



MATERIAL SAFETY DATA SHEET

according to the Global Harmonized System (and with all of the information required by the CPR)

Date of issue: 07/05/2013

Version 1.0

SECTION 1. Identification

Product identifier

Product number	188008
Product code	188008
Product name	CombiSolvent methanol-free solvent for volumetric Karl Fischer titration with one component reagents apura®

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

Identified uses	Reagent for analysis
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Details of the supplier of the safety data sheet

Company	EMD Millipore Corporation 290 Concord Road, Billerica, MA 01821, United States of America SDS Phone Support: +1-978-715-1335 General Inquiries: +1-978-751-4321 Monday to Friday, 9:00 AM to 4:00 PM Eastern Time (GMT-5)
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Emergency telephone	613-996-6666 CANUTEC (Canada) +1-703-527-3887 CHEMTREC (International) 24 Hours/day; 7 Days/week
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SECTION 2. Hazards identification

GHS Classification

Flammable liquid, Category 2, H225

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.

Precautionary Statements

P210 Keep away from heat/sparks/open flames/hot surfaces. - No smoking.
P403 + P233 Store in a well-ventilated place. Keep container tightly closed.

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Other hazards

None known.

SECTION 3. Composition/information on ingredients

Chemical nature Mixture of inorganic and organic compounds

Hazardous ingredients

Chemical Name (Concentration)

CAS-No.

ethanol ($\geq 90\%$ - $\leq 100\%$)

64-17-5

toluene ($\geq 1\%$ - $< 5\%$)

108-88-3

SECTION 4. First aid measures

Description of first-aid measures

Inhalation

After inhalation: fresh air. Consult doctor if feeling unwell.

Skin contact

After skin contact: wash off with plenty of water. Remove contaminated clothing.

Eye contact

After eye contact: rinse out with plenty of water with the eyelid held wide open. Call in ophthalmologist if necessary.

Ingestion

After swallowing: immediately make victim drink water (two glasses at most). Consult a physician.

Never give anything by mouth to an unconscious person.

Most important symptoms and effects, both acute and delayed

irritant effects, respiratory paralysis, Dizziness, narcosis, inebriation, euphoria, Nausea, Vomiting

Indication of any immediate medical attention and special treatment needed

No information available.

SECTION 5. Fire-fighting measures

Extinguishing media

Suitable extinguishing media

Carbon dioxide (CO₂), Foam, 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.

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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

Prevent fire extinguishing water from contaminating surface water or the ground water system.

Cool closed containers exposed to fire with water spray.

SECTION 6. Accidental release measures

Personal precautions, protective equipment and emergency procedures

Advice for non-emergency personnel: Avoid substance contact. Do not breathe vapors, aerosols.

Ensure adequate ventilation. Keep away from open flames, hot surfaces 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 empty into 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 with liquid-absorbent material (e.g. Chemizorb®). Dispose of properly. Clean up affected area.

SECTION 7. Handling and storage

Precautions for safe handling

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 away from heat and sources of ignition. Keep container tightly closed in a dry and well-ventilated place.

Store at +15°C to +25°C (+59°F to +77°F).

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SECTION 8. Exposure controls/personal protection

Exposure limit(s)

Ingredients

Basis	Value	Threshold limits	Remarks
<i>ethanol 64-17-5</i>			
CAD AB OEL	Time Weighted Average (TWA):	1,000 ppm 1,880 mg/m ³	
CAD BC OEL	Short Term Exposure Limit (STEL):	1,000 ppm	
CAD MB OEL	Short Term Exposure Limit (STEL):	1,000 ppm	
CAD ON OEL	Short Term Exposure Limit (STEL):	1,000 ppm	
OEL (QUE)	Time Weighted Average (TWA):	1,000 ppm 1,880 mg/m ³	
<i>toluene 108-88-3</i>			
CAD AB OEL	Time Weighted Average (TWA):	50 ppm 188 mg/m ³	
	Skin designation:		Can be absorbed through the skin.
CAD BC OEL	Time Weighted Average (TWA):	20 ppm	
CAD MB OEL	Time Weighted Average (TWA):	20 ppm	
CAD ON OEL	Time Weighted Average (TWA):	20 ppm	
OEL (QUE)	Time Weighted Average (TWA):	50 ppm 188 mg/m ³	
	Skin designation:		Can be absorbed through the skin.

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

Chemical-resistant, impervious gloves complying with an approved standard should be worn at all times when handling chemical products if a risk assessment indicates this is necessary.

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Other protective equipment:

Flame retardant antistatic protective clothing

Respiratory protection

required when vapors/aerosols are generated.

Use a properly fitted, air-purifying or air-fed respirator complying with an approved standard if a risk assessment indicates this is necessary. Respirator selection must be based on known or anticipated exposure levels, the hazards of the product and the safe working limits of the selected respirator.

SECTION 9. Physical and chemical properties

Physical state	liquid
Color	colorless
Odor	alcohol-like
Odor Threshold	No information available.
pH	5.8 - 6.3 at 68 °F (20 °C)
Melting point	No information available.
Boiling point	No information available.
Flash point	54 °F (12 °C)
Evaporation rate	No information available.
Flammability (solid, gas)	No information available.
Lower explosion limit	No information available.
Upper explosion limit	No information available.
Vapor pressure	No information available.
Relative vapor density	No information available.
Relative density	0.80 g/cm ³ at 68 °F (20 °C)
Water solubility	No information available.
Partition coefficient: n-octanol/water	No information available.
Autoignition temperature	No information available.
Decomposition temperature	No information available.

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Viscosity, dynamic No information available.

Explosive properties Not classified as explosive.

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/exothermic reaction with:

hydrogen peroxide, perchlorates, perchloric acid, Nitric acid, mercury(II) nitrate, permanganic acid, Nitriles, peroxi compounds, Strong oxidizing agents, nitrosyl compounds, Peroxides, sodium, Potassium, halogen oxides, calcium hypochlorite, nitrogen dioxide, metallic oxides, uranium hexafluoride, iodides, Chlorine, Alkali metals, Alkaline earth metals, alkali oxides, Ethylene oxide

silver, with, Nitric acid

silver compounds, with, Ammonia

potassium permanganate, with, conc. sulfuric acid

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

halogen-halogen compounds, chromium(VI) oxide, chromyl chloride, Fluorine, hydrides, Oxides of phosphorus, platinum

Nitric acid, with, potassium permanganate

Conditions to avoid

Warming.

Incompatible materials

rubber, various plastics

Hazardous decomposition products

no information available

SECTION 11. Toxicological information

Information on toxicological effects

Likely route of exposure

Eye contact, Skin contact

Acute oral toxicity

Symptoms: Nausea, Vomiting

Acute inhalation toxicity

Risk of absorption.

Symptoms: slight mucosal irritations

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Acute dermal toxicity
absorption

Skin irritation

Repeated or prolonged exposure may cause skin irritation and dermatitis, due to degreasing properties of the product.

Eye irritation

slight irritation

Carcinogenicity

Carcinogen classifications of IARC, NTP, California proposition 65 for Ethanol CAS 64-17-5 apply to beverage use only. This product is NOT intended for this use.

Specific target organ systemic toxicity - single exposure

The substance or mixture is not classified as specific target organ toxicant, single exposure.

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 ingredient of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by OSHA.
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:

euphoria

After absorption of large quantities:

Dizziness, inebriation, narcosis, respiratory paralysis

Other dangerous properties can not be excluded.

Handle in accordance with good industrial hygiene and safety practice.

Ingredients

ethanol

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Acute oral toxicity

LD50 rat: 6,200 mg/kg (IUCLID)

Acute inhalation toxicity

LC50 rat: 95.6 mg/l; 4 h (RTECS)

Skin irritation

rabbit

Result: No irritation

OECD Test Guideline 404

Sensitization

Sensitization test (Magnusson and Kligman):

Result: negative

(IUCLID)

Germ cell mutagenicity

Genotoxicity in vitro

Ames test

Salmonella typhimurium

Result: negative

(National Toxicology Program)

toluene

Acute oral toxicity

LD50 rat: 636 mg/kg (IUCLID)

Acute inhalation toxicity

LC50 rat: 28.1 mg/l; 4 h (IUCLID)

Acute dermal toxicity

LD50 rabbit: 12,124 mg/kg (IUCLID)

Skin irritation

rabbit

Result: Irritations

OECD Test Guideline 404

Eye irritation

rabbit

Result: Eye irritation

OECD Test Guideline 405

(Regulation (EC) No 1272/2008, Annex VI)

Germ cell mutagenicity

Genotoxicity in vitro

Mutagenicity (mammal cell test): micronucleus.

Result: negative

(IUCLID)

Ames test

Result: negative

(Lit.)

SECTION 12. Ecological information

Ecotoxicity

No information available.

Persistence and degradability

No information available.

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Bioaccumulative potential

No information available.

Mobility in soil

No information available.

Ingredients

ethanol

Toxicity to fish

LC50 *Leuciscus idus* (Golden orfe): 8,140 mg/l; 48 h (IUCLID)

Toxicity to daphnia and other aquatic invertebrates

EC50 *E.sulcatum*: 65 mg/l; 72 h (Lit.)

EC50 *Daphnia magna* (Water flea): 9,268 - 14,221 mg/l; 48 h (IUCLID)

Toxicity to algae

IC50 *Scenedesmus quadricauda* (Green algae): 5,000 mg/l; 7 d (Lit.)

Toxicity to bacteria

EC50 *Pseudomonas putida*: 6,500 mg/l; 16 h (IUCLID)

Biodegradability

94 %

OECD Test Guideline 301E

Readily biodegradable.

Biochemical Oxygen Demand (BOD)

930 - 1,670 mg/g (5 d)

(Lit.)

Theoretical oxygen demand (ThOD)

2,100 mg/g

(Lit.)

Ratio COD/ThBOD

90 %

(Lit.)

Substance does not meet the criteria for PBT or vPvB according to Regulation (EC) No 1907/2006, Annex XIII.

toluene

Toxicity to fish

LC50 *Oncorhynchus mykiss* (rainbow trout): 5.8 mg/l; 96 h (ECOTOX Database)

Toxicity to daphnia and other aquatic invertebrates

EC50 *Daphnia magna* (Water flea): 6 mg/l; 48 h (ECOTOX Database)

NOEC *E.sulcatum*: 456 mg/l; 72 h (IUCLID)

Toxicity to algae

IC50 *Pseudokirchneriella subcapitata* (green algae): 12 mg/l; 72 h (Lit.)

Toxicity to bacteria

EC50 *Photobacterium phosphoreum*: 20 mg/l; 30 min (Lit.)

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Theoretical oxygen demand (ThOD)

3,130 mg/g
(Lit.)

Distribution among environmental compartments

Adsorption/Soil
log K_{oc}: 2.15
(experimental)
Moderately mobile in soils

Henry constant

683 Pa·m³/mol
(Lit.) Distribution preferentially in air.

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 1993
Proper shipping name	FLAMMABLE LIQUID, N.O.S. (CONT. ETHANOL, TOLUENE)
Class	3
Packing group	II
Environmentally hazardous	--

Air transport (IATA)

UN number	UN 1993
Proper shipping name	FLAMMABLE LIQUID, N.O.S. (CONT. ETHANOL, TOLUENE)
Class	3
Packing group	II
Environmentally hazardous	--
Special precautions for user	no

Sea transport (IMDG)

UN number	UN 1993
Proper shipping name	FLAMMABLE LIQUID, N.O.S. (CONT. ETHANOL, TOLUENE)
Class	3
Packing group	II
Environmentally hazardous	--
Special precautions for user	yes

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EmS

F-E S-D

SECTION 15. Regulatory information

United States of America

Canada

WHMIS Classification

B2	Flammable Liquid
D2A	Very Toxic Material Causing Other Toxic Effects
D2B	Toxic Material Causing Other Toxic Effects

Flammable Liquid, Teratogen, Skin irritant

This product has been classified according to the hazard criteria of the CPR and the MSDS contains all of the information required by the CPR.

Notification status

TSCA: Not Listed on TSCA inventory. For Research and Development Use only. Not For Manufacturing or Commercial Purposes.

Ingredients

alkyl sulfite

protonated imidazole for Karl-Fischer solutions

DSL: This product contains one or several components that are not on the Canadian DSL nor NDSL.

Ingredients

alkyl sulfite

protonated imidazole for Karl-Fischer solutions

SECTION 16. Other information

Training advice

Provide adequate information, instruction and training for operators.

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

H225 Highly flammable liquid and vapor.

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.

Date of issue: 07/05/2013

The information contained herein is based on the present state of our knowledge. It characterizes the product with regard to appropriate safety precautions. It does not represent a warranty of any product properties and we assume no liability for any loss or injury which may result from the use of this information. Users should conduct their own investigations to determine the suitability of the information.

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