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SECTION 1: COMPANY AND PRODUCT INFORMATION

1.1 Product identifiers

Product name : Formaldehyde
Product code : 21730002
CAS number : 50-00-0
Synonyms : Formalin

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

Identified uses : For research and laboratory use only.

1.3 Details of the supplier of the safety data sheet

Address : Genelix International Inc, dba bioWORLD
4150 Tuller Rd. Suite 228
Dublin, OH 43017

Email : info@buffersandreagents.com

Phone : 614-792-8680, Toll free: 1-888-bio-PLUS

Fax : 614-792-8685

1.4 Emergency telephone number

Emergency phone : 1-888-bio-PLUS

SECTION 2: HAZARDS IDENTIFICATION


2.1 Classification of substance or mixture

Flammable liquids (Category 4), H227
Acute toxicity, Oral (Category 3), H301
Acute toxicity, Inhalation (Category 3), H331
Acute toxicity, Dermal (Category 3), H311
Skin corrosion (Category 1B), H314
Serious eye damage (Category 1), H318
Skin sensitisation (Category 1), H317
Germ cell mutagenicity (Category 2), H341
Carcinogenicity (Category 1A), H350
Specific target organ toxicity - single exposure (Category 1), H370
Acute aquatic toxicity (Category 3), H402

2.2 GHS Classification in accordance with 29 CFR 1910 (OSHA HCS)

Flammable liquids (Category 4), H227
Acute toxicity, Oral (Category 3), H301
Acute toxicity, Inhalation (Category 3), H331
Acute toxicity, Dermal (Category 3), H311
Skin corrosion (Category 1B), H314
Serious eye damage (Category 1), H318
Skin sensitisation (Category 1), H317
Germ cell mutagenicity (Category 2), H341
Carcinogenicity (Category 1A), H350
Specific target organ toxicity - single exposure (Category 1), H370
Acute aquatic toxicity (Category 3), H402

2.3 Label elements and precautionary statements

Pictogram	:	
Signal word	:	Danger
Hazard statement(s)	:	H227 - Combustible liquid. H301+311+331 - 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. H318 - Causes serious eye damage. H350 - May cause cancer. H370 - Causes damage to organs. H402 - Harmful to aquatic life.

Precautionary statement(s) : P201 - Obtain special instructions before use.
P202 - Do not handle until all safety precautions have been read and understood.
P210 - Keep away from heat/sparks/open flames/hot surfaces. - No smoking.
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.
P272 - Contaminated work clothing should not be allowed out of the workplace.
P273 - Avoid release to the environment.
P280 - Wear protective gloves/protective clothing/eye protection/face protection.
P301+310+330 - IF SWALLOWED: Immediately call a POISON CENTER or doctor/physician. Rinse mouth.
P301+330+331 - IF SWALLOWED: Rinse mouth. Do NOT induce vomiting.
P303+361+353 - IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower.
P304+340+310 - IF INHALED: Remove person to fresh air and keep comfortable for breathing. Immediately call a POISON CENTER or doctor/physician.
P305+351+338+310 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Immediately call a POISON CENTER or doctor/physician.
P307+311 - IF exposed: Call a POISON CENTER or doctor/physician.
P333+313 - If skin irritation or rash occurs: Get medical advice/attention.
P362 - Take off contaminated clothing and wash before reuse.
P370+378 - In case of fire: Use dry sand, dry chemical or alcohol-resistant foam to extinguish.
P403+233 - Store in a well-ventilated place. Keep container tightly closed.
P403+235 - Store in a well-ventilated place. Keep cool.
P405 - Store locked up.
P501 - Dispose of contents/container to an approved waste disposal plant.

2.4 Hazards not otherwise classified (HNOC) or not covered by GHS

No unclassified hazards known.

2.5 NFPA Rating

Health hazard : 3
Fire hazard : 2
Reactivity hazard : 0

2.6 HMIS Rating

Health hazard : 3
Chronic health hazard : *
Reactivity hazard : 0
Flammability : 2
Physical hazard : 0

3.1 Substances

Substance	CAS#	EC#	Concentration
Formaldehyde M.F: CH ₂ O M.W: 30.3 g/mol	50-00-0	200-001-8	>= 30 - < 50%

3.2 Hazardous components & classification

Flam. Liq. 4; Acute Tox. 3; Skin Corr. 1B; Eye Dam. 1; Skin Sens. 1; Muta. 2; Carc. 1A; Aquatic Acute 3; H227, H301 + H311 + H331, H314, H317, H341, H350, H402.

SECTION 4: FIRST AID MEASURES

4.1 Description of first aid measures

General advice

Consult a physician if symptoms are severe or persistent. Provide this data sheet to medical personnel. If product is spilled or leaked, evacuate area.

In case of inhalation

If inhaled, move person to fresh air and monitor breathing. If not breathing, give artificial ventilation. Consult a physician if symptoms are severe or persistent.

In case of skin contact

Immediately wash with excess soap and water. If spilled on clothing, remove all affected clothing. Consult a physician if symptoms are severe or persistent.

In case of eye contact

Flush eyes with water or eye wash solution as a precaution for 15 minutes. Consult a physician if symptoms are severe or persistent.

In case of ingestion

Only induce vomiting if recommended by medical personnel. If subject is unconscious, do not give anything by mouth. If conscious, rinse mouth with water. Consult a physician if symptoms are severe or persistent.

4.2 Most important symptoms and effects, both acute and delayed

All known important symptoms are described in Section 2 and/or Section 11. No other important symptoms to report.

4.3 Indication of any immediate medical attention and special treatment needed

No special treatment indicated. Provide treatment in accordance with exhibited systems.

SECTION 5: FIREFIGHTING MEASURES

5.1 Suitable extinguishing media

Water spray, alcohol-resistant foam, dry chemical, and carbon dioxide extinguishers are suitable.

5.2 Unsuitable extinguishing media

Water jets are unsuitable for extinguishing this product.

5.3 Special hazards arising from the substance

No special hazards are known to exist regarding combustion of this product.

5.4 Advice for firefighters

Wear protective gear, such as self-contained breathing apparatus, if necessary.

SECTION 6: ACCIDENTAL RELEASE MEASURES

6.1 Personal precautions, protective equipment and emergency procedures

Provide suitable ventilation. Use any necessary personal protective equipment. Avoid contact with skin and eyes, and avoid creation and inhalation of vapor or dust. Keep all unnecessary personnel away.

For personal protection see section 8

6.2 Environmental precautions

Prevent product from entering public sewers and waterways.

6.3 Methods and material for containment and cleaning up

Sweep up any spilled product and dispose of as hazardous waste. Keep in suitable, closed containers for disposal.

For proper disposal see section 13

SECTION 7: HANDLING AND STORAGE

7.1 Precautions for safe handling

Provide suitable ventilation. Wear any necessary personal protective equipment.

For precautions see section 2

7.2 Conditions for safe storage, including any incompatibilities

Storage conditions : Store upright, closed container in arid, ventilated environment.

Incompatible materials : Not available.

SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1 Control parameters

Formaldehyde, CAS No.: 50-00-0

C: 0.300000 ppm Basis: USA. ACGIH Threshold Limit Values (TLV). Remarks: Upper Respiratory Tract irritation, eye irritation, suspected human carcinogen, sensitizer.

TWA: 0.016000 ppm Basis: USA. NIOSH Recommended Exposure Limits. Remarks: Potential Occupational Carcinogen, See Appendix A.

C: 0.100000 ppm Basis: USA. NIOSH Recommended Exposure Limits. Remarks: Potential Occupational Carcinogen, See Appendix A, 15 minute ceiling value. Substance listed; for more information see OSHA document 1910.1048.

PEL: 0.750000 ppm Basis: OSHA Specifically Regulated Chemicals/Carcinogens. Remarks: 1910.1048; This standard applies to all occupational exposures to formaldehyde, i.e. from formaldehyde gas, its solutions, and materials that release formaldehyde. OSHA specifically regulated carcinogen.

STEL 2.000000 ppm Basis: OSHA Specifically Regulated Chemicals/Carcinogens. Remarks: 1910.1048; This standard applies to all occupational exposures to formaldehyde, i.e. from formaldehyde gas, its solutions, and materials that release formaldehyde. OSHA specifically regulated carcinogen.

TWA: 0.016000 ppm Basis: USA. NIOSH Recommended Exposure Limits. Remarks: Potential Occupational Carcinogen. Formalin is an aqueous solution that is 37% formaldehyde by weight; inhibited solutions usually contain 6-12% methyl alcohol. Also see specific listings for Formaldehyde and Methyl alcohol and/or Appendix A

C: 0.100000 ppm. Basis: USA. NIOSH Recommended Exposure Limits. Potential Occupational Carcinogen. Formalin is an aqueous solution that is 37% formaldehyde by weight; inhibited solutions usually contain 6-12% methyl alcohol. 15 minute ceiling value, see Appendix A.

C: 0.3 ppm Basis: USA. ACGIH Threshold Limit Values (TLV). Remarks: Dermal Sensitization, Respiratory sensitization, Upper Respiratory Tract irritation, Eye irritation, 2015 Adoption, Suspected human carcinogen

PEL: 0.75 ppm Basis: California permissible exposure limits for chemical contaminants (Title 8, Article 107). Remarks: see Section 5217.

STEL: 2 ppm. Basis: California permissible exposure limits for chemical contaminants (Title 8, Article 107). Remarks: see Section 5217.

8.2 Engineering controls

Follow good industrial hygiene and safety practices when handling product.

8.3 Personal protective equipment

- | | |
|------------------------|--|
| Eye/face protection | : Use only government-approved safety glasses with side-shields. |
| Skin protection | : Use gloves when handling product. Inspect gloves before use to ensure suitability for use. Remove without exposing skin to the gloves outer surface. Discard used gloves according to all pertinent laws and/or current good practices (cGXP). Wash hands with soap and water. |
| Body protection | : Wear appropriate clothing. Ensure clothing is in good condition, with no holes or tears. When selecting clothing, consider the concentration and amount of substance to be handled. |
| Respiratory protection | : Use only approved respirators and components which comply with CDC and NIOSH (US) or CEN (EU) regulations. Required only when vapors or aerosols are created. |

Control of environmental : Prevent product from entering the environment, especially through exposure public sewers or waterways.

General hygiene considerations : Comply with general industrial hygiene practice guidelines.

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

9.1 Information on basic physical and chemical properties

- a) Appearance : Clear, Colorless
- b) Physical states : Liquid
- c) Odor : Not available
- d) Odor threshold : Not available
- e) Melting point : Not available
- f) Boiling point range : Not available
- g) pH : Not available
- h) Density : Not available
- i) Flash point : 64°C - (closed cup)
- j) Evaporation rate : Not available
- k) Flammability : Not available
- l) Upper/lower flammability or explosive limits: : Upper explosion limit: 73 %(V)
Lower explosion limit: 7 %(V)
- m) Vapor pressure : 69 hPa (52 mmHg) @ 37°C
- n) Vapor density : 1.04 (Air = 1.0)
- o) Relative density : 1.016 g/cm³ @ 20°C
- p) Water solubility : Not available
- q) Partition coefficient:n-octanol/water : Not available
- r) Autoignition temperature : Not available
- s) Decomposition temperature : Not available
- t) Kinematic viscosity : Not available
- u) Explosive properties : Not available
- v) Oxidizing properties : Not available
- w) Solubility in other solvents : Not available
- x) Surface tension : Not available

SECTION 10: STABILITY AND REACTIVITY

10.1 Reactivity

No special reactivity is known.

10.2 Chemical stability

Product is stable when stored and used as recommended.

10.3 Stability note(s)

Avoid heat, flames, and sparks around the product.

10.4 Polymerization

No known polymerization.

10.5 Possibility of hazardous reactions

No hazardous reactions are known.

10.6 Incompatible materials

Not available

10.7 Hazardous decomposition products

Carbon oxides can form if fire occurs.

SECTION 11: TOXICOLOGICAL INFORMATION

11.1 Acute toxicity

LD50 Oral : No toxicity data available.

LD50 Dermal : No toxicity data available.

LC50 Inhalation : No toxicity data available.

11.2 Skin corrosion/irritation

Skin - Rabbit

Result: Corrosive after 3 minutes to 1 hour of exposure - 20 h

11.3 Serious eye damage/eye irritation

Eyes - Rabbit

Result: Corrosive - 7 d

11.4 Respiratory or skin sensitization

Maximisation Test (GPMT) - Guinea pig

Result: Causes sensitisation.

May cause allergic skin reaction.

11.5 Germ cell mutagenicity

No mutagenicity data available.

11.6 Carcinogenicity

IARC : 1 - Group 1: Carcinogenic to humans (Formaldehyde)

ACGIH : A2 - Suspected human carcinogen.

NTP : Known to be human carcinogen (Formaldehyde)

OSHA : OSHA specifically regulated carcinogen (Formaldehyde)

11.7 Reproductive toxicity

No reproductive toxicity data available.

11.8 Specific target organ toxicity – single exposure

No specific organ toxicity data available.

11.9 Specific target organ toxicity – repeated exposure

No specific organ toxicity data available.

11.10 Aspiration hazard

No aspiration hazard data available.

11.11 Additional Information

RTECS: LP8925000

Liver - Irregularities - Based on Human Evidence (Formaldehyde)

SECTION 12: ECOLOGICAL INFORMATION

12.1 Toxicity

No ecological toxicity data available.

12.2 Aquatic toxicity

No aquatic toxicity data available.

12.3 Persistence and degradability

No persistence/degradability data available.

12.4 Bioaccumulative potential

No bioaccumulation data available.

12.5 Mobility in soil

No soil mobility data available.

12.6 Results of PBT and vPvB assessment

PBT/vPvB assessment not available as chemical safety assessment is not required/was not conducted.

12.7 Other adverse effect

Harmful to aquatic life. An environmental hazard cannot be excluded in the event of unprofessional handling or disposal. Harmful to aquatic life.

SECTION 13: DISPOSAL CONSIDERATIONS

13.1 Product

Chemical waste generators must determine whether a discarded chemical is classified as a hazardous waste. Chemical waste generators must also consult and adhere to local, regional, and national hazardous waste regulations to ensure complete and accurate classification.

13.2 Packaging

Packaging should be disposed of in the same manner as unused product.

13.3 Recommendation

Disposal must be made according to official regulations.

SECTION 14: TRANSPORTATION INFORMATION

14.1 DOT (US)

UN# 2209

Class: 8

Packing Group: III

Proper shipping name: Formaldehyde solutions

Reportable Quantity: 260 lbs

Poison Inhalation Hazard: No

14.2 IMDG

UN# 2209
Class: 8
Packing Group: III
EMS-No.: F-A,S-B
Proper shipping name: Formaldehyde solutions

14.3 IATA

UN# 2209
Class: 8
Packing Group: III
Proper shipping name: Formaldehyde solutions

SECTION 15: REGULATORY INFORMATION

15.1 SARA

SARA 302: This product and components are subject to the reporting requirements of SARA Title III, Section 302.
Formaldehyde CAS No.: 50-00-0
SARA 313: This product contains any components with known CAS numbers that exceed the threshold reporting levels established by SARA Title III, Section 313.
Formaldehyde CAS No.: 50-00-0
SARA 311/312: Fire Hazard, Acute Health Hazard, Chronic Health Hazard

15.2 Clean water act (CWA)

This product contains the following substances which are regulated pollutants pursuant to the Clean Water Act (40 CFR 122.21 and 40 CFR 122.42).

15.3 Right to know components

Massachusetts	:	Formaldehyde CAS No.: 50-00-0
Pennsylvania	:	Formaldehyde CAS No.: 50-00-0
New Jersey	:	Formaldehyde CAS No.: 50-00-0
California proposition 65 components	:	WARNING! This product contains a chemical known to the State of California to cause cancer. Formaldehyde CAS No.: 50-00-0

SECTION 16: OTHER INFORMATION

16.1 Disclaimer

This product is offered by Plantmedia for research, laboratory or further manufacturing use. Not for human use or consumption. The information above is believed to be accurate and represents the best information currently available to us. However, we make no warranty of merchant-ability or any other warranty, express or implied, with respect to such information, and we assume no liability resulting from its use. Users should make their own investigations to determine the suitability of the information for their particular purposes. In no event shall buffersandreagents.com be liable for any claims, losses, or damages of any third party or for lost profits or any special, indirect, incidental, consequential or exemplary damages, howsoever arising, even if buffersandreagents.com has been advised of the possibility of such damages.

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16.2 Preparation Information

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