Safety Data Sheet

according to OSHA HCS (29CFR 1910.1200) and WHMIS 2015 Regulations

Revision: February 14, 2020

1 Identification

· **Product identifier**

· **Trade name: Formaldehyde, ACS Grade, 37%**
· **Product code:** FO4700
· **CAS Number:**
50-00-0

· **Recommended use and restriction on use**
· **Recommended use:** Laboratory chemicals
· **Restrictions on use:** No relevant information available.

· **Details of the supplier of the Safety Data Sheet**
· **Manufacturer/Supplier:**
AquaPhoenix Scientific, Inc.
860 Gitts Run Road
Hanover, PA 17331 USA
Tel +1 (717)632-1291
Toll-Free: (866)632-1291
info@aquaphoenixsci.com
· **Distributor:**
AquaPhoenix Scientific
860 Gitts Run Road,
Hanover, PA 17331
(717) 632-1291

· **Emergency telephone number:**
ChemTel Inc.
(800)255-3924 (North America)
+1 (813)248-0585 (International)

2 Hazard(s) identification

· **Classification of the substance or mixture**

Flam. Liq. 4	H227	Combustible liquid.
Met. Corr.1	H290	May be corrosive to metals.
Acute Tox. 3	H301	Toxic if swallowed.
Acute Tox. 3	H311	Toxic in contact with skin.
Acute Tox. 3	H331	Toxic if inhaled.
Skin Corr. 1B	H314	Causes severe skin burns and eye damage.
Skin Sens. 1	H317	May cause an allergic skin reaction.
Muta. 2	H341	Suspected of causing genetic defects.
Carc. 1B	H350	May cause cancer.

· **Label elements**
· **GHS label elements**
The product is classified and labeled according to the Globally Harmonized System (GHS).
· **Hazard pictograms:**

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GHS05 GHS06 GHS07 GHS08

· **Signal word:** Danger

· **Hazard statements:**

H227	Combustible liquid.
H290	May be corrosive to metals.
H301+H311+H331	Toxic if swallowed, in contact with skin or if inhaled.
H314	Causes severe skin burns and eye damage.
H317	May cause an allergic skin reaction.
H341	Suspected of causing genetic defects.
H350	May cause cancer.

· **Precautionary statements:**

P201	Obtain special instructions before use.
P202	Do not handle until all safety precautions have been read and understood.
P234	Keep only in original container.
P260	Do not breathe mist/vapors/spray.
P264	Wash thoroughly after handling.
P270	Do not eat, drink or smoke when using this product.
P271	Use only outdoors or in a well-ventilated area.
P272	Contaminated work clothing must not be allowed out of the workplace.
P280	Wear protective gloves/protective clothing/eye protection/face protection.
P301+P310	If swallowed: Immediately call a poison center/doctor.
P301+P330+P331	If swallowed: Rinse mouth. Do NOT induce vomiting.
P303+P361+P353	If on skin (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower.
P304+P340	IF INHALED: Remove person to fresh air and keep comfortable for breathing.
P311	Call a poison center/doctor.
P305+P351+P338	IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P333+P313	If skin irritation or rash occurs: Get medical advice/attention.
P361+P364	Take off immediately all contaminated clothing and wash it before reuse.
P390	Absorb spillage to prevent material damage.
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.
P406	Store in corrosive resistant container with a resistant inner liner.
P501	Dispose of contents/container in accordance with local/regional/national/international regulations.

· **Other hazards** There are no other hazards not otherwise classified that have been identified.

3 Composition/information on ingredients

· **Chemical characterization: Substances**

· **CAS No. Description**

50-00-0 Formaldehyde

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4 First-aid measures

· **Description of first aid measures**
· **General information:** No special measures required.
· **After inhalation:**
Supply fresh air or oxygen; call for doctor.
Do not use mouth to mouth or mouth to nose resuscitation.
Provide oxygen treatment if affected person has difficulty breathing.
Use a respiration bag or breathing device.
In case of unconsciousness place patient stably in side position for transportation.
· **After skin contact:**
Immediately remove any clothing soiled by the product.
Immediately wash with water and soap and rinse thoroughly.
If skin irritation or rash occurs: Get medical advice/attention.
Seek immediate help for blistering or open wounds.
· **After eye contact:**
Protect unharmed eye.
Remove contact lenses if worn.
Rinse opened eye for several minutes under running water. Then consult a doctor.
· **After swallowing:**
Rinse out mouth and then drink plenty of water.
Do not induce vomiting; immediately call for medical help.
· **Most important symptoms and effects, both acute and delayed:**
Breathing difficulty
Coughing
Allergic reactions
Strong caustic effect on skin and mucous membranes.
Dizziness
Gastric or intestinal disorders when ingested.
Nausea in case of ingestion.
Vomiting.
· **Danger:**
Danger of gastric perforation.
Danger of impaired breathing.
Causes serious eye damage.
Toxic if swallowed, in contact with skin or if inhaled.
May cause cancer.
Suspected of causing genetic defects.
· **Indication of any immediate medical attention and special treatment needed:**
Medical supervision for at least 48 hours.
If necessary oxygen respiration treatment.
Later observation for pneumonia and pulmonary edema.
Contains Formaldehyde. May produce an allergic reaction.
If medical advice is needed, have product container or label at hand.

5 Fire-fighting measures

· **Extinguishing media**
· **Suitable extinguishing agents:**

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Carbon dioxide
Fire-extinguishing powder
Foam
Water fog / haze
Gaseous extinguishing agents

· **For safety reasons unsuitable extinguishing agents:** Water stream.
· **Special hazards arising from the substance or mixture**
Formation of toxic gases is possible during heating or in case of fire.
· **Advice for firefighters**
· **Protective equipment:**
Wear self-contained respiratory protective device.
Wear fully protective suit.

6 Accidental release measures

· **Personal precautions, protective equipment and emergency procedures**
Isolate area and prevent access.
Ensure adequate ventilation.
For large spills, use respiratory protective device against the effects of fumes/dust/aerosol.
Protect from heat
Wear protective equipment. Keep unprotected persons away.
· **Environmental precautions** Do not allow to enter sewers/ surface or ground water.
· **Methods and material for containment and cleaning up**
Absorb with non-combustible liquid-binding material (sand, diatomite, acid binders, universal binders).
Send for recovery or disposal in suitable receptacles.
· **Reference to other sections**
See Section 7 for information on safe handling.
See Section 8 for information on personal protection equipment.
See Section 13 for disposal information.

7 Handling and storage

· **Handling**
· **Precautions for safe handling:**
Prevent formation of aerosols.
Avoid splashes or spray in enclosed areas.
Use only in well ventilated areas.
· **Information about protection against explosions and fires:**
Keep respiratory protective device available.

· **Conditions for safe storage, including any incompatibilities**
· **Requirements to be met by storerooms and receptacles:**
Store only in the original receptacle.
Store in cool, dry conditions in well sealed receptacles.
Avoid storage near extreme heat, ignition sources or open flame.
· **Information about storage in one common storage facility:**
Store away from foodstuffs.
Store away from oxidizing agents.
Store away from metals.

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· **Further information about storage conditions:**
Keep containers tightly sealed.
Store in cool, dry conditions in well sealed receptacles.
· **Specific end use(s)** No relevant information available.

8 Exposure controls/personal protection

· **Control parameters**

· **Components with limit values that require monitoring at the workplace:**	
50-00-0 Formaldehyde	
PEL (USA)	Short-term value: 2 ppm Long-term value: 0.75 ppm see 29 CFR 1910.1048(c)
REL (USA)	Long-term value: 0.016 ppm Ceiling limit value: 0.1* ppm *15-min; See Pocket Guide App. A
TLV (USA)	Short-term value: 0.37 mg/m³, 0.3 ppm Long-term value: 0.12 mg/m³, 0.1 ppm DSEN; RSEN
EL (Canada)	Long-term value: 0.3 ppm Ceiling limit value: 1 ppm ACGIH A1; IARC 1; S(D), S(R)
EV (Canada)	Short-term value: 1.0 ppm
Ceiling limit value	1.5 ppm
LMPE (Mexico)	Ceiling limit value: 0.3 ppm A2, SEN

· **Exposure controls**
· **General protective and hygienic measures:**
The usual precautionary measures for handling chemicals should be followed.
Keep away from foodstuffs, beverages and feed.
Immediately remove all soiled and contaminated clothing.
Wash hands before breaks and at the end of work.
Store protective clothing separately.
Do not inhale gases / fumes / aerosols.
Avoid contact with the eyes and skin.
· **Engineering controls:** Provide adequate ventilation.
· **Breathing equipment:**

Combined Organic Vapor and Particulate Respirator is recommended for use during all processing activities.

· **Protection of hands:**

Protective gloves

The glove material has to be impermeable and resistant to the product/ the substance/ the preparation.

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· **Material of gloves**
Nitrile rubber, NBR
Neoprene gloves
Butyl rubber, BR
Fluorocarbon rubber (Viton)
Natural rubber, NR
Sensibilization by the components in the glove materials is possible.
· **Eye protection:**

Safety glasses

Follow relevant national guidelines concerning the use of protective eyewear.
· **Body protection:** Protective work clothing
· **Limitation and supervision of exposure into the environment**
No relevant information available.

9 Physical and chemical properties

· **Information on basic physical and chemical properties**	
· **Appearance:**	
Form:	Fluid
Color:	Colorless
· **Odor:**	Pungent
· **Odor threshold:**	Not determined.
· **pH-value:**	Not determined.
· **Melting point/Melting range:**	-92 °C (-133.6 °F)
· **Boiling point/Boiling range:**	-21 °C (-5.8 °F)
· **Flash point:**	The product is not flammable.
· **Flammability (solid, gaseous):**	Not applicable.
· **Auto-ignition temperature:**	~300 °C (~572 °F)
· **Decomposition temperature:**	Not determined.
· **Danger of explosion:**	Product does not present an explosion hazard.
· **Explosion limits**	
Lower:	7 Vol %
Upper:	73 Vol %
· **Oxidizing properties:**	Not determined.
· **Vapor pressure at 20 °C (68 °F):**	1.7 hPa (1.3 mm Hg)
· **Density at 20 °C (68 °F):**	0.81 g/cm³ (6.76 lbs/gal)
· **Relative density:**	Not determined.
· **Vapor density:**	Not determined.
· **Evaporation rate:**	Not determined.
· **Solubility in / Miscibility with**	

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Water:	Fully miscible.
· **Partition coefficient (n-octanol/water):**	Not determined.
· **Viscosity**	
Dynamic at 20 °C (68 °F):	2 mPas
Kinematic:	Not determined.
· **Other information**	No relevant information available.

10 Stability and reactivity

· **Reactivity:** No relevant information available.
· **Chemical stability:** Stable under normal temperatures and pressures.
· **Thermal decomposition / conditions to be avoided:**
No decomposition if used and stored according to specifications.
· **Possibility of hazardous reactions**
Reacts with strong acids and alkali.
Reacts violently with oxidizing agents.
Reacts with inorganic acid chlorides.
Reacts with certain metals.
· **Conditions to avoid**
Keep ignition sources away - Do not smoke.
Store away from oxidizing agents.
· **Incompatible materials** Oxidizers, strong bases, strong acids
· **Hazardous decomposition products**
Under fire conditions only:
Carbon monoxide and carbon dioxide

11 Toxicological information

· **Information on toxicological effects**
· **Acute toxicity:**
Toxic in contact with skin.
Toxic if inhaled.
Toxic if swallowed.

· **LD/LC50 values that are relevant for classification:**

ATE (Acute Toxicity Estimate)		
Oral	LD50	>200 mg/kg (rat)
Dermal	LD50	300 mg/kg
Inhalative	LC50/4h	3 mg/l

50-00-0 Formaldehyde		
Oral	LD50	>200 mg/kg (rat)

· **Primary irritant effect:**
· **On the skin:** Strong caustic effect on skin and mucous membranes.
· **On the eye:** Strong caustic effect.
· **Sensitization:** Sensitization possible through skin contact.

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· **IARC (International Agency for Research on Cancer):**

1

· **NTP (National Toxicology Program):**

K

· **OSHA-Ca (Occupational Safety & Health Administration):**

Substance is listed.

· **Probable route(s) of exposure:**
Ingestion.
Inhalation.
Eye contact.
Skin contact.
· **Acute effects (acute toxicity, irritation and corrosivity):**
Causes severe skin burns and eye damage.
Toxic if swallowed, in contact with skin or if inhaled.
· **Repeated dose toxicity:**
May cause sensitization by skin contact.
Danger of very serious irreversible effects.
· **Germ cell mutagenicity:** Suspected of causing genetic defects.
· **Carcinogenicity:** May cause cancer.
· **Reproductive toxicity:** Based on available data, the classification criteria are not met.
· **STOT-single exposure:** Based on available data, the classification criteria are not met.
· **STOT-repeated exposure:** Based on available data, the classification criteria are not met.
· **Aspiration hazard:** Based on available data, the classification criteria are not met.

12 Ecological information

· **Toxicity**
· **Aquatic toxicity** No relevant information available.
· **Persistence and degradability** No relevant information available.
· **Bioaccumulative potential:** No relevant information available.
· **Mobility in soil:** No relevant information available.
· **Additional ecological information**
· **General notes:**
Do not allow product to reach ground water, water course or sewage system, even in small quantities.
Must not reach bodies of water or drainage ditch undiluted or unneutralized.
Danger to drinking water if even extremely small quantities leak into the ground.
· **Other adverse effects** No relevant information available.

13 Disposal considerations

· **Waste treatment methods**
· **Recommendation:**
Must not be disposed of together with household garbage. Do not allow product to reach sewage system.
The user of this material has the responsibility to dispose of unused material, residues and containers in compliance with all relevant local, state and federal laws and regulations regarding treatment, storage and disposal for hazardous and nonhazardous wastes. Residual materials should be treated as hazardous.

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· **Uncleaned packagings**
· **Recommendation:** Disposal must be made according to official regulations.
· **Recommended cleansing agent:** Water, if necessary with cleansing agents.

14 Transport information

· **UN-Number**
· **DOT, ADR/RID/ADN, IMDG, IATA** UN2209

· **UN proper shipping name**
· **DOT, IMDG, IATA** FORMALDEHYDE SOLUTION
· **ADR/RID/ADN** 2209 FORMALDEHYDLÖSUNG

· **Transport hazard class(es)**

· **DOT**

· **Class** 8
· **Label** 8

· **ADR/RID/ADN**

· **Class** 8 (C9)
· **Label** 8

· **IMDG, IATA**

· **Class** 8
· **Label** 8

· **Packing group**
· **DOT, ADR/RID/ADN, IMDG, IATA** III

· **Environmental hazards** Not applicable.

· **Special precautions for user** Warning: Corrosive substances
· **Hazard identification number (Kemler code):** 80
· **EMS Number:** F-A,S-B

· **Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code** Not applicable.

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15 Regulatory information

· **Safety, health and environmental regulations/legislation specific for the substance or mixture**
· **United States (USA)**
· **SARA**

· **Section 302 (extremely hazardous substances):**
Substance is not listed.

· **Section 313 (Specific toxic chemical listings):**
Substance is listed.

· **TSCA (Toxic Substances Control Act)**

· **Clean Air Act (CAA) Section 112(r) Accidental Release Prevention (40 CFR 68.130):**
15000

· **Proposition 65 (California)**

· **Chemicals known to cause cancer:**
Substance is listed.

· **Chemicals known to cause developmental toxicity for females:**
Substance is not listed.

· **Chemicals known to cause developmental toxicity for males:**
Substance is not listed.

· **Chemicals known to cause developmental toxicity:**
Substance is not listed.

· **EPA (Environmental Protection Agency):**
B1

· **IARC (International Agency for Research on Cancer):**
1

· **Canadian Domestic Substances List (DSL):**
Substance is not listed.

· **Information about limitation of use:**
Workers are not allowed to be exposed to this hazardous material. Exceptions can be made by the authorities in certain cases.

16 Other information

This information is based on our present knowledge. However, this shall not constitute a guarantee for any specific product features and shall not establish a legally valid contractual relationship.

· **Abbreviations and acronyms:**
ADR: European Agreement concerning the International Carriage of Dangerous Goods by Road
IMDG: International Maritime Code for Dangerous Goods
DOT: US Department of Transportation
IATA: International Air Transport Association
CAS: Chemical Abstracts Service (division of the American Chemical Society)
LC50: Lethal concentration, 50 percent
LD50: Lethal dose, 50 percent

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OSHA: Occupational Safety & Health Administration
Flam. Liq. 4: Flammable liquids – Category 4
Met. Corr.1: Corrosive to metals – Category 1
Acute Tox. 3: Acute toxicity – Category 3
Skin Corr. 1B: Skin corrosion/irritation – Category 1B
Skin Sens. 1: Skin sensitisation – Category 1
Muta. 2: Germ cell mutagenicity – Category 2
Carc. 1B: Carcinogenicity – Category 1B

· **Sources**

Website, European Chemicals Agency (echa.europa.eu)
Website, US EPA Substance Registry Services (ofmpub.epa.gov/sor internet/registry/substreg/home/overview/home.do)
Website, Chemical Abstracts Registry, American Chemical Society (www.cas.org)
Patty's Industrial Hygiene, 6th ed., Rose, Vernon, ed. ISBN: 978-0-470-07488-6
Casarett and Doull's Toxicology: The Basic Science of Poisons, 8th Ed., Klaasen, Curtis D., ed., ISBN: 978-0-07-176923-5.
Safety Data Sheets, Individual Manufacturers

SDS Prepared by:
ChemTel
1305 North Florida Avenue
Tampa, Florida USA 33602-2902
Toll Free North America 1-888-255-3924 Intl. +01 813-248-0573
Website: www.chemtel.com