## SECTION 1: PRODUCT AND COMPANY IDENTIFICATION

**PRODUCT NAME:** 10% Neutral Buffered Formalin Solution
**SYNONYMS:** 10% NBF
**PRODUCT CODES:** ES432075B, PFNBF-07, PFNBF-20, PFNBF-40, PFNBF-60, PFNBF-60W, PFNBF-90, PFNBF-90Y, PFNBF-120, B-PFNBF-20, B-PFNBF-40, B-PFNBF-60, B-PFNBF-60W, B-PFNBF-90, B-PFNBF120, PFNBF-180, PFNBF-240, PFNBF-360, PFNBF-480, PFNBF-1000, PFNBF-3840, PFNBF-0.6G, PFNBF-1.25G, NBF-4-G, CUNBF-2.5G, P-CUNBF-2.5G, CUNBF-5-G, NBF30G, NBF55G

**MANUFACTURER:** Azer Scientific, Inc.
**ADDRESS:** 701 Hemlock Rd, Morgantown, PA 19543

**CHEMTREC PHONE:** 800-424-9300
**SUPPORT:** 610-524-5810
**FAX:** 610-901-3046

**PRODUCT USE:** Tissue Fixative
**PREPARED BY:** CB

**SECTION 1 NOTES:**

## SECTION 2: HAZARDS IDENTIFICATION

**GHS CLASSIFICATION:** Skin Corrosion/Irritation Category 2; Serious eye damage/irritation Category 1; Skin Sensitization Category 1; Specific Target Organ Toxicity – single exposure Category 1; Carcinogenicity Category 1



**Signal Word:** Danger!

| **Hazard Phrases** | |
|---|---|
| H350 | May cause cancer. |
| H315 | Causes skin irritation. |
| H318 | Causes serious eye damage. |
| H370 | Causes damage to organs. |
| H317 | May cause an allergic skin reaction. |

| **Precautionary Phrases** | |
|---|---|
| P202 | Do not handle until all safety precautions have been read and understood. |
| P260 | Do not breathe dust/ fume/ gas/ mist/ vapors/ spray. |
| P280 | Wear protective gloves/ protective clothing/ eye protection/ face protection. |
| P264 | Wash hands thoroughly after handling. |
| P302+P352 | IF ON SKIN: Wash with plenty of soap and water. |
| 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. |
| P307+P311 | IF exposed: Call a POISON CENTER or doctor/ physician. |

**SECTION 2 NOTES:**

## SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS

| INGREDIENT: | CAS NO. | % WT |
|---|---|---|
| Formaldehyde | 50-00-0 | <4 |
| Methyl Alcohol | 67-56-1 | <1 |
| Monosodium Phosphate | 7558-80-7 | <1 |
| Disodium Phosphate | 7558-79-4 | <1 |

**SECTION 3 NOTES:**

## SECTION 4: FIRST AID MEASURES

**EYES:** Check for and remove any contact lenses. Immediately flush eyes with plenty of water for at least 15 minutes, occasionally lifting the upper and lower eyelids. Get medical attention immediately.

**SKIN:** In case of contact, flush skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes. Wash clothing before reuse. If skin irritation occurs: Get medical attention/advice.

**INGESTION:** Call medical doctor or poison control center immediately. Wash out mouth with water. Do not induce vomiting unless directed to do so by medical personnel. Never give anything by mouth to an unconscious person.

**INHALATION:** Move exposed person to fresh air. If not breathing, if breathing is irregular or if respiratory arrest occurs, provide artificial respiration or oxygen by trained personnel. Loosen tight clothing such as a collar, tie, belt or waistband. Get medical attention if you feel unwell.

**SECTION 4 NOTES:**

## SECTION 5: FIRE-FIGHTING MEASURES

**FLAMMABILITY OF THE PRODUCT:**
**FLASH POINT:** >200°F
**AUTOIGNITION TEMPERATURE:** 795°F

**NFPA HAZARD CLASSIFICATION**
**HEALTH:2 FLAMMABILITY: 1 REACTIVITY: 0**
**OTHER:**

**HMIS HAZARD CLASSIFICATION**
**HEALTH:2 FLAMMABILITY: 1 REACTIVITY: 0**
**PROTECTION:**

**EXTINGUISHING MEDIA:** Small fire – use DRY chemical powder. Large fire – use alcohol resistant foam, water spray or fog.
**NOT SUITABLE:** Do not use water jet.
**SPECIAL FIRE FIGHTING PROCEDURES:** None known.
**HAZARDOUS DECOMPOSITION PRODUCTS:** Strong vapors and irritants, carbon monoxide, carbon dioxide
**SECTION 5 NOTES:**

## SECTION 6: ACCIDENTAL RELEASE MEASURES

**ACCIDENTAL RELEASE MEASURES:**

Small spill and leak: Dilute with water and mop, or absorb with an inert dry material and place in appropriate waste disposal container.
Large spill and leak: Keep away from heat and ignition sources. Stop leak if without risk. Absorb with DRY earth, sand, or other non-combustible material. Avoid skin and eye contact. Prevent entry into sewers, basements or confined areas; dike if needed. Ensure airborne concentrations of formaldehyde do not exceed published exposure limits. Additional protective equipment such

as full-face respirator, full body suit and boots may be required. If airborne concentrations of formaldehyde exceed 7.5 ppm, only use SCBA or supplied air respirators.

**SECTION 6 NOTES:**

## SECTION 7: HANDLING AND STORAGE

HANDLING: Avoid contact with eyes and skin. Do not breathe vapor or mist. Avoid prolonged or repeated contact with skin. If potential for splashing exists, protect skin by using sleeve protectors, aprons and face-shield. Immediately remove contaminated clothing. Wash thoroughly after handling.
STORAGE: Keep containers closed and out of reach of children. Ground all equipment containing material. Store at room temperature.

**SECTION 7 NOTES:**

## SECTION 8: EXPOSURE CONTROL/PERSONAL PROTECTION

**ENGINEERING CONTROLS:** General mechanical ventilation or laboratory fume hood. Ensure that eyewash stations and quick drench showers are close to the workstation.

**PERSONAL PROTECTIVE MEASURES:** Wear gloves, lab coat, eye protection and impervious footwear. Approved/certified respirator if airborne concentrations exceed exposure limits

**ENVIRONMENTAL EXPOSURE CONTROLS:** Emissions from ventilation or work process equipment should be checked to ensure they comply with the requirements of environmental protection legislation. In some cases, fume scrubbers, filters or engineering modifications to the process equipment will be necessary to reduce emissions to acceptable levels.

**WORK HYGIENIC PRACTICES:** Wash hands, forearms and face thoroughly after handling chemical products, before eating, smoking and using the lavatory and at the end of the working period. Appropriate techniques should be used to remove potentially contaminated clothing. Wash contaminated clothing before reusing.

**EXPOSURE GUIDELINES:**

**OSHA Permissible Exposure Limits (PELs):**

| Reagent | CAS# | OSHA PEL TWA |
|---|---|---|
| Formaldehyde | 50-00-0 | 0.75 ppm (Ceiling) |
| Methyl Alcohol | 67-56-1 | 200ppm (260 mg/m$^3$) |

**ACGIH Threshold Limit values (TLVs):**

| Reagent | CAS# | ACGIH PEL TWA | ACGIH STEL |
|---|---|---|---|
| Formaldehyde | 50-00-0 | 0.3 ppm (Ceiling) | 2 ppm |
| Methyl Alcohol | 67-56-1 | 200ppm (260 mg/m$^3$) | 250ppm (328 mg/m$^3$) |

**SECTION 8 NOTES:**

## SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

**APPEARANCE:** Clear
**ODOR:** Pungent
**PHYSICAL STATE:** liquid
**pH AS SUPPLIED:** 6.9-7.1
**BOILING POINT:** 100°C (212°F)
**MELTING POINT/FREEZING POINT:** -92°C (-133°F)
**VAPOR PRESSURE (mmHg):** 2.7mmHg @ 20°C
**VAPOR DENSITY (AIR = 1):** 1.04

**EVAPORATION RATE:** >1
**SOLUBILITY IN WATER:** Soluble in water
**MOLECULAR WEIGHT:** Mixture
**VISCOSITY:** Not established

**SECTION 9 NOTES:**

## SECTION 10: STABILITY AND REACTIVITY

**STABILITY:** Product is stable under normal conditions of use.
**CONDITIONS TO AVOID (STABILITY):** Avoid heat, sparks, flames, and all other sources of ignition.
**INCOMPATIBILITY (MATERIAL TO AVOID):** Reactive with oxidizing materials, acids and alkalis.
**HAZARDOUS DECOMPOSITION OR BY-PRODUCTS:** Thermal breakdown of this product during fire or very high heat conditions may evolve the following decomposition products: oxides of carbon.
**HAZARDOUS POLYMERIZATION:** No hazardous polymerization
**CONDITIONS TO AVOID:** Heat, open flame

**SECTION 10 NOTES:**

## SECTION 11: TOXICOLOGICAL INFORMATION

**ACUTE TOXICITY:**

**Oral:** Methyl Alcohol: LD50 (oral, mouse) = 0.4 g/kg, LD50 (oral, rat) = 6.2-13 g/kg LD50 (oral, rabbit) = 14.4 g/kg
Formaldehyde: LD50 (Oral, mouse) = 42 mg/kg
**Inhalation:** Formaldehyde: LC50 (Inhalation, mouse) = 454 mg/m3/4H
**Dermal LD50:** Methyl Alcohol: Rabbit LD50 20 ml/kg
**Skin corrosion/irritation:** Formaldehyde: Draize test, rabbit, skin: 2 mg/24H Severe
**Eyes:** Formaldehyde: Draize test, rabbit, eye: 750 ug/24H Severe
**Respiratory or skin sensitization:** No data available
**Germ cell mutagenicity:** No data available
**Carcinogenicity:** (NTP, IARC, OSHA):
Formaldehyde: NIOSH: Classified proven ACGIH: Classified A2(suspected for human)
NTP: Classified 2(Reasonably anticipated) IARC: Classified A2(Probable for human)
Methanol: Not classified as a human carcinogen.
**Aspiration hazard:** no data available

**POTENTIAL HEALTH EFFECTS**

EYES: Hazardous in case of eye contact (irritant). May cause burns. May cause chemical conjunctivitis or corneal damage.
SKIN: Hazardous in case of skin contact (irritant, corrosive, sensitizer). Skin contact may produce burns. May cause skin sensitization which becomes evident upon re-exposure. Skin inflammation is characterized by itching, scaling, reddening or occasionally blistering.
INGESTION: May be fatal if swallowed. May cause burns to mouth, throat and stomach.
INHALATION: Hazardous in case of inhalation (lung irritant and sensitizer). Inhalation of spray mist may produce severe irritation of respiratory tract characterized by coughing, choking or shortness of breath. May cause asthmatic attacks due to allergic sensitization.

CHRONIC HEALTH HAZARDS: Effects may be delayed. Formaldehyde has been associated with nasopharyngeal cancers. Repeated exposure may cause skin discoloration and nail decay. Inhalation may worsen conditions such as emphysema or bronchitis. Repeated skin exposure may cause defatting of the skin.

**MEDICAL CONDITIONS GENERALLY AGGRAVATED BY EXPOSURE:**
Dermatitis, emphysema, bronchitis and conjunctivitis.

**SIGNS AND SYMPTOMS OF EXPOSURE**: Irritation eyes, skin, nose, mucous membrane; headache, dermatitis
**ROUTES OF ENTRY:** Skin/eye contact, inhalation

**TARGET ORGANS:** Respiratory system

**SECTION 11 NOTES:**
DANGER! CONTAINS FORMALDEHYDE – POTENTIAL CANCER HAZARD. REPEATED OR PROLONGED EXPOSURE INCREASES RISK. HIGHLY TOXIC BY INHALATION AND IF SWALLOWED. IRRITATING TO EYES, RESPIRATORY SYSTEM AND SKIN. MAY CAUSE SENSITIZATION BY INHALATION OR SKIN CONTACT. RISK OF ACUTE DAMAGE TO EYES. KEEP CONTAINER CLOSED, USE WITH ADEQUATE VENTILLATION. TARGET ORGANS: SKIN, EYES, RESPIRATORY TRACT. FOR LABORATORY USE ONLY.

## SECTION 12: ECOLOGICAL INFORMATION

**ECOLOGICAL TOXICITY:**
Formaldehyde: LC50 Pimephales promelas (Fathead minnow) 24.1 mg/L/96 hr
Methanol: LC50 fathead minnows 29,400 mg/L/96hr; EC50 daphnia magna >10,000 mg/L/24 hr
**PERSISTANCE AND DEGRADABILITY:** Biodegradation is expected
**BIOACCUMULATIVE POTENTIAL:** Bioaccumulation is unlikely.
**MOBILITY IN SOIL:** No data available
**PBT and vPvB ASSESSMENT:** Not required.

**SECTION 12 NOTES:**

## SECTION 13: DISPOSAL CONSIDERATIONS

**WASTE DISPOSAL METHOD:** Unused product: dispose as a regulated hazardous waste. Spent product or spill clean up-follow all provincial, local, state, and federal regulations.

**RCRA HAZARD CLASS:** U122

**SECTION 13 NOTES:**

## SECTION 14: TRANSPORT INFORMATION

**U.S. DEPARTMENT OF TRANSPORTATION:** Not Regulated
**TDG:** Not Regulated
**IATA:** Not Regulated
**IMDG/IMP:** Not Regulated

## SECTION 15: REGULATORY INFORMATION

**United States**
**HCS Classification:** Toxic material, Irritating material, Target organ effects
**U.S. Federal regulations:**
**TSCA 8(a) IUR:** Listed on inventory.
**United States inventory (TSCA 8b):** Listed on inventory.
**SARA 302/304/311/312 extremely hazardous substances:** No products were found.
**SARA 302/304 emergency planning and notification:** No products were found.
**SARA 302/304/311/312 hazardous chemicals:** No products were found.
**SARA 311/312 MSDS distribution - chemical inventory - hazard identification:**
Acute Health Hazard; Chronic Health Hazard
**SARA 313 Form R – Reporting:** The following components are subject to reporting levels established by SARA Title III, Section 313: METHANOL (CAS# 67-56-1) FORMALDEHYDE (CAS# 50-00-0)

**DEA List I & II Chemicals**
**(Precursor Chemicals):** Not Listed
**CERCLA:** Methanol CAS-No. 67-56-1. RQ: 5,000 lbs; The RQ for the product (based on the RQ for Formaldehyde (6% maximum)) of 100 lbs, is 1,666 lbs. Report spills required under federal, state, and local regulations.

**RTK STATES:** Methyl Alcohol CAS 67-56-1 CT, MA, NJ, PA, RI Formaldehyde CAS 50-00-0 CA, NJ, PA, MN, MA
**California Prop. 65**
WARNING! This product contains a chemical known to the State of California to cause birth defects or other reproductive harm.
METHANOL CAS-No. 67-56-1 FORMALDEHYDE CAS-No. 50-00-0

**CANADA**

**WHMIS (Canada):** Class D1: Materials causing immediate and serious toxic effects.
Class D2-A: Very toxic material
Class E: Corrosive material

**Canadian lists:** **CEPA Toxic substances:** The following components are listed: Formaldehyde
**Canadian ARET:** None of the components are listed.
**Canadian NPRI:** The following components are listed: Formaldehyde, Methanol
Volatile organic compounds

**CEPA DSL / CEPA NDSL:** All components are listed or exempted.
This product has been classified in accordance with the hazard criteria of the Controlled Products Regulations and the MSDS contains all the information required by the Controlled Products Regulations.

**International regulations**

**International lists:** **Australia inventory (AICS):** All components are listed or exempted.
**China inventory (IECSC):** All components are listed or exempted.
**Japan inventory:** All components are listed or exempted.
**Korea inventory:** All components are listed or exempted.
**New Zealand Inventory of Chemicals (NZIoC):** All components are listed or exempted.
**Philippines inventory (PICCS):** All components are listed or exempted.

## SECTION 16: OTHER INFORMATION

National Fire Protection Association (NFPA)




**DISCLAIMER:** This Safety Data Sheet has been prepared in accordance with the Globally Harmonized System for the Classification and Labelling of Chemicals (GHS). To the best of our knowledge, the information contained herein is accurate. However, neither the above named supplier nor any of its subsidiaries makes any warranty of merchantability or any other warranty, expressed or implied, which respect to such information, and we assume no liability resulting from its use. In no event shall Azer Scientific 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 resulting from use of or reliance upon this information.

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