

SAFETY DATA SHEET



This Safety Data Sheet (SDS) complies with the requirements of the U.S. Federal Occupational Safety and Health Administration Hazard Communication Standard (29 CFR 1910.1200, as updated in 2012) and equivalent State Standards. It has also been developed in accordance with 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 Classification, Labelling and Packaging of Substances and Mixtures (EC No. 1272/2008). Refer to Section 16 of this document for the definition of terms and abbreviations.

SECTION 1: IDENTIFICATION

1.1 PRODUCT IDENTIFICATION

- **PRODUCT NAME:** DNA Stain
- **PRODUCT CODE:** 20356

1.2 PRODUCT USE AND RESTRICTIONS

- **IDENTIFIED USE:** Laboratory research and development.
- **USES ADVISED AGAINST:** Non-laboratory procedures.
- **IDENTIFIED USERS:** For sale to, use and storage by personnel trained in handling product safely.

1.3 MANUFACTURER INFORMATION

- **MANUFACTURER/SUPPLIER:** **Bionano Genomics**
- **ADDRESS:** 9650 Towne Centre Dr.; San Diego, CA 92121
- **BUSINESS PHONE:** +1-858-888-7600 (9:00 am to 5:00 pm, Pacific Standard Time)
- **EMERGENCY PHONE:** +1-858-888-7600 (9:00 am to 5:00 pm, Pacific Standard Time)

SECTION 2: HAZARD IDENTIFICATION

2.1 HAZARD CLASSIFICATION (US OSHA)

- Flammable liquids (Category 4)

2.2 LABEL ELEMENTS (US OSHA)

- **Hazard Pictograms:** Not applicable.
- **Signal Word:** Warning.
- **Hazard Statements:** H227 Combustible liquid.
- **Precautionary Statements:** P210: Keep away from heat/sparks/open flames/hot surfaces. No smoking. P280: Wear protective gloves/ eye protection/ face protection. P370 + P378: In case of fire: Use dry sand, dry chemical or alcohol-resistant foam to extinguish. P403 + P235: Store in a well-ventilated place. Keep cool. P501: Dispose of contents/ container to an approved waste disposal plant.

2.3 HAZARD CLASSIFICATION (EU CLP)

- Not classified as hazardous.

2.4 LABEL ELEMENTS (EU CLP)

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

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

- US OSHA: Dimethyl Sulfoxide, the main component of this product, is rapidly absorbed through skin.

SECTION 3: COMPOSITION / INFORMATION ON INGREDIENTS

3.1 IDENTIFICATION OF HAZARDOUS SUBSTANCES IN PRODUCT

NAME	CAS NUMBER	GHS HAZARD CLASSIFICATION FOR COMPONENT	% (w/w)
Dimethyl Sulfoxide	67-68-5	Flammable Liquids (Category 4)	> 98%
The components of this product do not contribute either health or physical hazards at the concentrations present.			Balance

SECTION 4: FIRST AID MEASURES

4.1 DESCRIPTION OF FIRST AID MEASURES

- 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:

Inhalation of mists or sprays may be irritating to nasal passages and other tissues of the respiratory tract.

Ingestion:

May be mildly irritating to digestive system and may cause discomfort, nausea, and other symptoms.

- 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: Class IIIA Combustible Liquid.

SECTION 5: FIREFIGHTING MEASURES (Continued)

5.3 UNUSUAL HAZARDS IN FIRE SITUATIONS

POTENTIAL HAZARD

Decomposition:

Incompatibilities:

Explosion Sensitivity to Mechanical Impact:

Explosion Sensitivity to Static Discharge:

DESCRIPTION FOR PRODUCT

Generates irritating vapors, carbon monoxide, carbon dioxide, and irritating vapors.

See Section 10 (Reactivity and Stability).

Not applicable.

Not applicable.

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.

As needed, respond to non-incident chemical releases of this product (such as the simultaneous destruction of several pallets of this product) by clearing the impacted area and contacting appropriate emergency personnel.

In the unlikely event of a multi-container release of the product, and there is no other hazardous condition in the area, the use of an air-purifying respirator with high efficiency particulate air filter, face-shield, safety glasses, and double gloves (e.g. nitrile over latex gloves), and body protection is recommended if mists/sprays/aerosols can be generated during clean-up or the concentration of vapors is high.

- **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 the 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.

SECTION 7: HANDLING AND STORAGE (Continued)

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:**

- **U.S. LIMITS**

DIMETHYL SULFOXIDE

AIHA WEEL = 250 PPM

- **EU LIMITS**

DIMETHYL SULFOXIDE

Not Established

- **EU MEMBER NATION/EUROPEAN OCCUPATIONAL EXPOSURE LIMITS**

DIMETHYL SULFOXIDE			
Austria: 50 ppm	Finland: Not Established	Latvia: Not Established	Romania: Not Established
Belgium: Not Established	France: Not Established	Lithuania: 50 ppm	Slovakia: Not Established
Bulgaria: Not Established	Germany: Not Established	Luxemburg: Not established	Slovenia: Not Established
Croatia: Not Established	Gibraltar: Not Established	Malta: Not Established	Spain: Not Established
Republic of Cyprus: Not Established	Greece: Not Established	Netherlands: Not Established	Sweden: Not Established
Czech Republic: Not Established	Hungary: Not Established	Norway: Not Established	Switzerland: TWA = 10 mg/m ³ (Inhalable Dust)
Denmark: 50 ppm	Ireland: Not Established	Poland: Not Established	United Kingdom: Not Established
Estonia: Not Established	Italy: Not Established	Portugal: Not Established	

- **BIOLOGICAL OCCUPATIONAL EXPOSURE LIMITS:** None established.

8.2 EXPOSURE CONTROLS

- **GENERAL GUIDELINES:** This product is intended for use research and development laboratories.
- **ENGINEERING CONTROLS:** Ensure 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 are recommended. Ensure gloves are intact prior to use.
- **EYE PROTECTION:** Safety glasses are recommended.
- **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:

<u>PROPERTY</u>	<u>DATA</u>
State:	Liquid
Color:	Colorless
Odor:	Odorless
Odor Threshold:	Not determined
pH:	Not applicable

• PHYSICAL DATA:

<u>PROPERTY</u>	<u>DATA</u>
Melting Point/Freezing Point:	Approximately 18.4 °C (65.1 °)
Initial Boiling Point/Boiling Range:	Approximately 189 °C (372.2 °F)
Flash Point:	87 °C (188.6 °)
Evaporation Rate (Water = 1):	Not determined
Flammability:	Class IIIA Combustible Liquid
Upper/Lower Explosion Limits	42%; 2.6%
Vapor Pressure:	Approximately 0.55 mbar @ 20°C
Vapor Density	Approximately 2.7
Relative Density (Density):	Approximately 1.1 (9.17 lb./gal.)
Solubility:	Totally soluble in water
Partition Coefficient/n-octanol/water:	Not determined
Autoignition Temperature:	Approximately 301 °C (573.8 °F)
Decomposition Temperature:	> 190 °C (374 °F)
Viscosity:	1.98 mPa.s @ 25°C (77 °F)

9.2 OTHER USEFUL INFORMATION ON PROPERTIES

- No data available.

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

- 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, strong acids, strong bases, and alkali metals.

10.5 HAZARDOUS DECOMPOSITION PRODUCTS

- Products of thermal decomposition include oxides of carbon 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

SECTION 11: TOXICOLOGICAL INFORMATION (Continued)

- **COMPONENT TOXICOLOGY DATA:** The following data are available for components of this product:
DIMETHYL SULFOXIDE
LD50 (Oral, Rat): 28,300 mg/kg
LC0 (Inhalation, Rat): 4 hours, > 5.33 mg/l
LD50 (Dermal, Rat): 40,000 mg/kg
- **DEGREE OF IRRITATION:** This product is not anticipated to cause skin or eye irritation.
- **SENSITIZATION:** This product does not contain any compound reported to be either a skin or respiratory sensitizer.
- **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:** Inhalation of mists or sprays may be irritating to tissues of the respiratory tract.
 - **Ingestion:** May be mildly irritating to digestive system and may cause nausea, and other symptoms.

11.2 **INFORMATION ON CHRONIC TOXICITY**

- **CARCINOGENICITY STATUS:** This product is not listed as a carcinogen by NTP, IARC, or OSHA.
- **REPRODUCTIVE TOXICITY INFORMATION:** This product not anticipated to cause reproductive effects under typical circumstances of occupational exposure.
- **MUTAGENIC EFFECTS** This product is not anticipated to cause mutagenic effects under typical circumstances of occupational exposure.
- **SPECIFIC TARGET ORGAN TOXICITY – SINGLE EXPOSURE:** Not applicable.
- **SPECIFIC TARGET ORGAN TOXICITY – REPEATED EXPOSURE:** Not applicable.
- **ASPIRATION HAZARD:** Not applicable.

11.3 **OTHER USEFUL TOXICOLOGY INFORMATION**

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

SECTION 12: ECOLOGICAL INFORMATION

12.1 **ENVIRONMENTAL TOXICITY**

- Based on available data, this product is not anticipated to be harmful to contaminated terrestrial plants or animals.
- Based on available data, this product is not anticipated to be harmful to contaminated aquatic plants or animals.
- The following aquatic toxicity data are available for components of this product:

DIMETHYL SULFOXIDE

LC50 - Danio rerio (zebra fish) - > 25,000 mg/l - 96 hours
EC50 - Daphnia magna (Water flea) - 24,600 mg/l - 48 hours
ErC50 - Pseudokirchneriella subcapitata (green algae) - 17,000 mg/l - 72 hours
EC50 - activated sludge - 10 - 100 mg/l - 30 minutes

12.2 **PERSISTENCE AND DEGRADABILITY**

- When released into the soil, the components of this product are expected to biodegrade, dissipate in soils via oxidation, or otherwise chemically degrade or photo-decompose via solar radiation.

12.3 **BIOACCUMULATIVE POTENTIAL**

- This product is not anticipated to bioaccumulate significantly.

12.4 **MOBILITY IN SOIL**

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

12.5 **RESULTS OF PBT AND vPvB ASSESSMENT**

- Not classified as PBT or vPvB.

12.6 **OTHER ADVESE 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:** Because it is a laboratory chemical, 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 A DANGEROUS GOOD FOR TRANSPORTATION						

- **CANADIAN TRANSPORTATION INFORMATION:** This product is not regulated by Transport Canada as a dangerous good under Canadian transportation standards.
- **EUROPEAN TRANSPORT CLASSIFICATION MY ROAD (ADR)/RAAL (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

- None known.

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

- **U.S. SARA THRESHOLD PLANNING QUANTITY:** Not applicable to the product, based on composition and volume.
- **U.S. SARA HAZARD CATEGORIES (SECTION 311/312, 40 CFR 370-21):** Flammable liquids.
- **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.

15.2 OTHER IMPORTANT U.S. STATE REGULATIONS FOR COMPONENTS

- **CALIFORNIA SAFE DRINKING WATER ACT (PROPOSITION 65) STATUS:** Not applicable.

15.3 CANADIAN AND EU SAFETY, HEALTH AND ENVIRONMENTAL REGULATIONS

- **ADDITIONAL WHMIS INFORMATION:** The following information is offered during the transition period for implementation of new regulations.
 - **WHMIS 2015:** See Section 2.
 - This SDS contains all the information required by the Hazardous Products Regulations (SOR/2015-17).

SECTION 15: REGULATORY INFORMATION (Continued)

- **CANADIAN DSL/NDL 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 REACH substances with Annex XVII restrictions. Contains no substance on the REACH candidate list. Contains no REACH Annex XIV substances.
- **GERMAN WATER HAZARD CLASSIFICATION: WGK 1** - Low hazard to waters.
- **FRANCE: TABLEAUX DE MALADIES PROFESSIONNELLES (Table of Occupational Illnesses):** No listing.
- **THE NETHERLANDS: LIST OF CARCINOGENS, MUTAGENS, AND REPRODUCTIVE TOXINS:** No listing.
- **DENMARK: LIST OF COMPOUNDS AND PROCESSES CONSIDERED TO BE CARCINOGENIC:** No listing.

15.4 CHEMICAL SAFETY ASSESSMENT

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

SECTION 16: OTHER INFORMATION

16.1 INDICATION OF CHANGE

- **DATE OF PREPARATION:** October 14, 2019
- **SUPERCEDES:** September 14, 2010
- **CHANGE INDICATED:** Format updates; update of regulatory information; inclusion of component toxicity data, and Acute Toxicity Estimates for product.

16.2 HAZARDOUS MATERIALS SYSTEM RATING

Health	0	
Flammability	2	
Physical Hazard	0	<i>(Personal Protective Equipment Rating: Occupational Use situations: B – Safety glasses/gloves; C – Add body protection appropriate to task. See section 8 for details.)</i>
Protective Equipment	B/C	

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 (F.P.) and boiling point (BP) to classify flammable or combustible liquids. Class IA: F.P. below 73°F and BP below 100°F. Class IB: F.P. below 73°F and BP at or above 100°F. Class IC: F.P. at or above 73°F and BP at or above 100°F. Class II: F.P. at or above 100°F and below 140°F. Class IIIA: F.P. at or above 140°F and below 200°F. Class IIIB: F.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 Concentrations. <i>Note:</i> In July 1992, a court ruling vacated the more protective PELs set by OSHA in 1989. Because OSHA may enforce the more protective levels under the “general duty clause”, both the current and vacated levels are presented in this document. ppm: Parts per Million. mg/m³: 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, pH 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.

SECTION 16: OTHER INFORMATION (Continued)

SECTION EXPLANATION OF TEMS/ABBREVIATIONS

- 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.