighted Average (TWA):	200 ppm 260 mg/m³	
	Skin designation (Final Rule Limit applies):		Can be absorbed through the skin.
	Short Term Exposure Limit (STEL):	250 ppm 325 mg/m³	

Engineering measures
Technical measures and appropriate working operations should be given priority over the use of personal protective equipment.

Individual protection measures
Protective clothing should be selected specifically for the workplace, depending on concentration and quantity of the hazardous substances handled. The chemical resistance of the protective equipment should be inquired at the respective supplier.

Hygiene measures
Immediately change contaminated clothing. Apply skin- protective barrier cream.
Wash hands and face after working with substance.

Eye/face protection
Safety glasses

Hand protection

full contact:

Glove material:	butyl-rubber
Glove thickness:	0.7 mm
Break through time:	> 480 min

splash contact:

Glove material:	Viton (R)
Glove thickness:	0.70 mm
Break through time:	> 120 min

The protective gloves to be used must comply with the specifications of EC Directive 89/686/EEC and the related standard EN374, for example KCL 898 Butoject® (full contact), KCL 890 Vitoject® (splash contact).
The breakthrough times stated above were determined by KCL in laboratory tests acc. to EN374 with samples of the recommended glove types.
This recommendation applies only to the product stated in the safety data sheet and supplied by us as well as to the purpose specified by us. When dissolving in or mixing with other substances and under conditions deviating from those stated in EN374 please contact the supplier of CE-approved gloves (e.g. KCL GmbH, D-36124 Eichenzell, Internet: www.kcl.de).

Other protective equipment:
Flame retardant antistatic protective clothing.

Respiratory protection
required when vapors/aerosols are generated.
Recommended Filter type: Filter AX (EN 371)
The entrepeneur has to ensure that maintenance, cleaning and testing of respiratory protective devices are performed according to the instructions of the producer.
These measures have to be properly documented.

SECTION 9. Physical and chemical properties

Physical state	liquid
Color	colorless
Odor	characteristic
	pungent
Odor Threshold	10 - 20000 ppm
pH	No information available.

Melting point	-144 °F (-98 °C)
Boiling point/boiling range	148.1 °F (64.5 °C) at 1,013 hPa
Flash point	49.5 °F (9.7 °C) Method: Tested according to Directive 92/69/EEC.
Evaporation rate	6.3 Reference substance: Diethyl ether 1.9 Reference substance: n-butyl acetate
Flammability (solid, gas)	No information available.
Lower explosion limit	5.5 %(V)
Upper explosion limit	44 %(V)
Vapor pressure	128 hPa at 68 °F (20 °C)
Relative vapor density	1.11
Density	0.792 g/cm3 at 68 °F (20 °C)
Relative density	No information available.
Water solubility	completely miscible
Partition coefficient: n-octanol/water	log Pow: -0.77 (experimental) (Lit.) Bioaccumulation is not expected.
Autoignition temperature	No information available.
Decomposition temperature	Distillable in an undecomposed state at normal pressure.
Viscosity, dynamic	0.597 mPa.s at 68 °F (20 °C)

Explosive properties	Not classified as explosive.
Oxidizing properties	none
Ignition temperature	788 °F (420 °C) at1,013 hPa Method: DIN 51794
Minimum ignition energy	0.14 mJ
Conductivity	< 1 µS/cm

SECTION 10. Stability and reactivity

Reactivity
Vapors may form explosive mixture with air.

Chemical stability
The product is chemically stable under standard ambient conditions (room temperature) .

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, powdered magnesium, hydrogen peroxide, Nitric acid, sulfuric acid, permanganic acid, sodium hypochlorite

Exothermic reaction with:

acid halides, Acid anhydrides, Reducing agents, acids, Bromine, Chlorine, Chloroform, magnesium, tetrachloromethane, CYANURIC CHLORIDE

Risk of ignition or formation of inflammable gases or vapors with:

Fluorine, Oxides of phosphorus, Raney-nickel

Generates dangerous gases or fumes in contact with:

Alkaline earth metals, Alkali metals

Conditions to avoid
Warming.

Incompatible materials
various plastics, magnesium, zinc alloys

Hazardous decomposition products
no information available

SECTION 11. Toxicological information

Information on toxicological effects

Likely route of exposure
Inhalation, Eye contact, Skin contact

Target Organs
Eyes
Skin
Respiratory system
Central nervous system
gastrointestinal tract

Acute oral toxicity
LDLO human: 143 mg/kg (RTECS)

Acute toxicity estimate: 100.1 mg/kg
Expert judgment

Symptoms: Nausea, Vomiting

Acute inhalation toxicity
LC50 Rat: 131.25 mg/l; 4 h ; vapor
(ECHA)

Symptoms: Irritation symptoms in the respiratory tract.

Acute dermal toxicity
LD50 Rabbit: ca. 17,100 mg/kg
(External MSDS)

Acute toxicity estimate : 300.1 mg/kg
Expert judgment

Skin irritation
Rabbit
Result: No skin irritation
(ECHA)

Drying-out effect resulting in rough and chapped skin.

Eye irritation
Rabbit
Result: No eye irritation
(ECHA)

Possible damages: Irritations of mucous membranes

Sensitization
Sensitization test: Guinea pig
Result: negative
Method: OECD Test Guideline 406

Repeated dose toxicity
Subacute toxicity

Genotoxicity in vivo
Micronucleus test
Mouse
Result: negative
Method: OECD Test Guideline 474

Genotoxicity in vitro
Ames test
Salmonella typhimurium
Result: negative
Method: OECD Test Guideline 471

In vitro mammalian cell gene mutation test
Chinese hamster lung cells
Result: negative
Method: OECD Test Guideline 476

Specific target organ systemic toxicity - single exposure
Causes damage to organs.
Target Organs: Eyes

Specific target organ systemic toxicity - repeated exposure
The substance or mixture is not classified as specific target organ toxicant, repeated exposure.

Aspiration hazard
Regarding the available data the classification criteria are not fulfilled.

Carcinogenicity

IARC	No ingredient of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.
OSHA	No component of this product present at levels greater than or equal to 0.1% is on OSHA's list of regulated carcinogens.

NTP	No ingredient of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP.
ACGIH	No ingredient of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by ACGIH.

Further information

Systemic effects:
acidosis, drop in blood pressure, agitation, spasms, inebriation, Dizziness, Drowsiness, Headache, Impairment of vision, blindness, narcosis, Coma
Symptoms may be delayed.
Damage to:
Liver, Kidney, Cardiac, Irreversible damage of the optical nerve.
Other dangerous properties can not be excluded.
This substance should be handled with particular care.

SECTION 12. Ecological information

Ecotoxicity

Toxicity to fish
flow-through test LC50 Lepomis macrochirus (Bluegill sunfish): 15,400 mg/l; 96 h
US-EPA

Toxicity to daphnia and other aquatic invertebrates
static test EC50 Daphnia magna (Water flea): > 10,000 mg/l; 48 h
DIN 38412

Toxicity to algae
static test EC50 Pseudokirchneriella subcapitata (green algae): ca. 22,000 mg/l; 96 h
OECD Test Guideline 201

Toxicity to bacteria
static test IC50 activated sludge: > 1,000 mg/l; 3 h
Analytical monitoring: yes
OECD Test Guideline 209

Toxicity to fish (Chronic toxicity)
NOEC Oryzias latipes (Orange-red killifish): 7,900 mg/l; 200 h
(External MSDS)

Persistence and degradability

Biodegradability
99 %; 30 d
OECD Test Guideline 301D
Readily biodegradable.

Biochemical Oxygen Demand (BOD)
600 - 1,120 mg/g (5 d)
(IUCLID)

Chemical Oxygen Demand (COD)
1,420 mg/g
(IUCLID)

Theoretical oxygen demand (ThOD)
1,500 mg/g
(Lit.)

Ratio BOD/ThBOD
BOD5 76 %
Closed Bottle test

Bioaccumulative potential

Partition coefficient: n-octanol/water
log Pow: -0.77
(experimental)
(Lit.) Bioaccumulation is not expected.

Mobility in soil

No information available.

Other adverse effects

Surface tension
22.6 mN/m
at 68 °F(20 °C)

Stability in water
2.2 yr
reaction with hydroxyl radicals (IUCLID)

SECTION 13. Disposal considerations

The information presented only applies to the material as supplied. The identification based on characteristic(s) or listing may not apply if the material has been used or otherwise contaminated. It is the responsibility of the waste generator to determine the toxicity and physical properties of the material generated to determine the proper waste identification and disposal methods in compliance with applicable regulations. Disposal should be in accordance with applicable regional, national and local laws and regulations.

SECTION 14. Transport information

Land transport (DOT)

UN number	UN 1230
Proper shipping name	METHANOL
Class	3
Packing group	II
Environmentally hazardous	--

Air transport (IATA)

UN number	UN 1230
Proper shipping name	METHANOL
Class	3 (6.1)
Packing group	II
Environmentally hazardous	--
Special precautions for user	no

Sea transport (IMDG)

UN number	UN 1230
Proper shipping name	METHANOL
Class	3 (6.1)
Packing group	II
Environmentally hazardous	--
Special precautions for user	yes
EmS	F-E S-D

SECTION 15. Regulatory information

United States of America

SARA 313

The following components are subject to reporting levels established by SARA Title III, Section 313:

Components

methanol	67-56-1	*100 %*

SARA 302

No chemicals in this material are subject to the reporting requirements of SARA Title III, Section 302.

Clean Water Act

This product does not contain any Hazardous Substances listed under the U.S. CleanWater Act, Section 311, Table 116.4A.

This product does not contain any Hazardous Chemicals listed under the U.S. CleanWater Act, Section 311, Table 117.3.

DEA List I

Not listed

DEA List II

Not listed

US State Regulations

Massachusetts Right To Know

Components

methanol

Pennsylvania Right To Know

Components

methanol

New Jersey Right To Know

Components

methanol

California Prop 65 Components

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

Components

methanol

Notification status

TSCA:	All components of the product are listed in the TSCA-inventory.
DSL:	All components of this product are on the Canadian DSL

SECTION 16. Other information

Training advice

Provide adequate information, instruction and training for operators.

Labeling
Hazard pictograms

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).

Precautionary Statements
Prevention
P210 Keep away from heat/sparks/open flames/hot surfaces. No smoking.
P240 Ground/bond container and receiving equipment.
P280 Wear protective gloves/ protective clothing.
Response
P302 + P352 IF ON SKIN: Wash with plenty of soap and water.
P304 + P340 IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing.
P308 + P310 IF exposed or concerned: immediately call a POISON CENTER or doctor/ physician.
Storage
P403 + P233 Store in a well-ventilated place. Keep container tightly closed.

Full text of H-Statements referred to under sections 2 and 3.

H225	Highly flammable liquid and vapor.
H301	Toxic if swallowed.
H311	Toxic in contact with skin.
H331	Toxic if inhaled.
H370	Causes damage to organs.

Key or legend to abbreviations and acronyms used in the safety data sheet
Used abbreviations and acronyms can be looked up at www.wikipedia.org.

Revision Date05/22/2019

The branding on the header and/or footer of this document may temporarily not visually match the product purchased as we transition our branding. However, all of the

information in the document regarding the product remains unchanged and matches the product ordered. For further information please contact mlsbranding@sial.com.