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

Revision Date 06/26/2019 Version 1.5

SECTION 1.Identification

Product identifier

Product number	D05185
Product code	4610-OP
Product name	OmniPur® Formamide Deionized
CAS-No.	75-12-7

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

Carcinogenicity, Category 2, H351
Reproductive toxicity, Category 1B, H360
Specific target organ systemic toxicity - repeated exposure, Category 2, Blood, Cardio-vascular system, H373

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

GHS-Labeling

Hazard pictograms

Signal Word
Danger

Hazard Statements
H360 May damage fertility or the unborn child.
H351 Suspected of causing cancer.
H373 May cause damage to organs (Blood, Cardio-vascular system) through prolonged or repeated exposure.

Precautionary Statements
P201 Obtain special instructions before use.
P202 Do not handle until all safety precautions have been read and understood.
P260 Do not breathe dust/ fume/ gas/ mist/ vapors/ spray.
P281 Use personal protective equipment as required.
P308 + P313 IF exposed or concerned: Get medical advice/ attention.
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	$HCONH_2$	CH_3NO (Hill)
Molar mass	45.04 g/mol	

Hazardous ingredients

Chemical name (Concentration)
CAS-No.
Formamide (>= 90 % - <= 100 %)
75-12-7
Exact percentages are being withheld as a trade secret.

SECTION 4. First aid measures

Description of first-aid measures

Inhalation
After inhalation: fresh air. Call in physician.

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

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

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
ataxia (impaired locomotor coordination)

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

SECTION 5. Fire-fighting measures

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

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 on intense heating.
Development of hazardous combustion gases or vapors possible in the event of fire.
Fire may cause evolution of:
Hydrogen cyanide (hydrocyanic acid), nitrogen oxides, Ammonia

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
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. 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.

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

Observe label precautions.

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

Conditions for safe storage, including any incompatibilities

Tightly closed. Keep in a well-ventilated place. Keep locked up or in an area accessible only to qualified or authorized persons.

Store at +2°C to +8°C (+36°F to +46°F).

SECTION 8. Exposure controls/personal protection

Exposure limit(s)

Components

Basis	Value	Threshold limits	Remarks
Formamide 75-12-7			
ACGIH	Time Weighted Average (TWA):	10 ppm	
	Skin designation:		Can be absorbed through the skin.
NIOSH/GUIDE	Recommended exposure limit (REL):	10 ppm 15 mg/m³	
	Skin designation:		Can be absorbed through the skin.
Z1A	Time Weighted Average (TWA):	20 ppm 30 mg/m³	
	Short Term Exposure Limit (STEL):	30 ppm 45 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:	natural latex
Glove thickness:	0.6 mm
Break through time:	> 480 min

splash contact:

Glove material:	Nitrile rubber
Glove thickness:	0.11 mm
Break through time:	> 240 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 706 Lapren® (full contact), KCL 741 Dermatril® L (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:
protective clothing

Respiratory protection
required when vapors/aerosols are generated.
Recommended Filter type: Filter A (acc. to DIN 3181) for vapors of organic compounds
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	ammoniacal
Odor Threshold	No information available.
pH	8 - 10 at 200 g/l 68 °F (20 °C)
Melting point	36 °F (2 °C)
Boiling point/boiling range	410 °F (210 °C) at 1,013 hPa
Flash point	347 °F (175 °C) Method: open cup

Evaporation rate	No information available.
Flammability (solid, gas)	No information available.
Lower explosion limit	2.7 %(V)
Upper explosion limit	19.0 %(V)
Vapor pressure	0.32 hPa at 122 °F (50 °C) 0.08 hPa at 68 °F (20 °C)
Relative vapor density	1.56
Density	1.13 g/cm3 at 68 °F (20 °C)
Relative density	No information available.
Water solubility	at 68 °F (20 °C) soluble
Partition coefficient: n-octanol/water	log Pow: -0.82 (25 °C) OECD Test Guideline 107 Bioaccumulation is not expected.
Autoignition temperature	No information available.
Decomposition temperature	> 356 °F (> 180 °C)
Viscosity, dynamic	3.75 mPa.s at 68 °F (20 °C)
Explosive properties	Not classified as explosive.
Oxidizing properties	none
Ignition temperature	932 °F (500 °C) Method: DIN 51794

SECTION 10. Stability and reactivity

Reactivity

Forms explosive mixtures with air on intense heating.
A range from approx. 15 Kelvin below the flash point is to be rated as critical.

Chemical stability

heat-sensitive

Possibility of hazardous reactions

Exothermic reaction with:

Oxidizing agents, bases

Risk of explosion with:

furfuryl alcohol, Oxides of phosphorus, hydrogen peroxide

iodine, with, pyridine, and, Sulfur trioxide

A risk of explosion and/or of toxic gas formation exists with the folllowing substances:

water separating agents

Possible formation of:

Hydrogen cyanide (hydrocyanic acid)

Conditions to avoid

Strong heating.

Incompatible materials

no information available

Hazardous decomposition products

in the event of fire: See section 5.

SECTION 11. Toxicological information

Information on toxicological effects

Likely route of exposure
Eye contact, Skin contact

Target Organs
reproductive system
Eyes
Skin
Respiratory system
Central nervous system
Blood

Kidney
Gastro-intestinal system
Mucous membranes
Liver

Acute oral toxicity
LD50 Rat: ca. 5,325 mg/kg
OECD Test Guideline 401

Acute inhalation toxicity
LC50 Rat: > 21 mg/l; 4 h ; vapor
OECD Test Guideline 403

Acute dermal toxicity
LD50 Rat: > 3,000 mg/kg
(ECHA)

Skin irritation
Rabbit
Result: No skin irritation
(ECHA)

Eye irritation
Rabbit
Result: slight irritation
OECD Test Guideline 405

Sensitization
In animal experiments: Guinea pig
Result: negative

(IUCLID)
Repeated dose toxicity
Subchronic toxicity

Subacute toxicity

Subchronic toxicity

Subacute toxicity

Genotoxicity in vivo
In vivo micronucleus test
Mouse
Exposure time: 90-day
Result: negative
Method: OECD Test Guideline 474

In vivo micronucleus test
Mouse
Result: positive
Method: OECD Test Guideline 474

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

Carcinogenicity
Mouse
Number of exposures: daily
Method: OECD Test Guideline 451

Rat
Number of exposures: daily
Method: OECD Test Guideline 451

CMR effects
Carcinogenicity:Suspected of causing cancer.
Teratogenicity / Reproductive toxicity: May damage fertility or the unborn child.

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
May cause damage to organs through prolonged or repeated exposure.
Target Organs: Blood, Cardio-vascular system

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
Possible effect after contact with substance:
ataxia (impaired locomotor coordination)
Absorption may result in damage of the following:
Liver, Kidney
Other dangerous properties can not be excluded.
Handle in accordance with good industrial hygiene and safety practice.

SECTION 12. Ecological information

Ecotoxicity

Toxicity to fish
LC50 Leuciscus idus (Golden orfe): 4,600 - 9,300 mg/l; 96 h
DIN 38412 part 15

Toxicity to daphnia and other aquatic invertebrates
EC50 Daphnia magna (Water flea): > 500 mg/l; 48 h (IUCLID)

Toxicity to algae
static test EC50 Desmodesmus subspicatus (green algae): > 500 mg/l; 96 h
DIN 38412

Toxicity to bacteria
EC50 Pseudomonas putida: > 10,000 mg/l; 17 h (IUCLID)

static test EC50 activated sludge: > 1,000 mg/l; 30 min
OECD Test Guideline 209

Persistence and degradability

Biodegradability
99 %; 28 d; aerobic
OECD Test Guideline 301A
Readily biodegradable.

Bioaccumulative potential

Partition coefficient: n-octanol/water
log Pow: -0.82 (25 °C)
OECD Test Guideline 107
Bioaccumulation is not expected.

Mobility in soil

Distribution among environmental compartments
log Koc: 1.101
(calculated)
(IUCLID) Mobile in soils

Additional ecological information
When discharged properly, no impairments in the function of adapted biological wastewater treatment plants are to be expected.
Discharge into the environment must be avoided.

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)

Not classified as dangerous in the meaning of transport regulations.

Air transport (IATA)

Not classified as dangerous in the meaning of transport regulations.

Sea transport (IMDG)

Not classified as dangerous in the meaning of transport regulations.

SECTION 15. Regulatory information

United States of America

SARA 313
This material does not contain any chemical components with known CAS numbers that exceed the threshold (De Minimis) reporting levels established by SARA Title III, Section 313.

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.
This product does not contain any toxic pollutants listed under the U.S. Clean Water Act Section 307

DEA List I
Not listed

DEA List II
Not listed

US State Regulations

Massachusetts Right To Know
Components
Formamide

Pennsylvania Right To Know
Components
Formamide

New Jersey Right To Know
Components
Formamide

California Prop 65 Components
This product does not contain any chemicals known to the State of California to cause cancer, birth, or any other reproductive defects.

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
H351 Suspected of causing cancer.
H360 May damage fertility or the unborn child.
H373 May cause damage to organs (Blood, Cardio-vascular system) through prolonged or repeated exposure.

Precautionary Statements
Prevention
P201 Obtain special instructions before use.
Response
P314 Get medical advice/ attention if you feel unwell.

Restricted to professional users.

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

H351	Suspected of causing cancer.
H360	May damage fertility or the unborn child.
H373	May cause damage to organs through prolonged or repeated exposure.

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 Date06/26/2019