bionano

SAFETY DATA SHEET

This document is in compliance with requirements for Safety Data Sheets implemented under U.S. Federal Occupational Safety and Health Administration Hazard Communication Standard (29 CFR 1910.1200, as updated in 2024 and equivalent State Standards), guidelines from the United Nations Globally Harmonized System of Classification of Chemicals (GHS), the Canadian Workplace Hazardous Materials Information System (WHMIS) and Hazardous Products Regulations (HPR), and the European Union regulation on the Classification, Labelling and Packaging of Substances and Mixtures (EC No. 1272/2008, EU 2020/878; EU 2024/2865), and Japan's Industrial Safety and Health Act (, Article 57-2. See section 15 for more information on national regulations.

SECTION 1: IDENTIFICATION

1.1 PRODUCT IDENTIFICATION

- **PRODUCT NAME: DLS-G2 Biological Control A**
- **PRODUCT CODE: 20400**

1.2 PRODUCT USE AND RESTRICTIONS

- **IDENTIFIED USE:** Control sample for DNA sequencing process.
- **USES ADVISED AGAINST:** Procedures not related to the intended use of this product.
- **IDENTIFIED USERS:** For sale to, use, and storage by personnel trained in handling product safely.

1.3 MANUFACTURER INFORMATION

- **MANUFACTURER/SUPPLIER:** **Bionano Genomics**
- **ADDRESS:** 9540 Towne Center Dr. San Diego, CA 92121
- **BUSINESS PHONE:** 858 -888-7600 (8:00 am to 5:00 pm, Pacific Standard Time)
- **EMERGENCY PHONE:** 858-888-7600 (8:00 am to 5:00 pm, Pacific Standard Time)

SECTION 2: HAZARD IDENTIFICATION

2.1 HAZARD CLASSIFICATION (US OSHA, CANADIAN WHMIS, and EU CLP)

- Not classified as hazardous under pertinent national standards.

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2.2 LABEL ELEMENTS (US OSHA, CANADIAN WHMIS, and EU CLP)

- **Hazard Pictograms:** Not applicable.
- **Signal Word:** Not applicable.
- **Hazard Statements:** Not applicable.
- **Precautionary Statements:** Not applicable.

2.3 OTHER PERTINENT DATA ON HEALTH, PHYSICAL, AND ENVIRONMENTAL HAZARDS

- **Contains no material classified as follows:** Endocrine disrupting properties: In relation to human health and in relation to the environment (ED). Persistent, Bioaccumulative and Toxic (PBT); Very persistent and very bioaccumulative (vPvB); Persistent, mobile and toxic (PMT)' Very persistent and very mobile (vPvM).

SECTION 3: COMPOSITION / INFORMATION ON INGREDIENTS

3.1 IDENTIFICATION OF HAZARDOUS SUBSTANCES IN PRODUCT

NAME	CAS NUMBER	GHS HAZARD CLASSIFICATION FOR COMPONENT	% (w/w)[1]
Dimethyl Sulfoxide	67-68-5	Flammable liquids (Category 4)	4%
Proteinase K	39450-01-6	Skin corrosion (Category 2); Eye damage (Category 2); Respiratory sensitization (Category 1); Specific target organ toxicity (Category 3)	0.05%
The components of this product do not contribute health or physical hazards at the concentrations present.			Balance

SECTION 4: FIRST AID MEASURES

4.1 DESCRIPTION OF FIRST AID MEASURES

[1] *The exact composition is a trade secret. All required hazard and safety information has been provided for the products, per the regulations.*

- **BASIC FIRST AID BY EXPOSURE ROUTE:**

AREA EXPOSED	TREATMENT
Eye Contact:	Flush with copious amounts of water for 15 minutes. "Roll" eyes during flush. Seek medical attention should any irritation develop.
Skin Contact:	Flush area with warm, running water for several minutes. Seek medical attention should any irritation develop.
Inhalation:	Obtain fresh air. Seek medical attention if irritation develops after exposure ends.
Ingestion:	If conscious only: Rinse mouth with water. Do not induce vomiting. Contact a Poison Control Center or physician for instructions.

4.2 MOST IMPORTANT SYMPTOMS AND EFFECTS, BOTH ACUTE AND DELAYED

- **ACUTE HEALTH EFFECTS:**

AREA EXPOSED	EFFECTS
Eye Contact:	May cause eye irritation upon prolonged exposure.
Skin Contact:	May cause skin irritation upon prolonged exposure.
Inhalation:	Not anticipated to be a potential route of exposure.
Ingestion:	Not anticipated to be a potential route of exposure.

- **CHRONIC HEALTH EFFECTS:** None known.
- **TARGET ORGANS:** None known.

4.3 INDICATION OF IMMEDIATE MEDICAL ATTENTION AND SPECIAL TREATMENT NEEDED

- **GENERAL INFORMATION: For all exposures:** In case of accident, or if you feel unwell, seek medical advice immediately. Take this document and a copy of the label to the healthcare professional.
- **RECOMMENDATIONS TO PHYSICIANS:** Treat symptomatically.
- **MEDICAL CONDITIONS AGGRAVATED BY OVEREXPOSURE:** None known.

SECTION 5: FIREFIGHTING MEASURES

5.1 EXTINGUISHING MEDIA

- **RECOMMENDED FIRE EXTINGUISHING MEDIA:** Water Spray**,** Dry Powder, Foam, Carbon Dioxide, or any other type.
- **UNSUITABLE FIRE EXTINGUISHING MEDIA:** None.

5.2 SPECIAL HAZARDS ARISING FROM THE SUBSTANCE OR MIXTURE

- **NFPA FLAMMABILITY CLASSIFICATION:**

NFPA Rating:

NFPA Hazard Classification: Not classified.

5.3 UNUSUAL HAZARDS IN FIRE SITUATIONS

POTENTIAL HAZARD	DESCRIPTION OF PRODUCT
Decomposition:	Generates irritating vapors, carbon monoxide, carbon dioxide, and compounds containing sodium, potassium and chloride.
Incompatibilities:	See Section 10 (Reactivity and Stability).
Explosion Sensitivity to Mechanical Impact:	Not applicable.
Explosion Sensitivity to Static Discharge:	Not applicable.

SECTION 5: FIREFIGHTING MEASURES

5.4 ADVICE FOR FIREFIGHTERS

- Self-Contained Breathing Apparatus and full protective equipment for fire response should be worn in any situation. Move containers from fire area if it can be done without risk to personnel. Otherwise, use water spray to keep fire-exposed containers cool.

SECTION 6: ACCIDENTAL RELEASE MEASURES

6.1 PERSONAL PRECAUTIONS, PROTECTIVE EQUIPMENT, AND EMERGENCY PROCEDURES

- **RESPONSE TO INCIDENTAL RELEASES:** Personnel who have received basic chemical safety training can generally handle small-scale releases. Gloves and safety glasses must be worn when cleaning up spills. Use caution during clean-up; contaminated floors and items may be slippery.
- **RESPONSE TO NON-INCIDENTAL RELEASES:** Generally, releases of this product will be no larger than the loss of one shipment of material. Subsequently, personnel can follow the instructions for incidental releases.
- **RESPONSE PROCEDURES FOR ANY RELEASE:** Use damp sponge or polypad to carefully cleanse contaminated area or items. If appropriate, further clean contaminated area and equipment with soap and water solution, followed by a water rinse.

6.2 ENVIRONMENTAL PRECAUTIONS

- **IN CASE OF SPILL:** Collect spillage promptly. Avoid response actions that can cause a release of a significant amount of substance into the environment. Avoid accidental dispersal of spilled material into soil, waterways, and sewers.

6.3 METHODS AND MATERIALS FOR CONTAINMENT AND CLEAN-UP

- **SPILL RESPONSE EQUIPMENT:** Polypad or sponge. Appropriate waste container.

6.4 REFERENCE TO OTHER SECTIONS

- See Section 8 (Exposure Controls/Personal Protection) for personal protective equipment recommendations.
- See Section 13 (Disposal Recommendations) for information on waste disposal.

SECTION 7: HANDLING AND STORAGE

7.1 PRECAUTIONS FOR SAFE HANDLING

- **HYGIENE PRACTICES:** Follow good chemical hygiene practices. Do not smoke, drink, eat, or apply cosmetics in the chemical use area. Avoid inhalation of mists, sprays, or aerosols. Use in well-ventilated area. Avoid contact with skin or eyes. Remove contaminated clothing promptly. Clean up spilled product immediately.
- **HANDLING PRACTICES:** Employees must be appropriately trained to use this product safely as needed. Keep containers closed when not in use.

7.2 CONDITIONS FOR SAFE STORAGE

- **STORAGE PRACTICES:** Ensure all containers are correctly labeled. Store containers away from direct sunlight, and sources of intense heat. Store this product away from incompatible chemicals. Inspect all incoming containers before storage to ensure containers are properly labeled and not damaged. Empty containers may contain residual material; therefore, empty containers should be handled with care.
- **INCOMPATIBILITIES:** See Section 10 (Stability and Reactivity).

7.3 SPECIFIC END USES

- This product is for use in research and development laboratories by trained laboratory personnel.

SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1 CONTROL PARAMETERS

- **AIRBORNE EXPOSURE LIMITS:**
  - *Dimethyl Sulfoxide (DMSO)*
    - American Industrial Hygiene Association Workplace Environmental Exposure Level = 250 ppm

SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

- **BIOLOGICAL OCCUPATIONAL EXPOSURE LIMITS:** None established.
- **DERIVED NO EFFECTS LEVEL:** The following DNELs have been established for the components of this product.
- The following DNELs have been established for the components of this product.
    - Dimethyl Sulfoxide: Consumer (Local) Inhalation: 47 mg/m³ (long-term exposure) and 120 mg/m³ (long-term exposure). Consumer (Systemic) Oral: 60 mg/kg bodyweight/day (long-term exposure). Consumer (Systemic) Dermal: 100 mg/kg bodyweight /day (long-term exposure). Worker (Local) Inhalation: 265 mg/m³ (long-term exposure). Worker (Systemic) Inhalation: 484 mg/m³ (long-term exposure). Worker (Systemic) Dermal: 200 mg/kg bodyweight/day (long-term exposure)
- **PREDICTED NO EFFECT CONCENTRATION:** The following DNELs have been established for the components of this product.
    - Dimethyl Sulfoxide Aquatic, Freshwater =17 mg/L. Aquatic, Marine Water = 1.7 mg/L. Freshwater Sediment =13.4 mg/kg dry weight. Sewage Treatment Plant (STP) Water = 11 mg/L. Soil (Agriculture): 3.02 mg/kg dry weight
    - Proteinase K: Freshwater =0.885 mg/L. Aquatic, Freshwater Sediment = 3.3 mg/kg dry weight. Soil (Agriculture): 0.141 mg/kg dry weight

8.2 EXPOSURE CONTROLS

- **GENERAL GUIDELINES:** This product is intended for use by trained personnel as part of a kit.
- **ENGINEERING CONTROLS:** Ensure the area has adequate ventilation to ensure minimal inhalation of mists or sprays occurs. Eye wash stations and safety showers should be readily available.
- **RESPIRATORY PROTECTION:** None needed under normal circumstances of use.
- **HAND PROTECTION:** Neoprene or nitrile gloves should be used if skin contact can occur (e.g., spill clean-up). Ensure gloves are intact prior to use.
- **EYE PROTECTION:** Safety glasses are recommended if splash or spray can occur during use (e.g., during refilling of unit).
- **BODY PROTECTION:** Body protection suitable to task is recommended (e.g., laboratory coat).
- **OTHER PROTECTIVE MEASURES**: Wash hands during breaks and at the end of handling the material. Immediately remove any contaminated clothing.

8.3 ENVIRONMENTAL EXPOSURE CONTROLS

- Minimize the generation of mists, sprays, or aerosols while using this product. Avoid release into the environment.

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

9.1 INFORMATION ON BASIC PHYSICAL AND CHEMICAL PROPERTIES

- **APPEARANCE AND DISTINGUISHING CHARACTERISTICS:**

PROPERTY	DATA
State:	Liquid
Color:	Colorless.
Odor:	Odorless
Odor Threshold:	Not determined
pH:	7-8

- **PHYSICAL DATA:**

PROPERTY	DATA
Melting Point/Freezing Point:	Not determined.
Initial Boiling Point/Boiling Range:	Greater or equal to 100 °C (212 °F)
Flash Point:	Not applicable.
Evaporation Rate (Water = 1):	Approximately 1.0
Flammability:	Not applicable.
Upper/Lower Explosion Limits	Not applicable.
Vapor Pressure:	Less than or equal to 23 hPa (17.3 mmHg)
Vapor Density	Not determined.
Relative Density at 20 °C (68 °F)	Approximately 1.01 g.cm3; (8.44 lb./gal)

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES (Continued)

Solubility:	Totally soluble in water
Partition Coefficient/n-octanol/water:	Not determined
Autoignition Temperature:	Not applicable.
Decomposition Temperature:	Not determined.
Kinematic Viscosity:	Not determined.
Particle Characteristics:	Not applicable.

9.2 INFORMATION RELEVANT TO PHYSICAL HAZARD CLASSIFICATION

- **Information regarding Physical Hazard Classes** This product is not classified under any physical hazard class.
- **Other Safety Characteristics** Not applicable

9.3 INFORMATION RELEVANT TO PHYSICAL HAZARD CLASSIFICATION

- **VOC content:** 0.00%; 0.0 g/L

SECTION 10: STABILITY AND REACTIVITY

10.1 REACTIVITY AND CHEMICAL STABILITY

- The product is not reactive under typical conditions of use or handling.
- Normally stable under standard temperatures and pressures.

10.2 POSSIBILITY OF HAZARDOUS REACTIONS (INCLUDING THOSE ASSOCIATED WITH FORESEEABLE EMERGENCY)

- Product is not self-reactive, water-reactive, or air-reactive; it will not undergo hazardous polymerization.

10.3 CONDITIONS TO AVOID

- Avoid contact with incompatible chemicals and adverse storage conditions.

10.4 INCOMPATIBLE MATERIALS

- Strong oxidizing agents.

10.5 HAZARDOUS DECOMPOSITION PRODUCTS

- Products of thermal decomposition include oxides of carbon, compounds containing nitrogen, and irritating vapors.

SECTION 11: TOXICOLOGICAL INFORMATION

11.1 INFORMATION ON ACUTE TOXICITY

- **PRODUCT TOXICOLOGY DATA:** The following are calculated estimates for the product:
  - Acute Toxicity Estimate (Oral) > 5000 mg//kg
  - Acute Toxicity Estimate (Dermal) > 5000 mg/kg
- **COMPONENT TOXICOLOGY DATA:** The following data are available for the components of this product:
  Dimethyl Sulfoxide (DMSO)
  LD50 Oral - Rat - 14,500 mg/kg
  LC50 Inhalation - Rat - 4 h - 40250 ppm
  LD50 Dermal - Rabbit - > 5,000 mg/kg
- **DEGREE OF IRRITATION:** This product is not anticipated to cause skin or eye irritation.
- **SENSITIZATION:** Proteinase K is a respiratory sensitizer. However, the concentration is below the cut-off level and is too dilute in the product to present a significant sensitization hazard in the product.
- **REVIEW OF ACUTE SYMPTOMS AND EFFECTS BY ROUTE OF EXPOSURE:** See Section 2 (Hazard Information) and Section 4 (First-Aid Measures) for additional details.
  - **Eyes:** May cause eye irritation upon prolonged exposure.
  - **Skin:** May cause skin irritation upon prolonged exposure.
  - **Inhalation:** Not anticipated to be a significant route of occupational exposure.
  - **Ingestion:** Not anticipated to be a significant route of occupational exposure.

SECTION 11: TOXICOLOGICAL INFORMATION (Continued)

11.2 INFORMATION ON CHRONIC TOXICITY

- **CARCINOGENICITY STATUS:** The components of this product are not listed as carcinogens by NTP, IARC, or OSHA.
- **REPRODUCTIVE TOXICITY INFORMATION:** Not applicable.
- **MUTAGENIC EFFECTS** Not applicable.
- **SPECIFIC TARGET ORGAN TOXICITY – SINGLE EXPOSURE:** Not applicable.
- **SPECIFIC TARGET ORGAN TOXICITY – REPEATED EXPOSURE:** Not applicable.
- **ASPIRATION HAZARD:** Not applicable.

SECTION 11: TOXICOLOGICAL INFORMATION (Continued)

11.3 OTHER USEFUL TOXICOLOGY INFORMATION

- **ENDOCRINE-DISRUPTING PROPERTIES**: Not applicable.
- **TOXICOLOGICALLY SYNERGISTIC PRODUCTS:** None known.
- **ADDITIONAL TOXICOLOGY:** Not applicable.

SECTION 12: ECOLOGICAL INFORMATION

12.1 ENVIRONMENTAL TOXICITY

- The following aquatic toxicity data are available for components of this product.

DIMETHYL SULFOXIDE

  - Toxicity to fish: Static test LC50 - Danio rerio (zebra fish) - > 25,000 mg/l - 96 hours
  - Toxicity to daphnia and other aquatic invertebrates: Static test EC50 - Daphnia magna (Water flea) - 24,600 mg/l - 48 hours
  - Toxicity to algae: Static test ErC50 - Pseudokirchneriella subcapitata (green algae) - 17,000 mg/l - 72 hours
  - Toxicity to bacteria: EC50 - Activated sludge - 10 - 100 mg/l - 30 minutes

12.2 PERSISTENCE AND DEGRADABILITY

- When released into the soil, this product is expected to biodegrade, dissipate in soils via oxidation, or otherwise chemically degrade or photo-decompose via solar radiation. The following data are available for components of this product:
  - **DIMETHYL SULFOXIDE:** Biodegradability aerobic - Exposure time 28 days; Result: 31 % - Not readily biodegradable.

12.3 BIOACCUMULATIVE POTENTIAL

- Based on the Partition Coefficient (less than -1.35 for Diethyl Sulfoxide), this product is not anticipated to bioaccumulate.

12.4 MOBILITY IN SOIL

- Based on its total solubility in water, this product is expected to have significant mobility in soil.

12.5 RESULTS OF PBT AND vPvB ASSESSMENT

- Not classified as PBT or vPvB.

12.6 ENDOCRINE DISRUPTING PROPERTIES

- None reported.

12.7 OTHER ADVERSE ENVIRONMENTAL EFFECTS

- None reported.

SECTION 13: DISPOSAL CONSIDERATION

13.1 WASTE TREATMENT METHODS

- Dispose of in accordance with local, state, and national regulations.

13.2 DISPOSAL CONSIDERATIONS

- **EPA RCRA WASTE CODE:** Not applicable to wastes consisting only of this product.
- **SEWAGE DISPOSAL:** Waste should not be disposed of by release to sewers.

13.3 DISPOSITION OF EMPTY CONTAINERS

- Empty containers may contain residual material; therefore, empty containers should be handled with care.
- Empty containers should be discarded properly.

SECTION 14: TRANSPORT INFORMATION

14.1 HAZARDOUS MATERIALS TRANSPORTATION REGULATIONS

- **DEPARTMENT OF TRANSPORTATION HAZARDOUS MATERIALS SHIPPING REGULATIONS:**

UN/NA Number	Proper Shipping Name	Packing Group	Hazard Class	Label	North American Emergency Response Guide #	Marine Pollutant Status
NOT REGULATED AS DANGEROUS GOODS FOR TRANSPORTATION						

- **CANADIAN TRANSPORTATION INFORMATION**: This product is not regulated by Transport Canada as dangerous good under Canadian transportation standards.

SECTION 14: TRANSPORT INFORMATION (Continued)

- **EUROPEAN TRANSPORT CLASSIFICATION BY ROAD (ADR)/RAIL (RID):** Product is not regulated as a dangerous good.
- **IATA DESIGNATION**: Product is not regulated as a dangerous good by the International Air Transport Association.
- **IMO DESIGNATION**: Product is not regulated as a dangerous good by the International Maritime Organization.

14.2 ENVIRONMENTAL HAZARDS

- This product is not classified as a Marine Pollutant for transportation.

14.3 SPECIAL PRECAUTIONS FOR TRANSPORTERS

- None established.

14.4 TRANSPORT IN BULK

- **ACCORDING TO ANNEX II OF MARPOL 73/78 AND THE IBC CODE:** Not applicable.

SECTION 15: REGULATORY INFORMATION

15.1 OTHER IMPORTANT U.S. SAFETY, HEALTH, AND ENVIRONMENTAL REGULATIONS

- **US TOXICITY SUBSTANCES CONTROL INVENTORY:** The components of this product are listed or exempted.
- **U.S. SARA THRESHOLD PLANNING QUANTITY**: Not applicable.
- **U.S. SARA HAZARD CATEGORIES (SECTION 311/312, 40 CFR 370-21):** Not applicable.
- **U.S. CERCLA REPORTABLE QUANTITY (RQ):** Not applicable to the product, based on composition and volume.
- **U.S. SARA TITLE 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
- **US CLEAN AIR ACT (SECTION 112r):** Not applicable.

SECTION 15: REGULATORY INFORMATION

15.2 OTHER IMPORTANT U.S. STATE REGULATIONS FOR COMPONENTS

- **CALIFORNIA SAFE DRINKING WATER ACT (PROPOSITION 65) STATUS:** Not applicable.
- **NEW JERSEY RIGHT TO KNOW LIST HAZARDOUS SUBSTANCES LIST:** No product ingredient is listed.
- **NEW JERSEY ENVIRONMENTAL SUBSTANCES LIST:** No product ingredient is listed.
- **PENNSYLVANIA RIGHT-TO-KNOW LIST:** No product ingredient is listed.

15.3 INTERNATIONAL HEALTH SAFETY, HEALTH, AND ENVIRONMENTAL REGULATIONS

- **ADDITIONAL WHMIS INFORMATION:** This SDS contains all the required elements under the Canadian Hazardous Products regulations (SOR 2022-272).
- **CANADIAN DSL/NDSL INVENTORY STATUS:** All components of this product are listed or exempted.
- **CANADIAN ENVIRONMENTAL PROTECTION ACT (CEPA) PRIORITIES SUBSTANCES LISTS:** The components of this product are not on the CEPA Priority Substances Lists.
- **E.U. REACH:** Contains no substance on the REACH candidate list. Contains no REACH Annex XIV substances. REACH (1907/2006). Contains no substance with REACH Restrictions.
- **JAPAN:**
  - This document complies with Japan's Industrial Safety and Health Act (, Article 57-2. See section 16 for more information on national regulations.
  - ENCS (Existing and New Chemical Substances): Dimethyl sulfoxide is listed; ENCS Number: 2-15534.
  - ISHL (Industrial Safety and Health Law): All components are listed or exempted.
  - CSCL (Chemical Substances Control Law): Neither Dimethyl sulfoxide or Proteinase K are not designated as a Class I or Class II Specified Chemical Substance under the CSCL, meaning they s not considered a persistent, bioaccumulative, or highly hazardous substance in Japan.

15.4 CHEMICAL SAFETY ASSESSMENT

- **ASSESSMENT INFORMATION:** No chemical safety assessment has been carried out for this product.

SECTION 16: OTHER INFORMATION

16.1 INDICATION OF CHANGE

- **DATE OF PREPARATION:** April 25, 2025
- **SUPERCEDES**: Not applicable.

16.2 HAZARDOUS MATERIALS SYSTEM RATING

Health	**0**
Flammability	**0**
Physical Hazard	**0**
Protective Equipment	*

(Personal Protective Equipment Rating: Occupational Use situations: Refer to section 8 for guidance on the selection of personal production.

- **CHANGE INDICATED:** New product.

SECTION 16: OTHER INFORMATION (Continued)

16.3 DEFINITIONS

SECTION	EXPLANATION OF TERMS/ABBREVIATIONS
ALL	OSHA: U.S. Federal Occupational Safety and Health Administration. WHMIS: Canadian Workplace Hazardous Materials Standard. GHS: Globally Harmonized System of Classification of Chemical Substances. HCS: Hazard Communication Standard (U.S.). HPR: Hazardous Products Regulations (Canada). EU: European Union. CLP: Union Classification, Labelling and Packaging of Substances and Mixtures
3	CAS Number: Chemical Abstract Service Number, used by the American Chemical Society to uniquely identify a chemical.
5	NFPA: National Fire Protection Association. NFPA FLAMMABILITY CLASSIFICATION: The NFPA uses the flash point (Fl.P.) and boiling point (BP) to classify flammable or combustible liquids. Class IA: Fl.P. below 73°F and BP below 100°F. Class IB: Fl.P. below 73°F and BP at or above 100°F. Class IC: Fl.P. at or above 73°F and BP at or above 100°F. Class II: Fl.P. at or above 100°F and below 140°F. Class IIIA: Fl.P. at or above 140°F and below 200°F. Class IIIB: Fl.P. at or above 200°F. NFPA HAZARDOUS MATERIALS RATING: This is a rating system used to summarize physical and health hazards to firefighters Blue = Health hazard; Red = Fire Hazard; Yellow = Reactivity Hazard. 0 = No Significant Hazard. 1 = Slight Hazard. 2 = Moderate Hazard. 3 = Severe Hazard. 4 = Extreme Hazard.
8	ACGIH: American Conference of Government Industrial Hygienists; TWA: Time-Weighted Average (over an 8-hour work day); STEL: Short-Term Exposure Limit (15-minute average, no more than 4 times daily and each exposure separated by one hour minimally); C: Ceiling Limit (concentration not to be exceeded in a work environment). PEL: Permissible Exposure Limit. NIOSH: National Institute of Occupational Safety and Health; REL: Recommended Exposure Limit; IDLH: Immediately Dangerous to Life and Health ppm: Parts per Million. mg/m^3: Milligrams per cubic meter. BEI: Biological Exposure Limit. MAK: Maximum Concentration Values in the Workplace; AIHA WEEL: AIHA WEEL – American Industrial Hygiene Association Workplace Environment Exposure Levels; OEL: Occupational Exposure Limit.
9	pH: Scale (0 to 14) used to rate the acidity or alkalinity of aqueous solutions. For example, a pH value of 0 indicates a strongly acidic solution, a pH value of 7 indicates a neutral solution, and a pH value of 14 indicates an extremely basic solution. FLASH POINT: Temperature at which a liquid generates enough flammable vapors so that ignition may occur. AUTOIGNITION TEMPERATURE: Temperature at which spontaneous ignition occurs. LOWER EXPLOSIVE LIMIT (LEL): The minimal concentration of flammable vapors in air which will sustain ignition. UPPER EXPLOSIVE LIMIT (UEL): The maximum concentration of flammable vapors in air which will sustain ignition.
11	CARCINOGENICITY STATUS: NTP: National Toxicology Program. IARC: International Agency for Research on Cancer. TOXICOLOGY DATA: LDxx or LCxx: The Lethal Dose or Lethal Concentration of a substance which will be fatal to a given percentage (xx) of exposed test animals by the designate route of administration. This value is used to assess the toxicity of chemical substances to humans. TDxx or TCxx: The Toxic Dose or Toxic Concentration of a substance which will cause an adverse effect to a given percentage (xx) of exposed test animals by the designate route of administration.
12	EC50: Effect Concentration. PBT or vPvB: Persistent/ Bioaccumulative /Toxic; Very Persistent/ Very Bioaccumulative
13	RCRA: Resource Conservation and Recovery Act. The regulations promulgated under this act under Act are found in 40 CFR, Sections 260 ff, and define the requirements of hazardous waste generation, transport, treatment, storage, and disposal. EPA RCRA Waste Codes: Defined in 40 CFR Section 261.
15	CERCLA: Comprehensive Environmental Response, Compensation, and Liability Act. SARA: Superfund Amendments and Reauthorization Act. TSCA: Toxic Substances Control Act. DSL/NDSL: Domestic Substances List/Non-Domestic Substances List. REACH: European Union regulation concerning the Registration, Evaluation, Authorization, and Restriction of Chemicals.
16	HAZARDOUS MATERIALS IDENTIFICATION SYSTEM RATING: This is a rating system used by industry to summarize physical and health hazards to chemical users and was originally developed by the National Paint and Coating Association. 0 = No Significant Hazard. 1 = Slight Hazard. 2 = Moderate Hazard. 3 = Severe Hazard. 4 = Extreme Hazard.