ImmunoChemistry TECHNOLOGIES LLC

SAFETY DATA SHEET (SDS)

according to Regulation (EC) No. 830/2015 amending 1907/2006

Section 1: Identification of the substance/mixture and of the company/undertaking

1.1	**Product identifier:**		SR-VAD-FMK
1.1a	Other means of identification:		.
1.1b		Alternative product name(s)/ synonyms:	SR-VAD-FLICA; poly caspase inhibitor reagent; a sulforhodamine-B derivative of valylalanylaspartic acid fluoromethyl ketone.
1.1c		Product number/Catalog #(s):	679, 6128, 6139, 6219, 6221
1.1d		Internal identification:	SR-VAD-FLICA; Poly-Caspase Inhibitor Reagent; a sulforhodamine-B derivative of valylalanylaspartic acid fluoromethyl ketone
1.2	**Relevant identified uses of the substance or mixture and uses advised against:**		For research use only. Not for use in diagnostic procedures.
1.2a	Brief description of what the substance or mixture is intended to do:		Caspase enzyme inhibitor and apoptosis detection reagent.
1.3	**Details of the supplier of the SDS:**		.
1.3a		Name:	ImmunoChemistry Technologies, LLC (ICT)
1.3b		Address:	9401 James Avenue South, Suite 155
1.3c		City, State, Zip, Country	Bloomington, MN 55431-2500 USA
1.3d		Phone number:	1-800-829-3194 and 952-888-8788
1.3e		Fax number:	952-888-8988
1.3f		Website:	www.immunochemistry.com
1.3g		Email:	help@immunochemistry.com
1.3h		Contact person at ICT:	Quality Documentation Department
1.4	**Emergency telephone number:**		ICT: 1-800-829-3194 (USA & Canada) or 952-888-8788 world wide; ICT hours are 9 am-5 pm central time USA, Monday through Friday (excluding holidays). Chemtrec 24-hour access within USA and Canada: 1-800-424-9300 or +1 703-527-3887. Collect calls accepted.

Section 2: Hazards identification

2.1	**Classification of the substance or mixture:**		.
2.1a	Product is a:		Substance.
2.1b	Classification according to (EC) No. 1272/2008 {CLP}:		Does not meet the criteria for classification.
2.1c	The most important adverse physiochemical, human health, and environmental effects:		Refer to Sections 9-12.
2.2	**Label elements:**		None.
2.2a	GHS label elements, including precautionary statements:		None.
2.2b		Contains:	None.
2.2c	Labeling in accordance with (EC) No. 1272/2008:		None.
2.2d	Hazard Pictograms (Hazard Symbols):		None.
2.2e	Signal word:		None.
2.2f	Hazard statements:		None.
2.2g	Precautionary statements:		None.
2.2h	Supplementary precaution statements:		None.
2.3	**Other hazards:**		No additional information available.
2.3a	Does the chemical meet the criteria for PBT or vPvB?		Not applicable.
2.3b	Other hazards which do not result in classification:		No information available.

Section 3: Composition/information on ingredients

3.1	**Substance:**		Item is a substance.	
	3.1a Chemical identity:		SR-VAD-FMK	
	3.1b Common name, synonyms, etc.:		None.	
	3.1c CAS number and other unique identifiers:	3.1d EC number:	3.1e % Concentration:	3.1f Classification according to (EC) No. 1272/2008 {CLP}:
	None.	None.	100%	Not classified.
3.1g	Chemical identity of any impurity, stabilizing additive, or individual constituent other than the main constituent, which is itself classified and which contributes to the classification (such as product identifier, trade name, identification numbers):		None known.	
3.1h	Other information on the substance:		None.	

Section 4: First aid measures		
4.1	**Description of first aid measures:**	If concerned, get medical attention/advice and provide physician with SDS information. Wash contaminated clothing before re-use. Never give anything to an unconscious person.
4.1a	Inhalation:	Due to the small packaging the risk of inhalation is minimal. Remove to fresh air and keep at rest in a comfortable position for breathing. If not breathing, give artificial respiration. Rinse nose and mouth with water. Get medical attention if any discomfort continues.
4.1b	Skin contact:	Wash skin thoroughly with soap and water for several minutes; continue to rinse for at least 15 minutes. Remove any contaminated clothing and shoes and wash thoroughly before reuse. Get medical attention if any discomfort continues.
4.1c	Eye contact:	Promptly wash eyes with plenty of water while lifting the eyelids. Make sure to remove any contact lenses from the eyes before rinsing. Continue to rinse for at least 15 minutes. Get medical attention if any discomfort continues.
4.1d	Ingestion:	NEVER MAKE AN UNCONSCIOUS PERSON VOMIT OR DRINK FLUIDS! Rinse mouth thoroughly. Do not induce vomiting without advice from poison control center or medical professional. Get medical attention if any discomfort continues.
4.2	**Most important symptoms and effects, both acute and delayed:**	.
4.2a	Inhalation:	May cause coughing or mild irritation.
4.2b	Skin contact:	Prolonged skin contact may cause mild irritation.
4.2c	Eye contact:	May cause temporary eye irritation.
4.2d	Ingestion:	May cause discomfort if swallowed.
4.3	**Indication of any immediate medical attention and special treatment needed:**	No specific first aid measures noted, but first aid may still be required in case of accidental exposure, inhalation, or ingestion of this product. If in doubt, get medical attention promptly!
4.3a	Notes to physician/first responder:	Treat symptomatically. Refer to Sections 5-8 for advice on personal protective equipment.
Section 5: Firefighting measures		
5.1	**Extinguishing media:**	Use fire-extinguishing media appropriate for the surrounding materials.
5.1a	Suitable extinguishing media:	Water spray, foam, dry powder, or carbon dioxide.
5.1b	Unsuitable extinguishing media:	None known.
5.2	**Special hazards arising from the substance or mixture:**	Product is not explosive. No dangerous reactions known under normal conditions of use.
5.2a	Hazardous combustion products:	In case of fire, toxic gases may be formed of carbon monoxide (CO), carbon dioxide (CO2; COx). None under normal conditions.
5.2b	Unusual fire & explosion hazards:	No unusual fire or explosion hazards noted.
5.2c	Protective measures in fire:	Use protective equipment appropriate for surrounding materials.
5.3	**Advice for firefighters:**	Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.
5.3a	Special firefighting procedures:	No specific firefighting procedure given.
5.3b	Special protective equipment and precautions for firefighters:	Wear full protective clothing, including self-contained breathing apparatus, if necessary. The product presents no special fire hazards in normal use. Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.
Section 6: Accidental release measures		
6.1	**Personal precautions, protective equipment, and emergency procedures:**	Use protective equipment appropriate for surrounding materials.
6.1a	General release measures:	No specific emergency measures are required other than good laboratory hygiene and safety practices for small spills. Wear suitable protective clothing, gloves and eye or face protection. Consult professional emergency personnel if concerned (see Section 8).
6.1b	Advice for non-emergency personnel; personal precautions, protective equipment and emergency procedures:	No specific emergency measures are required other than good laboratory hygiene and safety practices. Wear suitable protective clothing/gloves/eye/face protection to avoid contact with skin, eyes, and personal clothing; use an approved supplied-air respirator, in case of emergency (also refer to Section 8). Remove all sources of ignition. Ensure adequate ventilation and control dust/mist. Avoid breathing vapors, mist, or gas. Evacuate personnel to safe areas. Wear suitable protective clothing, gloves and eye or face protection to prevent any contamination. Consult professional emergency personnel if concerned.
6.1c	Advice for emergency responders; personal precautions, protective equipment and emergency procedures:	Wear suitable protective clothing, gloves and eye or face protection to avoid contact; use an approved supplied-air respirator, in case of emergency (also refer to Section 8).

6.2	**Environmental precautions:**	Do not allow to enter drains, sewers, or watercourses.
6.3	**Methods and materials for containment and clean up:**	Contain any spills with dikes or absorbent materials to prevent migration and entry into sewers or water sources. Place in a suitable container for disposal in accordance with local waste regulations (see Section 13). Wash spill area thoroughly with plenty of soap and water. Avoid contact with skin or inhalation of spillage, dust, or vapour.
6.4	**Reference to other sections:**	Refer to Sections 8 and 13 for additional information.
Section 7: Handling and storage		
7.1	**Precautions for safe handling:**	Do not handle until all safety precautions have been read and understood. Avoid creation of aerosol/mist/dust. Avoid inhalation of vapors/mist/dust. Prevent contact with skin and eyes. Use appropriate personal protection equipment (PPE). Thoroughly wash hands and contaminated areas with water and soap before leaving the work site. Keep away from sources of ignition.
7.1a	Prevent handling of incompatible substances or mixtures:	Avoid contact with strong acids and strong oxidizers.
7.1b	Advice on general occupational hygiene:	Do not eat, drink, or smoke in work areas. Wash hands after use. Remove contaminated clothing and protective equipment before entering eating areas. Good personal hygiene is necessary. Follow good laboratory hygiene and safety practices.
7.2	**Conditions for safe storage, including any incompatibilities:**	Refer to product label. Store in cool place. Keep container tightly closed in a dry and well-ventilated place. Containers which are opened must be carefully resealed and kept upright to prevent leakage. Avoid spills and release into the environment; keep away from watercourses.
7.3	**Specific end use(s):**	For research use only. Not for use in diagnostic procedures.
Section 8: Exposure controls/personal protection		
8.1	**Control parameters:**	.
8.1a	Occupational exposure limits, such as chemical identity, standard, TWA-8 hours (time weighted average), STEL-15 minutes (short term exposure limit), etc.: WEL = Workplace Exposure Limit. Sk = can be absorbed through skin.	Not available.
8.1b	Appropriate engineering controls:	.
8.1c	Individual protection measures, such as personal protective equipment:	Wear gloves, protective goggles, and lab coat.
8.1d	Safety symbols:	
8.2	**Exposure controls:**	.
8.2a	Process conditions:	Provide eyewash station.
8.2b	Engineering controls:	Ensure that eyewash stations and safety showers are proximal to the workstation location.
8.2c	Ventilation controls:	Provide adequate ventilation.
8.2d	Reference to other sections:	Refer to Section 5 for additional information.
8.2e	Eye/face protection:	Wear approved chemical safety goggles where eye exposure is reasonably probable or face shield if risk of splashing.
8.2f	Skin protection:	Wear apron or protective clothing in case of contact.
8.2g	Hand protection:	Use suitable protective gloves if risk of skin contact.
8.2h	Respiratory equipment:	Where risk assessment shows air-purifying respirators are appropriate use a full-face respirator with multi-purpose combination (US) or type ABEK (EN 14387) respirator cartridges as a backup to engineering controls. If the respirator is the sole means of protection, use a full-face supplied air respirator. Use respirators and components tested and approved under appropriate government standards such as NIOSH (US) or CEN (EU).
8.2i	Other protection:	Wear appropriate clothing to avoid skin contact.
8.2j	Hygiene measures:	DO NOT SMOKE IN WORK AREA! Wash at the end of each work shift and before eating, smoking, and using the toilet. Promptly remove any clothing that becomes contaminated. Use appropriate skin cream to prevent drying of skin. When using do not eat, drink, or smoke. Wash promptly with soap and water if skin becomes contaminated
8.2k	Thermal hazards:	None known under normal conditions of use.
8.2l	Environmental exposure controls:	Not determined.

Section 9: Physical and chemical properties		
9.1	**Information on basic physical and chemical properties:**	.
9.1a	Appearance (physical state, color, etc.):	Powder, dust.
9.1b	Odor:	No characteristic odor.
9.1c	Odor threshold:	Not determined.
9.1d	pH:	Not determined.
9.1e	Melting point/freezing point (˚C):	Not determined.
9.1f	Initial boiling point and boiling range:	Not determined.
9.1g	Flash point (˚C):	Not applicable.
9.1h	Evaporation rate:	Not applicable
9.1i	Flammability (solid, gas):	Not determined.
9.1j	Upper/lower flammability or explosive limits:	Not determined.
9.1k	Vapor pressure:	Not applicable.
9.1l	Vapor density (Air =1):	Not applicable.
9.1m	Relative density:	Not determined.
9.1n	Solubility(ies):	Insoluble in water; soluble in organic solvents.
9.1o	Partition coefficient (N-octanol/water):	Not determined.
9.1p	Auto-ignition temperature (˚C):	Not determined.
9.1q	Decomposition temperature (˚C):	Not determined.
9.1r	Viscosity:	Not determined.
9.1s	Explosive properties:	Not determined.
9.1t	Oxidizing properties:	Not determined.
9.2	**Other information:**	None.
9.2a	Other physical or chemical parameters:	None.

Section 10: Stability and reactivity		
10.1	**Reactivity:**	No data available.
10.2	**Chemical stability:**	Stable under normal temperature conditions.
10.3	**Possibility of hazardous reactions:**	Hazardous polymerization: no data available.
10.4	**Conditions to avoid:**	To avoid product degradation, avoid exposure to high temperatures or direct sunlight or light.
10.5	**Incompatible materials:**	No data available.
10.6	**Hazardous decomposition products:**	None under normal conditions.

Section 11: Toxicological information		
11.1	**Information on toxicological effects:**	.
11.1a	Name:	SR-VAD-FMK
11.1b	Acute toxicity:	Not determined.
11.1c	Skin corrosion/irritation:	Not determined.
11.1d	Serious eye damage/irritation:	Not determined.
11.1e	Respiratory or skin sensitization:	Not determined.
11.1f	Germ cell mutagenicity:	Not determined.
11.1g	Carcinogenicity:	Not determined.
11.1h	Reproductive toxicity:	Not determined.
11.1i	STOT-single exposure:	Not determined.
11.1j	STOT-repeated exposure:	Not determined.
11.1k	Aspiration hazard:	Not determined.
11.1l	Information on the likely routes of exposure (inhalation, ingestion, skin and eye contact):	May enter by skin and/or eye contact; inhalation of vapors/mist/dust.
11.1m	Ingestion:	May cause discomfort if swallowed.
11.1n	Inhalation:	In high concentrations, dust may irritate throat and respiratory system and cause coughing
11.1o	Skin contact:	Dust may irritate skin.
11.1p	Eye contact:	Spray and dust in the eyes may cause irritation.
11.1q	Symptoms related to the physical, chemical and toxicological characteristics:	No specific symptoms noted.
11.1r	Delayed and immediate effects as well as chronic effects from short and long term exposure:	Not determined.
11.1s	Numerical measures of toxicity (such as acute toxicity estimates):	Not determined.
11.1t	Interactive effects:	Not determined.
11.1u	Absence of specific data:	Not applicable.
11.1v	Mixtures:	Not applicable.
11.1w	Mixture vs. substance information:	Not applicable.
11.1x	Classification by National Toxicity Program (NTP):	Not classified.
11.1y	Classification by International Agency for Research on Cancer (IARC):	Not classified.
11.1z	Classification by OSHA 13:	Not classified.
11.1ab	Other information:	None.

Section 12: Ecological information		
12.1	**Toxicity:**	.
12.1a	Name:	SR-VAD-FMK.
12.1b	Ecotoxicity (aquatic and terrestrial, where available):	Not determined.
12.2	**Persistence and degradability:**	There are no data on the degradability of this product.
12.3	**Bioaccumulative potential:**	No data available on bioaccumulation.
12.4	**Mobility in soil:**	No data available.
12.5	**Results of PBT and vPvB assessment:**	Not determined.
12.6	**Other adverse effects:**	No data available.
Section 13: Disposal considerations		
13.1	**Waste treatment methods:**	When handling waste, consideration should be made to the safety precautions applying to handling of the product.
13.1a	Description of waste residues and information on their safe handling and methods of disposal, including the disposal of any contaminated packaging:	Dispose of waste and residues in accordance with local authority requirements. For the safety of persons conducting disposal, recycling or reclamation activities, please refer to the information in Section 8 (exposure controls and personal protection) of the SDS.
Section 14: Transport information		
14.1	**UN number:**	Not applicable.
14.2	**UN proper shipping name:**	Not applicable.
14.3	**Transport hazard class(es):**	Not applicable.
14.4	**Packing group:**	Not applicable.
14.5	**Environmental hazards:**	.
14.5a	Is it environmentally dangerous according to UN Model Regulations (IMDG Code, ADR, RID, and ADN)?:	No.
14.5b	Is it a marine pollutant according to the IMDG code?:	No.
14.6	**Special precautions for user:**	None known.
14.7	**Transport in bulk according to Annex II of MARPOL and the IBC code:**	Not applicable.
14.7a	Other information:	The product is not considered a dangerous good for transport.
14.7b	Classification for other modes of transport:	Contact supplier.
Section 15: Regulatory information		
15.1	**Safety, health and environmental regulations/legislation specific for the substance or mixture:**	.
15.1a	Regional safety, health and environmental regulations specific for the product in question:	None known.
15.1b	USA SARA Components (such as 302/311/313):	Not listed.
15.1c	USA Massachusetts Right to Know:	Not listed.
15.1d	USA Pennsylvania Right to Know:	Not listed.
15.1e	USA New Jersey Right to Know:	Not listed.
15.1f	USA California Prop. 65 Components:	Not listed.
15.1g	EU Regulation 1907/2006 {REACH}:	.
15.1h	Annex XIV substances subject to authorization:	Not listed.
15.1i	Substances of very high concern:	Not listed.
15.1j	Approved code of practice:	Classification and labeling of substances and preparations dangerous for supply. Safety data sheets for substances and preparations.
15.1k	Guidance notes:	Workplace exposure limits EH40.
15.1l	EU legislation references:	(EC) No. 1272/2008 on the classification, labelling and packaging of substances and mixtures {CLP Regulation}. EC 830/2015. Regulation (EC) No 1907/2006 of the European Parliament and of the Council of 18 December 2006 concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH), establishing a European Chemicals Agency, amending Directive 1999/45/EC and repealing Council Regulation (EEC) No 793/93 and Commission Regulation (EC) No 1488/94 as well as Council Directive 76/769/EEC and Commission Directives 91/155/EEC, 93/67/EEC, 93/105/EC and 2000/21/EC, including amendments.
15.2	**Chemical safety assessment:**	Not required.
15.2a	Other regulatory information:	None.
Section 16: Other information		
16.1	**Other information:**	.
16.1a	Date of revision:	26-May-2017
16.1b	SDS number and revision:	F17-678-4-D
16.1c	Supersedes SDS number and revision:	F17-678-4-C

16.1d	Changes made to the previous version of the SDS:	Reviewed and updated document control numbers.
16.1e	Key/legend to abbreviations and acronyms used in the SDS:	ACGIH American Conference of Governmental Industrial Hygienists. ADN European Provisions concerning the International Carriage of Dangerous Goods by Inland Waterway. ADR The European Agreement concerning the International Carriage of Dangerous Goods by Road. ATE Acute Toxicity Estimate. BCF Bio Concentration Factor. CAS Chemical Abstracts Service. CLP Classification, Labelling and Packaging. CMR Carcinogen, Mutagen or Reproductive toxicant. COD Chemical Oxygen Demand. EC European Commission. EC50 Half maximal effective concentration. EH40 Resource containing the list of workplace exposure limits for use with the Control of Substances Hazardous to Health Regulations. EINECS European Inventory of Existing Commercial chemical Substances. ELINCS European List of Notified Chemical Substances. EU European Union. GHS Globally Harmonized System of Classification and Labelling of Chemicals. H Statement GHS Hazard statement. IATA International Air Transport Association. IBC Intermediate Bulk Container. IC50 Half maximal inhibitory concentration. IMDG International Maritime Dangerous Goods. LC50 Median lethal concentration. LD50 Median lethal dose. LogPow logarithm of the octanol/water partition coefficient. MARPOL 73/78 International Convention for the Prevention of Pollution From Ships, 1973 as modified by the Protocol of 1978. OEL Occupational Exposure Limit. OSHA Occupational Safety and Health Administration (USA). PBT Persistent, Bioaccumulative, and Toxic. PEL Permissible Exposure Limit. RID The Regulations concerning the International Carriage of Dangerous Goods by Rail. SADT Self-Accelerating Decomposition Temperature. SARA Superfund Amendments and Reauthorization Act. SCBA Self-Contained Breathing Apparatus. SDS Safety Data Sheet. STOT Specific Target Organ Toxicity. STOT-RE Specific Target Organ Toxicity - Repeated Exposure. STOT-SE Specific Target Organ Toxicity - Single Exposure. UN United Nations. USA United States of America. vPvB very Persistent very bioaccumulative.
16.1f	Full text of hazard statements and/or precautionary statements not written out in full elsewhere:	All statements were written out in full.
DISCLAIMER:	**This information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process. Such information is, to the best of the company's knowledge and belief, accurate and reliable as of the date indicated. However, no warranty guarantee or representation is made to its accuracy, reliability, or completeness. It is the user's responsibility to satisfy himself as to the suitability of such information for his own particular use.**	

END OF SDS

ImmunoChemistry TECHNOLOGIES LLC

SAFETY DATA SHEET (SDS)

according to Regulation (EC) No. 830/2015 amending 1907/2006

Section 1: Identification of the substance/mixture and of the company/undertaking

1.1	**Product identifier:**		10X Apoptosis Wash Buffer
1.1a	Other means of identification:		.
1.1b		Alternative product name(s)/ synonyms:	10X AWB, AWB, Apoptosis Wash Buffer
1.1c		Product number/Catalog #(s):	535, 634, 635
1.1d		Internal identification:	10X AWB, AWB, Apoptosis Wash Buffer
1.2	**Relevant identified uses of the substance or mixture and uses advised against:**		For research use only. Not for use in diagnostic procedures.
1.2a	Brief description of what the substance or mixture is intended to do:		A buffered diluent for use in research laboratory techniques.
1.3	**Details of the supplier of the SDS:**		.
1.3a		Name:	ImmunoChemistry Technologies, LLC (ICT)
1.3b		Address:	9401 James Avenue South, Suite 155
1.3c		City, State, Zip, Country	Bloomington, MN 55431-2500 USA
1.3d		Phone number:	1-800-829-3194 and 952-888-8788
1.3e		Fax number:	952-888-8988
1.3f		Website:	www.immunochemistry.com
1.3g		Email:	help@immunochemistry.com
1.3h		Contact person at ICT:	Quality Documentation Department
1.4	**Emergency telephone number:**		ICT: 1-800-829-3194 (USA & Canada) or 952-888-8788 world wide; ICT hours are 9 am-5 pm central time USA, Monday through Friday (excluding holidays). Chemtrec 24-hour access within USA and Canada: 1-800-424-9300 or +1 703-527-3887. Collect calls accepted.

Section 2: Hazards identification

2.1	**Classification of the substance or mixture:**		.
2.1a	Product is a:		Mixture.
2.1b	Classification according to (EC) No. 1272/2008 {CLP}:		Does not meet the criteria for classification.
2.1c	The most important adverse physiochemical, human health, and environmental effects:		Prolonged skin contact may cause redness and irritation. Refer to Sections 4, 9-12.
2.2	**Label elements:**		None.
2.2a	GHS label elements, including precautionary statements:		.
2.2b		Contains:	Contains ≤0.1% sodium azide.
2.2c	Labeling in accordance with (EC) No. 1272/2008:		.
2.2d	Hazard Pictograms (Hazard Symbols):		None.
2.2e	Signal word:		None.
2.2f	Hazard statements:		None.
2.2g	Precautionary statements:		None.
2.2h	Supplementary precaution statements:		None.
2.3	**Other hazards:**		No additional information available.
2.3a	Does the chemical meet the criteria for PBT or vPvB?		Not applicable.
2.3b	Other hazards which do not result in classification:		Contains sodium azide (NaN_3, CAS #26628-22-8; EC #247-852-1) at ≤0.1%, sodium chloride (NaCl, salt), and phosphates which are below the threshold for hazard classification, but may cause redness and irritation after prolonged exposure.

Section 3: Composition/information on ingredients

3.1	**Substance:**		Item is a mixture therefore Section 3.1 is not applicable; see Section 3.2.
3.2	**Mixture:** The chemical identity and concentration or concentration ranges of all ingredients which are hazardous and are present above their cut-off levels:		Item is a mixture.
	3.2a Chemical identity:		No ingredients identified for reporting in this section.

Section 4: First aid measures

4.1	**Description of first aid measures:**		If concerned, get medical attention/advice and provide physician with SDS information. Wash contaminated clothing before re-use. Never give anything to an unconscious person.

4.1a	Inhalation:	Remove to fresh air and keep at rest in a comfortable position for breathing. If not breathing, give artificial respiration. Rinse nose and mouth with water. Get medical attention if any discomfort continues.
4.1b	Skin contact:	Wash skin thoroughly with soap and water for several minutes; continue to rinse for at least 15 minutes. Remove any contaminated clothing and shoes and wash thoroughly before reuse. Get medical attention if any discomfort continues.
4.1c	Eye contact:	Promptly wash eyes with plenty of water while lifting the eyelids. Make sure to remove any contact lenses from the eyes before rinsing. Continue to rinse for at least 15 minutes. Get medical attention if any discomfort continues.
4.1d	Ingestion:	NEVER MAKE AN UNCONSCIOUS PERSON VOMIT OR DRINK FLUIDS! Rinse mouth thoroughly. Do not induce vomiting without advice from poison control center or medical professional. Get medical attention if any discomfort continues.
4.2	**Most important symptoms and effects, both acute and delayed:**	Contains sodium azide, sodium chloride, and phosphates which are below the threshold for hazard classification, but may cause redness and irritation after prolonged exposure.
4.2a	Inhalation:	May cause coughing or mild irritation.
4.2b	Skin contact:	Prolonged skin contact may cause redness and mild irritation.
4.2c	Eye contact:	May cause temporary eye irritation.
4.2d	Ingestion:	May cause discomfort if swallowed.
4.3	**Indication of any immediate medical attention and special treatment needed:**	No specific first aid measures noted, but first aid may still be required in case of accidental exposure, inhalation, or ingestion of this product. If in doubt, get medical attention promptly!
4.3a	Notes to physician/first responder:	Treat symptomatically. Refer to Sections 5-8 for advice on personal protective equipment.
Section 5: Firefighting measures		
5.1	**Extinguishing media:**	This product is not flammable. Use fire-extinguishing media appropriate for the surrounding materials.
5.1a	Suitable extinguishing media:	Water spray, foam, dry powder, or carbon dioxide.
5.1b	Unsuitable extinguishing media:	None known.
5.2	**Special hazards arising from the substance or mixture:**	This product is not flammable. Product is not explosive. No dangerous reactions known under normal conditions of use.
5.2a	Hazardous combustion products:	None under normal conditions.
5.2b	Unusual fire & explosion hazards:	No unusual fire or explosion hazards noted.
5.2c	Protective measures in fire:	Use protective equipment appropriate for surrounding materials.
5.3	**Advice for firefighters:**	Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.
5.3a	Special firefighting procedures:	No specific firefighting procedure given.
5.3b	Special protective equipment and precautions for firefighters:	Wear full protective clothing, including self-contained breathing apparatus, if necessary. The product presents no special fire hazards in normal use. Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.
Section 6: Accidental release measures		
6.1	**Personal precautions, protective equipment, and emergency procedures:**	Use protective equipment appropriate for surrounding materials.
6.1a	General release measures:	No specific emergency measures are required other than good laboratory hygiene and safety practices for small spills. Wear suitable protective clothing, gloves and eye or face protection. Consult professional emergency personnel if concerned (see Section 8).
6.1b	Advice for non-emergency personnel; personal precautions, protective equipment and emergency procedures:	No specific emergency measures are required other than good laboratory hygiene and safety practices. Wear suitable protective clothing/gloves/eye/face protection to avoid contact with skin, eyes, and personal clothing; use an approved supplied-air respirator, in case of emergency (also refer to Section 8). Remove all sources of ignition. Ensure adequate ventilation and control dust/mist. Avoid breathing vapors, mist, or gas. Evacuate personnel to safe areas. Wear suitable protective clothing, gloves and eye or face protection to prevent any contamination. Consult professional emergency personnel if concerned.
6.1c	Advice for emergency responders; personal precautions, protective equipment and emergency procedures:	Wear suitable protective clothing, gloves and eye or face protection to avoid contact; use an approved supplied-air respirator, in case of emergency (also refer to Section 8).
6.2	**Environmental precautions:**	Do not allow to enter drains, sewers, or watercourses.
6.3	**Methods and materials for containment and clean up:**	Contain any spills with dikes or absorbent materials to prevent migration and entry into sewers or water sources. Place in a suitable container for disposal in accordance with local waste regulations (see

		Section 13). Wash spill area thoroughly with plenty of soap and water. Avoid contact with skin or inhalation of spillage, dust, or vapour.
6.4	**Reference to other sections:**	Refer to Sections 8 and 13 for additional information.
Section 7: Handling and storage		
7.1	**Precautions for safe handling:**	Do not handle until all safety precautions have been read and understood. Avoid creation of aerosol/mist/dust. Avoid inhalation of vapors/mist/dust. Prevent contact with skin and eyes. Use appropriate personal protection equipment (PPE). Thoroughly wash hands and contaminated areas with water and soap before leaving the work site. Keep away from sources of ignition.
7.1a	Prevent handling of incompatible substances or mixtures:	Avoid contact with halogenated hydrocarbons, strong acids, strong oxidizers, and metals.
7.1b	Advice on general occupational hygiene:	Do not eat, drink, or smoke in work areas. Wash hands after use. Remove contaminated clothing and protective equipment before entering eating areas. Good personal hygiene is necessary. Follow good laboratory hygiene and safety practices.
7.2	**Conditions for safe storage, including any incompatibilities:**	Store in cool place. Keep container tightly closed in a dry and well-ventilated place. Containers which are opened must be carefully resealed and kept upright to prevent leakage. Avoid spills and release into the environment; keep away from watercourses.
7.3	**Specific end use(s):**	For research use only. Not for use in diagnostic procedures.
Section 8: Exposure controls/personal protection		
8.1	**Control parameters:**	.
8.1a	Occupational exposure limits, such as chemical identity, standard, TWA-8 hours (time weighted average), STEL-15 minutes (short term exposure limit), etc.: WEL = Workplace Exposure Limit. Sk = can be absorbed through skin.	Not available.
8.1b	Appropriate engineering controls:	.
8.1c	Individual protection measures, such as personal protective equipment:	Wear gloves. Wear protective goggles.
8.1d	Safety symbols:	
8.2	**Exposure controls:**	.
8.2a	Process conditions:	Provide eyewash station.
8.2b	Engineering controls:	Ensure that eyewash stations and safety showers are proximal to the workstation location.
8.2c	Ventilation controls:	Provide adequate ventilation.
8.2d	Reference to other sections:	Refer to Section 5 for additional information.
8.2e	Eye/face protection:	Wear approved chemical safety goggles where eye exposure is reasonably probable or face shield if risk of splashing.
8.2f	Skin protection:	Wear apron or protective clothing in case of contact.
8.2g	Hand protection:	Use suitable protective gloves if risk of skin contact.
8.2h	Respiratory equipment:	Where risk assessment shows air-purifying respirators are appropriate use a full-face respirator with multi-purpose combination (US) or type ABEK (EN 14387) respirator cartridges as a backup to engineering controls. If the respirator is the sole means of protection, use a full-face supplied air respirator. Use respirators and components tested and approved under appropriate government standards such as NIOSH (US) or CEN (EU).
8.2i	Other protection:	Wear appropriate clothing to avoid skin contact.
8.2j	Hygiene measures:	DO NOT SMOKE IN WORK AREA! Wash at the end of each work shift and before eating, smoking, and using the toilet. Promptly remove any clothing that becomes contaminated. Use appropriate skin cream to prevent drying of skin. When using do not eat, drink, or smoke. Wash promptly with soap and water if skin becomes contaminated
8.2k	Thermal hazards:	None known under normal conditions of use.
8.2l	Environmental exposure controls:	Not determined.
Section 9: Physical and chemical properties		
9.1	**Information on basic physical and chemical properties:**	.
9.1a	Appearance (physical state, color, etc.):	Liquid; colorless.
9.1b	Odor:	No characteristic odor.
9.1c	Odor threshold:	Not determined.

9.1d	pH:	6.7-7.1
9.1e	Melting point/freezing point (˚C):	Not determined.
9.1f	Initial boiling point and boiling range:	<100°C @ 760 mm Hg.
9.1g	Flash point (˚C):	Not applicable.
9.1h	Evaporation rate:	Not determined.
9.1i	Flammability (solid, gas):	Not applicable.
9.1j	Upper/lower flammability or explosive limits:	Not applicable.
9.1k	Vapor pressure:	Not determined.
9.1l	Vapor density (Air =1):	Not determined.
9.1m	Relative density:	Not determined.
9.1n	Solubility(ies):	Soluble in water.
9.1o	Partition coefficient (N-octanol/water):	Not determined.
9.1p	Auto-ignition temperature (˚C):	Not determined.
9.1q	Decomposition temperature (˚C):	Not determined.
9.1r	Viscosity:	Not determined.
9.1s	Explosive properties:	Not determined.
9.1t	Oxidizing properties:	Not determined.
9.2	**Other information:**	None.
9.2a	Other physical or chemical parameters:	None.

Section 10: Stability and reactivity

10.1	**Reactivity:**	No data available.
10.2	**Chemical stability:**	Stable under normal temperature conditions.
10.3	**Possibility of hazardous reactions:**	Hazardous polymerization: will not polymerize.
10.4	**Conditions to avoid:**	To avoid product degradation, avoid exposure to high temperatures or direct sunlight or light.
10.5	**Incompatible materials:**	Avoid contact with halogenated hydrocarbons, strong acids, strong oxidizers, and metals.
10.6	**Hazardous decomposition products:**	None under normal conditions.

Section 11: Toxicological information

11.1	**Information on toxicological effects:**	.
11.1a	Name:	10X Apoptosis Wash Buffer
11.1b	Acute toxicity:	Not determined.
11.1c	Skin corrosion/irritation:	Not determined.
11.1d	Serious eye damage/irritation:	Not determined.
11.1e	Respiratory or skin sensitization:	Not determined.
11.1f	Germ cell mutagenicity:	Not determined.
11.1g	Carcinogenicity:	Not determined.
11.1h	Reproductive toxicity:	Not determined.
11.1i	STOT-single exposure:	Not determined.
11.1j	STOT-repeated exposure:	Not determined.
11.1k	Aspiration hazard:	Not determined.
11.1l	Information on the likely routes of exposure (inhalation, ingestion, skin and eye contact):	May enter by skin and/or eye contact; inhalation of vapors/mist/dust.
11.1m	Ingestion:	May cause discomfort if swallowed.
11.1n	Inhalation:	In high concentrations, vapors may irritate throat and respiratory system and cause coughing.
11.1o	Skin contact:	Liquid may irritate skin and cause redness.
11.1p	Eye contact:	Spray and vapor in the eyes may cause irritation and smarting.
11.1q	Symptoms related to the physical, chemical and toxicological characteristics:	No specific symptoms noted.
11.1r	Delayed and immediate effects as well as chronic effects from short and long term exposure:	Not determined.
11.1s	Numerical measures of toxicity (such as acute toxicity estimates):	Not determined.
11.1t	Interactive effects:	Not determined.
11.1u	Absence of specific data:	Not applicable.
11.1v	Mixtures:	Item is a mixture.
11.1w	Mixture vs. substance information:	See Section 3 for any substances in the mixture.
11.1x	Classification by National Toxicity Program (NTP):	Not classified.
11.1y	Classification by International Agency for Research on Cancer (IARC):	Not classified.
11.1z	Classification by OSHA 13:	Not classified.
11.1ab	Other information:	None.

Section 12: Ecological information

12.1	**Toxicity:**	.

12.1a	Name:	10X Apoptosis Wash Buffer.
12.1b	Ecotoxicity (aquatic and terrestrial, where available):	No data available.
12.2	**Persistence and degradability:**	There are no data on the degradability of this product.
12.3	**Bioaccumulative potential:**	No data available on bioaccumulation.
12.4	**Mobility in soil:**	The product is soluble in water.
12.5	**Results of PBT and vPvB assessment:**	Not determined.
12.6	**Other adverse effects:**	The product contains a substance (sodium azide ≤0.1%) that may cause long term adverse effects in the aquatic environment. However, at the concentrations present, this product does not need to be classified as hazardous for the environment, and the effects are not expected to be significant.
Section 13: Disposal considerations		
13.1	**Waste treatment methods:**	When handling waste, conisderation should be made to the safety precautions applying to handling of the product.
13.1a	Description of waste residues and information on their safe handling and methods of disposal, including the disposal of any contaminated packaging:	Dispose of waste and residues in accordance with local authority requirements. For the safety of persons conducting disposal, recycling or reclamation activities, please refer to the information in Section 8 (exposure controls and personal protection) of the SDS.
Section 14: Transport information		
14.1	**UN number:**	Not applicable.
14.2	**UN proper shipping name:**	Not applicable.
14.3	**Transport hazard class(es):**	Not applicable.
14.4	**Packing group:**	Not applicable.
14.5	**Environmental hazards:**	The product contains a substance (sodium azide ≤0.1%) that may cause long term adverse effects in the aquatic environment. However, at the concentrations present, this product does not need to be classified as hazardous for the environment, and the effects are not expected to be significant.
14.5a	Is it environmentally dangerous according to UN Model Regulations (IMDG Code, ADR, RID, and ADN)?:	No.
14.5b	Is it a marine pollutant according to the IMDG code?:	No.
14.6	**Special precautions for user:**	None known.
14.7	**Transport in bulk according to Annex II of MARPOL and the IBC code:**	Not applicable.
14.7a	Other information:	The product is not considered a dangerous good for transport.
14.7b	Classification for other modes of transport:	Contact supplier.
Section 15: Regulatory information		
15.1	**Safety, health and environmental regulations/legislation specific for the substance or mixture:**	.
15.1a	Regional safety, health and environmental regulations specific for the product in question:	.
15.1b	USA SARA Components (such as 302/311/313):	Sodium azide (CAS # 26628-22-8) is listed under 302, 304, 313.
15.1c	USA Massachusetts Right to Know:	Sodium azide (CAS # 26628-22-8) is listed.
15.1d	USA Pennsylvania Right to Know:	Sodium azide (CAS # 26628-22-8) is listed.
15.1e	USA New Jersey Right to Know:	Sodium azide (CAS # 26628-22-8) is listed.
15.1f	USA California Prop. 65 Components:	Not listed.
15.1g	EU Regulation 1907/2006 {REACH}:	.
15.1h	Annex XIV substances subject to authorization:	Not listed.
15.1i	Substances of very high concern:	Not listed.
15.1j	Approved code of practice:	Classification and labeling of substances and preparations dangerous for supply. Safety data sheets for substances and preparations.
15.1k	Guidance notes:	Workplace exposure limits EH40.
15.1l	EU legislation references:	(EC) No. 1272/2008 on the classification, labelling and packaging of substances and mixtures {CLP Regulation}. EC 830/2015. Regulation (EC) No 1907/2006 of the European Parliament and of the Council of 18 December 2006 concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH), establishing a European Chemicals Agency, amending Directive 1999/45/EC and repealing Council Regulation (EEC) No 793/93 and Commission Regulation (EC) No 1488/94 as well as Council Directive 76/769/EEC and Commission Directives 91/155/EEC, 93/67/EEC, 93/105/EC and 2000/21/EC, including amendments.
15.2	**Chemical safety assessment:**	Not required.
15.2a	Other regulatory information:	None.

Section 16: Other information		
16.1	**Other information:**	.
16.1a	Date of revision:	19-May-2017
16.1b	SDS number and revision:	F17-535-2-C
16.1c	Supersedes SDS number and revision:	F17-535-2-B
16.1d	Changes made to the previous version of the SDS:	Reviewed and updated document control numbers.
16.1e	Key/legend to abbreviations and acronyms used in the SDS:	ACGIH American Conference of Governmental Industrial Hygienists. ADN European Provisions concerning the International Carriage of Dangerous Goods by Inland Waterway. ADR The European Agreement concerning the International Carriage of Dangerous Goods by Road. ATE Acute Toxicity Estimate. BCF Bio Concentration Factor. CAS Chemical Abstracts Service. CLP Classification, Labelling and Packaging. CMR Carcinogen, Mutagen or Reproductive toxicant. COD Chemical Oxygen Demand. EC European Commission. EC50 Half maximal effective concentration. EH40 Resource containing the list of workplace exposure limits for use with the Control of Substances Hazardous to Health Regulations. EINECS European Inventory of Existing Commercial chemical Substances. ELINCS European List of Notified Chemical Substances. EU European Union. GHS Globally Harmonized System of Classification and Labelling of Chemicals. H Statement GHS Hazard statement. IATA International Air Transport Association. IBC Intermediate Bulk Container. IC50 Half maximal inhibitory concentration. IMDG International Maritime Dangerous Goods. LC50 Median lethal concentration. LD50 Median lethal dose. LogPow logarithm of the octanol/water partition coefficient. MARPOL 73/78 International Convention for the Prevention of Pollution From Ships, 1973 as modified by the Protocol of 1978. OEL Occupational Exposure Limit. OSHA Occupational Safety and Health Administration (USA). PBT Persistent, Bioaccumulative, and Toxic. PEL Permissible Exposure Limit. RID The Regulations concerning the International Carriage of Dangerous Goods by Rail. SADT Self-Accelerating Decomposition Temperature. SARA Superfund Amendments and Reauthorization Act. SCBA Self-Contained Breathing Apparatus. SDS Safety Data Sheet. STOT Specific Target Organ Toxicity. STOT-RE Specific Target Organ Toxicity - Repeated Exposure. STOT-SE Specific Target Organ Toxicity - Single Exposure. UN United Nations. USA United States of America. vPvB very Persistent very bioaccumulative.
16.1f	Full text of hazard statements and/or precautionary statements not written out in full elsewhere:	All statements were written out in full.

DISCLAIMER:	**This information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process. Such information is, to the best of the company's knowledge and belief, accurate and reliable as of the date indicated. However, no warranty guarantee or representation is made to its accuracy, reliability, or completeness. It is the user's responsibility to satisfy himself as to the suitability of such information for his own particular use.**

END OF SDS

ImmunoChemistry TECHNOLOGIES LLC

SAFETY DATA SHEET (SDS)

according to Regulation (EC) No. 830/2015 amending 1907/2006

Section 1: Identification of the substance/mixture and of the company/undertaking

1.1	**Product identifier:**		Fixative
1.1a	Other means of identification:		.
1.1b		Alternative product name(s)/ synonyms:	Fixative, Fix
1.1c		Product number/Catalog #(s):	536, 636
1.1d		Internal identification:	Fixative, Fix
1.2	**Relevant identified uses of the substance or mixture and uses advised against:**		For research use only. Not for use in diagnostic procedures.
1.2a	Brief description of what the substance or mixture is intended to do:		Laboratory reagent to preserve cells.
1.3	**Details of the supplier of the SDS:**		.
1.3a		Name:	ImmunoChemistry Technologies, LLC (ICT)
1.3b		Address:	9401 James Avenue South, Suite 155
1.3c		City, State, Zip, Country	Bloomington, MN 55431-2500 USA
1.3d		Phone number:	1-800-829-3194 and 952-888-8788
1.3e		Fax number:	952-888-8988
1.3f		Website:	www.immunochemistry.com
1.3g		Email:	help@immunochemistry.com
1.3h		Contact person at ICT:	Quality Documentation Department
1.4	**Emergency telephone number:**		ICT: 1-800-829-3194 (USA & Canada) or 952-888-8788 world wide; ICT hours are 9 am-5 pm central time USA, Monday through Friday (excluding holidays). Chemtrec 24-hour access within USA and Canada: 1-800-424-9300 or +1 703-527-3887. Collect calls accepted.

Section 2: Hazards identification

2.1	**Classification of the substance or mixture:**	.
2.1a	Product is a:	Mixture.
2.1b	Classification according to (EC) No. 1272/2008 {CLP}:	Flammable Liquids, (Category 4) (USA Only). H302 Acute toxicity, Oral (Category 4). H312 Acute toxicity, Dermal (Category 4). H315 Skin Irritation, (Category 2). H319 Eye Irritation, (Category 2). H317 Skin sensitisation (Category 1). H341 Germ cell mutagenicity (Category 2). H350 Carcinogenicity (Category 1B). H371 Specific Target Organ Toxicity - Single Exposure (Category 2). H335 Specific Target Organ Toxicity - Single Exposure (Category 3) - Respiratory Tract.
2.1c	The most important adverse physiochemical, human health, and environmental effects:	Direct contact with liquid may cause immediate harm to skin, mouth, and eyes. Refer to Sections 4, 9-12.
2.2	**Label elements:**	.
2.2a	GHS label elements, including precautionary statements:	.
2.2b	Contains:	Formaldehyde <10%; and Methanol <5%.
2.2c	Labeling in accordance with (EC) No. 1272/2008:	.
2.2d	Hazard Pictograms (Hazard Symbols):	  GHS07 Exclamation mark. GHS08 Health hazard.
2.2e	Signal word:	Danger.
2.2f	Hazard statements:	H227 Combustible liquids. H302 Harmful if swallowed. H312 Harmful if in contact with skin. H319 Causes serious eye irritation. H315 Causes skin irritation. H317 May cause an allergic skin reaction. H350 May cause cancer. H341 Suspected of causing genetic defects. H371 May cause damage to organs. H335 May cause respiratory irritation.
2.2g	Precautionary statements:	P201 Obtain special instructions before use. P280 Wear protective gloves/ protective clothing/ eye protection/ face protection. P301 + P312 + P330 IF SWALLOWED: Call a POISON CENTER or doctor/ physician if you feel unwell. Rinse mouth.

		P308 + P313 IF exposed or concerned: Get medical advice/ attention. P333 + P313 If skin irritation or rash occurs: Get medical advice/ attention.
2.2h	Supplementary precaution statements:	P270 Do not eat, drink or smoke when using this product. P261 Avoid breathing mist/vapors/spray. P272 Contaminated work clothing should not be allowed out of the workplace. P312 Call a poison center or doctor if you feel unwell. P321 Specific treatment (see on this label). P322 Specific measures (see on this label). P330 Rinse mouth. P362 Take off contaminated clothing. P363 Wash contaminated clothing before reuse. P501 Dispose of contents/containers in accordance with local regulations. P302+P352 If on skin: Wash with plenty of soap and water. P304+P340 If inhaled: Remove victim to fresh air and keep at rest in a position comfortable for breathing. P305+P351+P338 If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
2.3	**Other hazards:**	No additional information available.
2.3a	Does the chemical meet the criteria for PBT or vPvB?	Not applicable.
2.3b	Other hazards which do not result in classification:	Not known.

Section 3: Composition/information on ingredients

3.1	**Substance:**		Item is a mixture therefore Section 3.1 is not applicable; see Section 3.2.	
3.2	**Mixture:** The chemical identity and concentration or concentration ranges of all ingredients which are hazardous and are present above their cut-off levels:		Item is a mixture.	
	3.2a Chemical identity:		Formaldehyde	
	3.2b Common name, synonyms, etc.:		CH_2O; Index# 605-001-00-5	
	3.2c CAS number and other unique identifiers:	3.2d EC number:	3.2e % Concentration:	3.2f Classification according to (EC) No. 1272/2008 {CLP}:
	50-00-0	200-001-8	<10%	H301 Toxic if swallowed. H311 Toxic in contact with skin. H331 Toxic if inhaled. Acute Tox. 3. H314 Causes severe skin burns and eye damage. Skin Corr. 1B. H318 Causes serious eye damage. Eye Dam. 1. H317 May cause an allergic skin reaction. Skin Sens. 1. H341 Suspected of causing genetic defects. Muta. 2. H350 May cause cancer. Carc. 1B. H335 May cause respiratory irritation. STOT SE 3.
3.2g	Other ingredient:		.	
	3.2h Chemical identity:		Methanol	
	3.2i Common name, synonyms, etc.:		CH_4O; Index # 603-001-00-X	
	3.2j CAS number and other unique identifiers:	3.2k EC number:	3.2l % Concentration:	3.2m Classification according to (EC) No. 1272/2008 {CLP}:
	67-56-1	200-659-6	<5%	H225 Highly flammable liquid and vapor. Flam. Liq. 2. H301 Toxic if swallowed. H311 Toxic in contact with skin. H331 Toxic if inhaled. Acute Tox. 3. H370 Causes damage to organs. STOT SE 1.

Section 4: First aid measures

4.1	**Description of first aid measures:**	Consult with a physician and provide SDS information. If exposed or concerned, get medical attention/advice. Wash contaminated clothing before re-use. Never give anything to an unconscious person. First aid responders should wear gloves/skin protection to avoid contact with product.
4.1a	Inhalation:	Remove to fresh air and keep at rest in a comfortable position for breathing. If not breathing, give artificial respiration. Rinse nose and mouth with water. Get medical attention.
4.1b	Skin contact:	Remove affected clothing/shoes and immediately wash all exposed skin with soap and water for at least 15 minutes. Take victim immediately to hospital. Get medical attention.
4.1c	Eye contact:	Get medical attention immediately. Promptly wash eyes with plenty of water while lifting the eyelids. Make sure to remove any contact lenses from the eyes before rinsing. Continue to rinse for at least 15 minutes.
4.1d	Ingestion:	Get medical attention immediately and if any discomfort continues. NEVER MAKE AN UNCONSCIOUS PERSON VOMIT OR DRINK FLUIDS! Rinse mouth thoroughly. Do not induce vomiting without advice from poison control center or medical professional.
4.2	**Most important symptoms and effects, both acute and delayed:**	Also refer to Sections 2 and 11 for most important known symptoms and effects.
4.2a	Inhalation:	May cause respiratory irritation.

4.2b	Skin contact:	Harmful in contact with skin. Causes skin irritation. May cause an allergic skin reaction.
4.2c	Eye contact:	Causes serious eye irritation.
4.2d	Ingestion:	Harmful if swallowed.
4.3	**Indication of any immediate medical attention and special treatment needed:**	Get medical attention immediately.
4.3a	Notes to physician/first responder:	Treat symptomatically. Refer to Sections 5-8 for advice on personal protective equipment.
Section 5: Firefighting measures		
5.1	**Extinguishing media:**	Use fire-extinguishing media appropriate for the surrounding materials.
5.1a	Suitable extinguishing media:	Use water spray, alcohol-resistant foam, dry chemical, or carbon dioxide.
5.1b	Unsuitable extinguishing media:	None known.
5.2	**Special hazards arising from the substance or mixture:**	.
5.2a	Hazardous combustion products:	None under normal conditions.
5.2b	Unusual fire & explosion hazards:	No unusual fire or explosion hazards noted.
5.2c	Protective measures in fire:	Use protective equipment appropriate for surrounding materials. Do not enter fire area without proper protective equipment, including respiratory protection. Wear self-contained breathing apparatus and protective suit (see Section 8).
5.3	**Advice for firefighters:**	Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.
5.3a	Special firefighting procedures:	Use water spray or fog for cooling exposed containers. Exercise caution when fighting any chemical fire. Do not dispose of fire-fighting water in the environment.
5.3b	Special protective equipment and precautions for firefighters:	Wear full protective clothing, including self-contained breathing apparatus, if necessary. Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.
Section 6: Accidental release measures		
6.1	**Personal precautions, protective equipment, and emergency procedures:**	Use protective equipment appropriate for surrounding materials and to avoid contamination.
6.1a	General release measures:	No specific emergency measures are required other than good laboratory hygiene and safety practices for small spills. Wear suitable protective clothing, gloves and eye or face protection to prevent any contamination. Consult professional emergency personnel for large spills.
6.1b	Advice for non-emergency personnel; personal precautions, protective equipment and emergency procedures:	Wear suitable protective clothing/gloves/eye/face protection to prevent any contamination of skin, eyes, and personal clothing; use an approved supplied-air respirator, in case of emergency (also refer to Section 8). Remove all sources of ignition. Ensure adequate ventilation and control dust/mist. Avoid breathing vapors, mist, or gas. Evacuate personnel to safe areas. Wear suitable protective clothing, gloves and eye or face protection to prevent any contamination. Consult professional emergency personnel for large spills or if concerned.
6.1c	Advice for emergency responders; personal precautions, protective equipment and emergency procedures:	Wear suitable protective clothing, gloves and eye or face protection to prevent any contamination; use an approved supplied-air respirator, in case of emergency (also refer to Section 8).
6.2	**Environmental precautions:**	Do not allow to enter drains, surface, and ground water, sewers, or watercourses.
6.3	**Methods and materials for containment and clean up:**	Contain any spills with dikes or absorbent materials to prevent migration and entry into sewers or water sources. Place in a suitable container for disposal in accordance with local waste regulations (see Section 13). Wash spill area thoroughly with plenty of soap and water. Avoid contact with skin or inhalation of spillage, dust, or vapor
6.4	**Reference to other sections:**	Refer to Sections 8 and 13 for additional information.
Section 7: Handling and storage		
7.1	**Precautions for safe handling:**	Do not handle until all safety precautions have been read and understood. Avoid creation of aerosol/mist/dust. Avoid inhalation of vapors/mist/dust. Prevent contact with skin and eyes. Use appropriate personal protection equipment (PPE). Thoroughly wash hands and contaminated areas with water and soap before leaving the work site. Keep away from sources of ignition.
7.1a	Prevent handling of incompatible substances or mixtures:	Avoid contact with strong acids and strong oxidizing substances. Incompatible with strong bases, strong acids, strong oxidizing agents, alkali metals, amines, acid chlorides, acid anhydrides, reducing agents, peroxides, isocyanates, phenol, aniline.
7.1b	Advice on general occupational hygiene:	Do not eat, drink, or smoke in work areas. Wash hands after use. Remove contaminated clothing and protective equipment before entering eating areas. Good personal hygiene is necessary. Follow good laboratory hygiene and safety practices.
7.2	**Conditions for safe storage, including any incompatibilities:**	Refer to product label for storage. Store in cool place. Keep container tightly closed in a dry and well-ventilated place. Containers which are opened must be carefully resealed and kept upright to prevent leakage.

		Avoid spills and release into the environment; keep away from watercourses.
7.3	**Specific end use(s):**	For research use only. Not for use in diagnostic procedures.
Section 8: Exposure controls/personal protection		
8.1	**Control parameters:**	.
8.1a	Occupational exposure limits, such as chemical identity, standard, TWA-8 hours (time weighted average), STEL-15 minutes (short term exposure limit), etc.: WEL = Workplace Exposure Limit. Sk = can be absorbed through skin.	Methanol: EH40 2005 UK Workplace Exposure Limits STEL: 333 mg/m^3 15 minutes STEL: 250 ppm 15 minutes TWA: 266 mg/m^3 8 hours TWA: 200 ppm 8 hours USA ACGIH Threshold Limit Values TWA- 200 ppm 8 hours TWA- 262 mg/m^3 8 hours STEL- 250 ppm 15 minutes STEL- 328 mg/m^3 15 minutes US NIOSH Recommended Exposure Limits TWA- 200 ppm 10 hours TWA- 260 mg/m^3 10 hours STEL- 250 ppm 15 minutes STEL- 325 mg/m^3 15 minutes OSHA Permissible Exposure Limits TWA- 200 ppm 8 hours TWA- 260 mg/m^3 8 hours Formaldehyde EH40 2005 UK Workplace Exposure Limits STEL: 2.5 mg/m^3 15 minutes STEL: 2 ppm 15 minutes TWA: 2 ppm 8 hours TWA: 2.5 mg/m^3 8 hours USA ACGIH Threshold Limit Values C: 0.300000 ppm OSHA PEL Subpart Z Standard - OSHA Specifically Regulated Chemicals/Carcinogens TWA 0.750000 ppm 8 hours STEL - 2.000000 ppm 15 minutes US NIOSH Recommended Exposure Limits TWA: 0.016000 ppm 10 hours CEIL - 0.100000 ppm 15 minutes
8.1b	Appropriate engineering controls:	.
8.1c	Individual protection measures, such as personal protective equipment:	Wear gloves, lab coat, and protective goggles.
8.1d	Safety symbols:	
8.2	**Exposure controls:**	.
8.2a	Process conditions:	Provide eyewash station.
8.2b	Engineering controls:	Ensure that eyewash stations and safety showers are proximal to the workstation location.
8.2c	Ventilation controls:	Provide adquate ventilation.
8.2d	Reference to other sections:	Refer to Section 5 for additional information.
8.2e	Eye/face protection:	Tightly fitting safety goggles. Use equipment for eye/face protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166(EU).
8.2f	Skin protection:	Wear apron or protective clothing in case of contact.
8.2g	Hand protection:	Handle with gloves. Gloves must be inspected prior to use. Use proper glove removal technique (without touching glove's outer surface) to avoid skin contact with this product. Dispose of contaminated gloves after use in accordance with applicable laws and good laboratory practices. Wash and dry hands. The selected protective gloves have to satisfy the specifications of EU Directive 89/686/EEC and the standard EN 374 derived from it. Full contact Material: Nitrile rubber Minimum layer thickness: 0,11 mm Break through time: 480 min Material tested:Dermatril® (KCL 740 / Aldrich Z677272, Size M) Splash contact Material: Nitrile rubber Minimum layer thickness: 0,11 mm Break through time: 480 min Material tested:Dermatril® (KCL 740 / Aldrich Z677272, Size M) data source: KCL GmbH, D-36124 Eichenzell, phone +49 (0)6659 87300, e-mail sales@kcl.de, test method: EN374 If used in solution, or mixed with other substances, and under conditions which differ from EN 374, contact the supplier of the CE approved gloves. This recommendation is advisory only

		and must be evaluated by an industrial hygienist and safety officer familiar with the specific situation of the customers' anticipated uses of the product. It should not be construed as offering an approval for any specific use scenario.
8.2h	Respiratory equipment:	Where risk assessment shows air-purifying respirators are appropriate use a full-face respirator with multi-purpose combination (US) or type ABEK (EN 14387) respirator cartridges as a backup to engineering controls. If the respirator is the sole means of protection, use a full-face supplied air respirator. Use respirators and components tested and approved under appropriate government standards such as NIOSH (US) or CEN (EU).
8.2i	Other protection:	Wear appropriate clothing to prevent any possibility of skin contact.
8.2j	Hygiene measures:	DO NOT SMOKE IN WORK AREA! Wash at the end of each work shift and before eating, smoking, and using the toilet. Promptly remove any clothing that becomes contaminated. Use appropriate skin cream to prevent drying of skin. When using do not eat, drink, or smoke. Wash promptly with soap and water if skin becomes contaminated.
8.2k	Thermal hazards:	None known.
8.2l	Environmental exposure controls:	Not determined.
Section 9: Physical and chemical properties		
9.1	**Information on basic physical and chemical properties:**	.
9.1a	Appearance (physical state, color, etc.):	Liquid; colorless; clear.
9.1b	Odor:	Pungent
9.1c	Odor threshold:	Not determined.
9.1d	pH:	6.8-7.4
9.1e	Melting point/freezing point (˚C):	Not determined.
9.1f	Initial boiling point and boiling range:	Not determined.
9.1g	Flash point (˚C):	85°C estimated value based on supplier data.
9.1h	Evaporation rate:	Not determined.
9.1i	Flammability (solid, gas):	Not determined.
9.1j	Upper/lower flammability or explosive limits:	Upper: 70%(V) estimated value. Lower: 7%(V) estimated value.
9.1k	Vapor pressure:	53 hPa at 39°C estimated value.
9.1l	Vapor density (Air =1):	Not applicable.
9.1m	Relative density:	Not determined.
9.1n	Solubility(ies):	Readily miscible in water.
9.1o	Partition coefficient (N-octanol/water):	Not determined.
9.1p	Auto-ignition temperature (˚C):	Not determined.
9.1q	Decomposition temperature (˚C):	Not determined.
9.1r	Viscosity:	Not determined.
9.1s	Explosive properties:	Not determined.
9.1t	Oxidizing properties:	Not determined.
9.2	**Other information:**	None.
9.2a	Other physical or chemical parameters:	None.
Section 10: Stability and reactivity		
10.1	**Reactivity:**	Strong acids. Strong oxidizing substances.
10.2	**Chemical stability:**	Stable under normal temperature conditions.
10.3	**Possibility of hazardous reactions:**	Not determined.
10.4	**Conditions to avoid:**	Heat, flames, and sparks. Avoid exposure to high temperatures or direct sunlight.
10.5	**Incompatible materials:**	Strong bases, strong acids, strong oxidizing agents, alkali metals, amines, acid chlorides, acid anhydrides, reducing agents, peroxides, isocyanates, phenol, aniline.
10.6	**Hazardous decomposition products:**	None under normal conditions. High temperatures generate: Vapors/gases/fumes of: Formaldehyde.
Section 11: Toxicological information		
11.1	**Information on toxicological effects:**	.
11.1a	Name:	.
11.1b	Acute toxicity:	Formaldehyde: LD50 Dermal Rabbit 270 mg/kg. LD50 Oral Rat 100 mg/kg. Methanol: LD50 Dermal Rabbit 15800 mg/kg. LD50 Oral Rat 5600 mg/kg.
11.1c	Skin corrosion/irritation:	Formaldehyde: Not determined. Methanol: Not determined.
11.1d	Serious eye damage/irritation:	Formaldehyde: Not determined. Methanol: Not determined.
11.1e	Respiratory or skin sensitization:	Formaldehyde: Not determined. Methanol: Not determined.
11.1f	Germ cell mutagenicity:	Formaldehyde: Not determined. Methanol: Not determined.
11.1g	Carcinogenicity:	Formaldehyde: IARC: 1 - Group 1: Carcinogenic to humans. NTP - Known to be a human Carcinogen. NIOSH - List of Known Carcinogens.

		ACGIH - A2 (Suspected Human Carcinogen).
11.1h	Reproductive toxicity:	Formaldehyde: Not determined. Methanol: Not determined.
11.1i	STOT-single exposure:	Formaldehyde: Not determined. Methanol: Not determined.
11.1j	STOT-repeated exposure:	Formaldehyde: Category 3, Respiratory Tract Irritation. Methanol: Not determined.
11.1k	Aspiration hazard:	Formaldehyde: Not determined. Methanol: Not determined.
11.1l	Information on the likely routes of exposure (inhalation, ingestion, skin and eye contact):	May enter by skin and/or eye contact; inhalation of vapors/mist/dust.
11.1m	Ingestion:	Harmful if swallowed.
11.1n	Inhalation:	May cause respiratory irritation.
11.1o	Skin contact:	Harmful in contact with skin. Causes skin irritation. May cause an allergic skin reaction.
11.1p	Eye contact:	Causes serious eye irritation.
11.1q	Symptoms related to the physical, chemical and toxicological characteristics:	May cause sensitization by skin contact.
11.1r	Delayed and immediate effects as well as chronic effects from short and long term exposure:	May cause cancer. Suspected of causing genetic defects. May cause damage to organs.
11.1s	Numerical measures of toxicity (such as acute toxicity estimates):	Not determined.
11.1t	Interactive effects:	Not determined.
11.1u	Absence of specific data:	Not applicable.
11.1v	Mixtures:	Item is a mixture.
11.1w	Mixture vs. substance information:	See Section 3 for any substances in the mixture.
11.1x	Classification by National Toxicity Program (NTP):	Formaldehyde is known to be a human carcinogen. Methanol is not listed.
11.1y	Classification by International Agency for Research on Cancer (IARC):	Formaldehyde is classified in Group 1: Carcinogenic to Humans. Methanol is not listed.
11.1z	Classification by OSHA 13:	Formaldehyde is not listed. Methanol is not listed.
11.1ab	Other information:	Because of the small quantity of product, the health hazard is small.
Section 12: Ecological information		
12.1	**Toxicity:**	Mixture not tested.
12.1a	Name:	Fixative.
12.1b	Ecotoxicity (aquatic and terrestrial, where available):	No data available.
12.2	**Persistence and degradability:**	No data available.
12.3	**Bioaccumulative potential:**	No data available.
12.4	**Mobility in soil:**	No data available.
12.5	**Results of PBT and vPvB assessment:**	Not determined.
12.6	**Other adverse effects:**	Not determined.
Section 13: Disposal considerations		
13.1	**Waste treatment methods:**	When handling waste, consideration should be made to the safety precautions applying to handling of the product.
13.1a	Description of waste residues and information on their safe handling and methods of disposal, including the disposal of any contaminated packaging:	Dispose of waste and residues in accordance with local authority requirements. For the safety of persons conducting disposal, recycling or reclamation activities, please refer to the information in Section 8 (exposure controls and personal protection) of the SDS.
Section 14: Transport information		
14.1	**UN number:**	Not applicable.
14.2	**UN proper shipping name:**	Not applicable.
14.3	**Transport hazard class(es):**	Not applicable.
14.4	**Packing group:**	Not applicable.
14.5	**Environmental hazards:**	.
14.5a	Is it environmentally dangerous according to UN Model Regulations (IMDG Code, ADR, RID, and ADN)?:	The product is not covered by these regulations.
14.5b	Is it a marine pollutant according to the IMDG code?:	No.
14.6	**Special precautions for user:**	None known.
14.7	**Transport in bulk according to Annex II of MARPOL and the IBC code:**	Not applicable.
14.7a	Other information:	The product is not considered a dangerous good for transport.
14.7b	Classification for other modes of transport:	Contact supplier.
Section 15: Regulatory information		
15.1	**Safety, health and environmental regulations/legislation specific for the substance or mixture:**	.
15.1a	Regional safety, health and environmental regulations specific for the product in question:	USDA OSHA - Formaldehyde Standard Subpart Z 1910.1048.
15.1b	USA SARA Components (such as 302/311/313):	Formaldehyde is listed on 302, 304, 313, and RCRA code U122. Methanol is listed on 313 and RCRA code U122.
15.1c	USA Massachusetts Right to Know:	Formaldehyde and methanol are listed.
15.1d	USA Pennsylvania Right to Know:	Formaldehyde and methanol are listed.
15.1e	USA New Jersey Right to Know:	Formaldehyde and methanol are listed.
15.1f	USA California Prop. 65 Components:	Formaldehyde and methanol are listed.

15.1g	EU Regulation 1907/2006 {REACH}:	.
15.1h	Annex XIV substances subject to authorization:	Formaldehyde is listed.
15.1i	Substances of very high concern:	Fixative is not listed.
15.1j	Approved code of practice:	Classification and labeling of substances and preparations dangerous for supply. Safety data sheets for substances and preparations.
15.1k	Guidance notes:	Workplace exposure limits EH40.
15.1l	EU legislation references:	(EC) No. 1272/2008 on the classification, labelling and packaging of substances and mixtures {CLP Regulation}. EC 830/2015. Regulation (EC) No 1907/2006 of the European Parliament and of the Council of 18 December 2006 concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH), establishing a European Chemicals Agency, amending Directive 1999/45/EC and repealing Council Regulation (EEC) No 793/93 and Commission Regulation (EC) No 1488/94 as well as Council Directive 76/769/EEC and Commission Directives 91/155/EEC, 93/67/EEC, 93/105/EC and 2000/21/EC, including amendments.
15.2	**Chemical safety assessment:**	Not required.
15.2a	Other regulatory information:	None.

Section 16: Other information

16.1	**Other information:**	.
16.1a	Date of revision:	12-May-2017
16.1b	SDS number and revision:	F17-536-2-D
16.1c	Supersedes SDS number and revision:	F17-536-2-C
16.1d	Changes made to the previous version of the SDS:	Reviewed and updated document control numbers. Minor changes were made (corrected typos, deleted redundant information, etc.).
16.1e	Key/legend to abbreviations and acronyms used in the SDS:	ACGIH American Conference of Governmental Industrial Hygienists. ADN European Provisions concerning the International Carriage of Dangerous Goods by Inland Waterway. ADR The European Agreement concerning the International Carriage of Dangerous Goods by Road. ATE Acute Toxicity Estimate. BCF Bio Concentration Factor. CAS Chemical Abstracts Service. CLP Classification, Labelling and Packaging. CMR Carcinogen, Mutagen or Reproductive toxicant. COD Chemical Oxygen Demand. EC European Commission. EC50 Half maximal effective concentration. EH40 Resource containing the list of workplace exposure limits for use with the Control of Substances Hazardous to Health Regulations. EINECS European Inventory of Existing Commercial chemical Substances. ELINCS European List of Notified Chemical Substances. EU European Union. GHS Globally Harmonized System of Classification and Labelling of Chemicals. H Statement GHS Hazard statement. IATA International Air Transport Association. IBC Intermediate Bulk Container. IC50 Half maximal inhibitory concentration. IMDG International Maritime Dangerous Goods. LC50 Median lethal concentration. LD50 Median lethal dose. LogPow logarithm of the octanol/water partition coefficient. MARPOL 73/78 International Convention for the Prevention of Pollution From Ships, 1973 as modified by the Protocol of 1978. OEL Occupational Exposure Limit. OSHA Occupational Safety and Health Administration (USA). PBT Persistent, Bioaccumulative, and Toxic. PEL Permissible Exposure Limit. RID The Regulations concerning the International Carriage of Dangerous Goods by Rail. SADT Self-Accelerating Decomposition Temperature. SARA Superfund Amendments and Reauthorization Act. SCBA Self-Contained Breathing Apparatus. SDS Safety Data Sheet. STOT Specific Target Organ Toxicity. STOT-RE Specific Target Organ Toxicity - Repeated Exposure. STOT-SE Specific Target Organ Toxicity - Single Exposure. UN United Nations. USA United States of America. vPvB very Persistent very bioaccumulative.
16.1f	Full text of hazard statements and/or precautionary statements not written out in full elsewhere:	All statements were written out in full.

DISCLAIMER:	**This information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process. Such information is, to the best of the company's knowledge and belief, accurate and reliable as of the date indicated. However, no warranty guarantee or representation is made to its accuracy, reliability, or completeness. It is the user's responsibility to satisfy himself as to the suitability of such information for his own particular use.**
END OF SDS	

ImmunoChemistry TECHNOLOGIES LLC

SAFETY DATA SHEET (SDS)

according to Regulation (EC) No. 830/2015 amending 1907/2006

Section 1: Identification of the substance/mixture and of the company/undertaking

1.1	**Product identifier:**		Hoechst 33342
1.1a	Other means of identification:		.
1.1b		Alternative product name(s)/ synonyms:	Hoechst stain, HS
1.1c		Product number/Catalog #(s):	556, 639
1.1d		Internal identification:	Hoechst stain; HS
1.2	**Relevant identified uses of the substance or mixture and uses advised against:**		For research use only. Not for use in diagnostic procedures.
1.2a	Brief description of what the substance or mixture is intended to do:		Cell permeant blue fluorescent stain typically used to visualize the nuclei of cells.
1.3	**Details of the supplier of the SDS:**		.
1.3a		Name:	ImmunoChemistry Technologies, LLC (ICT)
1.3b		Address:	9401 James Avenue South, Suite 155
1.3c		City, State, Zip, Country	Bloomington, MN 55431-2500 USA
1.3d		Phone number:	1-800-829-3194 and 952-888-8788
1.3e		Fax number:	952-888-8988
1.3f		Website:	www.immunochemistry.com
1.3g		Email:	help@immunochemistry.com
1.3h		Contact person at ICT:	Quality Documentation Department
1.4	**Emergency telephone number:**		ICT: 1-800-829-3194 (USA & Canada) or 952-888-8788 world wide; ICT hours are 9 am-5 pm central time USA, Monday through Friday (excluding holidays). Chemtrec 24-hour access within USA and Canada: 1-800-424-9300 or +1 703-527-3887. Collect calls accepted.

Section 2: Hazards identification

2.1	**Classification of the substance or mixture:**		.
2.1a	Product is a:		Mixture.
2.1b	Classification according to (EC) No. 1272/2008 {CLP}:		Does not meet the criteria for classification.
2.1c	The most important adverse physiochemical, human health, and environmental effects:		Refer to Sections 9-12.
2.2	**Label elements:**		None.
2.2a	GHS label elements, including precautionary statements:		.
2.2b		Contains:	.
2.2c	Labeling in accordance with (EC) No. 1272/2008:		.
2.2d	Hazard Pictograms (Hazard Symbols):		None.
2.2e	Signal word:		None.
2.2f	Hazard statements:		None.
2.2g	Precautionary statements:		None.
2.2h	Supplementary precaution statements:		None.
2.3	**Other hazards:**		No additional information available.
2.3a	Does the chemical meet the criteria for PBT or vPvB?		Not applicable.
2.3b	Other hazards which do not result in classification:		Hoechst contains a low concentration of Bis benzimide H 33342 trihydrochloride (CAS 23491-52-3) which is below the threshold for reporting. Hoechst is a suspected mutagen at high concentrations. Prolonged skin contact may cause redness and irritation. Because of the small quantity of product, the health hazard is small.

Section 3: Composition/information on ingredients

3.1	**Substance:**	Item is a mixture therefore Section 3.1 is not applicable; see Section 3.2.
3.2	**Mixture:** The chemical identity and concentration or concentration ranges of all ingredients which are hazardous and are present above their cut-off levels:	Item is a mixture.
	3.2a Chemical identity:	No ingredients identified for reporting in this section.

Section 4: First aid measures

4.1	**Description of first aid measures:**	If concerned, get medical attention/advice and provide physician with SDS information. Wash contaminated clothing before re-use. Never give anything by mouth to an unconscious person.

4.1a	Inhalation:	Remove to fresh air and keep at rest in a comfortable position for breathing. If not breathing, give artificial respiration. Rinse nose and mouth with water. Get medical attention if any discomfort continues.
4.1b	Skin contact:	Wash skin thoroughly with soap and water for several minutes; continue to rinse for at least 15 minutes. Remove any contaminated clothing and shoes and wash thoroughly before reuse. Get medical attention if any discomfort continues.
4.1c	Eye contact:	Promptly wash eyes with plenty of water while lifting the eyelids. Make sure to remove any contact lenses from the eyes before rinsing. Continue to rinse for at least 15 minutes. Get medical attention if any discomfort continues.
4.1d	Ingestion:	NEVER MAKE AN UNCONSCIOUS PERSON VOMIT OR DRINK FLUIDS! Rinse mouth thoroughly. Do not induce vomiting without advice from poison control center or medical professional. Get medical attention if any discomfort continues.
4.2	**Most important symptoms and effects, both acute and delayed:**	Hoechst is a suspected mutagen at high concentrations. Prolonged skin contact may cause redness and irritation. Because of the small quantity of product, the health hazard is small.
4.2a	Inhalation:	May cause coughing or mild irritation.
4.2b	Skin contact:	Prolonged skin contact may cause redness and mild irritation.
4.2c	Eye contact:	May cause temporary eye irritation.
4.2d	Ingestion:	May cause discomfort if swallowed.
4.3	**Indication of any immediate medical attention and special treatment needed:**	No specific first aid measures noted, but first aid may still be required in case of accidental exposure, inhalation, or ingestion of this product. If in doubt, get medical attention promptly!
4.3a	Notes to physician/first responder:	Treat symptomatically. Refer to Sections 5-8 for advice on personal protective equipment.
Section 5: Firefighting measures		
5.1	**Extinguishing media:**	This product is not flammable. Use fire-extinguishing media appropriate for the surrounding materials.
5.1a	Suitable extinguishing media:	Water spray, foam, dry powder, or carbon dioxide.
5.1b	Unsuitable extinguishing media:	None known.
5.2	**Special hazards arising from the substance or mixture:**	This product is not flammable. Product is not explosive. No dangerous reactions known under normal conditions of use.
5.2a	Hazardous combustion products:	None under normal conditions.
5.2b	Unusual fire & explosion hazards:	No unusual fire or explosion hazards noted.
5.2c	Protective measures in fire:	Use protective equipment appropriate for surrounding materials.
5.3	**Advice for firefighters:**	Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.
5.3a	Special firefighting procedures:	No specific firefighting procedure given.
5.3b	Special protective equipment and precautions for firefighters:	Wear full protective clothing, including self-contained breathing apparatus, if necessary. The product presents no special fire hazards in normal use. Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.
Section 6: Accidental release measures		
6.1	**Personal precautions, protective equipment, and emergency procedures:**	Use protective equipment appropriate for surrounding materials.
6.1a	General release measures:	No specific emergency measures are required other than good laboratory hygiene and safety practices for small spills. Wear suitable protective clothing, gloves and eye or face protection. Consult professional emergency personnel if concerned (see Section 8).
6.1b	Advice for non-emergency personnel; personal precautions, protective equipment and emergency procedures:	No specific emergency measures are required other than good laboratory hygiene and safety practices. Wear suitable protective clothing/gloves/eye/face protection to avoid contact with skin, eyes, and personal clothing; use an approved supplied-air respirator, in case of emergency (also refer to Section 8). Remove all sources of ignition. Ensure adequate ventilation and control dust/mist. Avoid breathing vapors, mist, or gas. Evacuate personnel to safe areas. Wear suitable protective clothing, gloves and eye or face protection to prevent any contamination. Consult professional emergency personnel if concerned.
6.1c	Advice for emergency responders; personal precautions, protective equipment and emergency procedures:	Wear suitable protective clothing, gloves and eye or face protection to avoid contact; use an approved supplied-air respirator, in case of emergency (also refer to Section 8).
6.2	**Environmental precautions:**	Do not allow to enter drains, sewers, or watercourses.
6.3	**Methods and materials for containment and clean up:**	Contain any spills with dikes or absorbent materials to prevent migration and entry into sewers or water sources. Place in a suitable container for disposal in accordance with local waste regulations (see

		Section 13). Wash spill area thoroughly with plenty of soap and water. Avoid contact with skin or inhalation of spillage, dust, or vapor.
6.4	**Reference to other sections:**	Refer to Sections 8 and 13 for additional information.
Section 7: Handling and storage		
7.1	**Precautions for safe handling:**	Do not handle until all safety precautions have been read and understood. Avoid creation of aerosol/mist/dust. Avoid inhalation of vapors/mist/dust. Prevent contact with skin and eyes. Use appropriate personal protection equipment (PPE). Thoroughly wash hands and contaminated areas with water and soap before leaving the work site. Keep away from sources of ignition.
7.1a	Prevent handling of incompatible substances or mixtures:	Avoid contact with strong acids and strong oxidizers.
7.1b	Advice on general occupational hygiene:	Do not eat, drink, or smoke in work areas. Wash hands after use. Remove contaminated clothing and protective equipment before entering eating areas. Good personal hygiene is necessary. Follow good laboratory hygiene and safety practices.
7.2	**Conditions for safe storage, including any incompatibilities:**	Refer to product label. Store in cool place. Keep container tightly closed in a dry and well-ventilated place. Containers which are opened must be carefully resealed and kept upright to prevent leakage. Avoid spills and release into the environment; keep away from watercourses.
7.3	**Specific end use(s):**	For research use only. Not for use in diagnostic procedures.
Section 8: Exposure controls/personal protection		
8.1	**Control parameters:**	.
8.1a	Occupational exposure limits, such as chemical identity, standard, TWA-8 hours (time weighted average), STEL-15 minutes (short term exposure limit), etc.: WEL = Workplace Exposure Limit. Sk = can be absorbed through skin.	Not available.
8.1b	Appropriate engineering controls:	.
8.1c	Individual protection measures, such as personal protective equipment:	Wear gloves, protective goggles, and lab coat.
8.1d	Safety symbols:	
8.2	**Exposure controls:**	.
8.2a	Process conditions:	Provide eyewash station.
8.2b	Engineering controls:	Ensure that eyewash stations and safety showers are proximal to the workstation location.
8.2c	Ventilation controls:	Provide adequate ventilation.
8.2d	Reference to other sections:	Refer to Section 5 for additional information.
8.2e	Eye/face protection:	Wear approved chemical safety goggles where eye exposure is reasonably probable or face shield if risk of splashing.
8.2f	Skin protection:	Wear apron or protective clothing in case of contact.
8.2g	Hand protection:	Use suitable protective gloves if risk of skin contact.
8.2h	Respiratory equipment:	Where risk assessment shows air-purifying respirators are appropriate use a full-face respirator with multi-purpose combination (US) or type ABEK (EN 14387) respirator cartridges as a backup to engineering controls. If the respirator is the sole means of protection, use a full-face supplied air respirator. Use respirators and components tested and approved under appropriate government standards such as NIOSH (US) or CEN (EU).
8.2i	Other protection:	Wear appropriate clothing to avoid skin contact.
8.2j	Hygiene measures:	DO NOT SMOKE IN WORK AREA! Wash at the end of each work shift and before eating, smoking, and using the toilet. Promptly remove any clothing that becomes contaminated. Use appropriate skin cream to prevent drying of skin. When using do not eat, drink, or smoke. Wash promptly with soap and water if skin becomes contaminated
8.2k	Thermal hazards:	None known under normal conditions of use.
8.2l	Environmental exposure controls:	Not determined.
Section 9: Physical and chemical properties		
9.1	**Information on basic physical and chemical properties:**	.
9.1a	Appearance (physical state, color, etc.):	Liquid; clear light yellow.
9.1b	Odor:	No characteristic odor.
9.1c	Odor threshold:	Not determined.

9.1d	pH:	3.0-5.0
9.1e	Melting point/freezing point (˚C):	Not determined.
9.1f	Initial boiling point and boiling range:	<100°C @ 760 mm Hg.
9.1g	Flash point (˚C):	Not applicable.
9.1h	Evaporation rate:	Not determined.
9.1i	Flammability (solid, gas):	Not applicable.
9.1j	Upper/lower flammability or explosive limits:	Not applicable.
9.1k	Vapor pressure:	Not determined.
9.1l	Vapor density (Air =1):	Not determined.
9.1m	Relative density:	Not determined.
9.1n	Solubility(ies):	Soluble in water.
9.1o	Partition coefficient (N-octanol/water):	Not determined.
9.1p	Auto-ignition temperature (˚C):	Not determined.
9.1q	Decomposition temperature (˚C):	Not determined.
9.1r	Viscosity:	Not determined.
9.1s	Explosive properties:	Not determined.
9.1t	Oxidizing properties:	Not determined.
9.2	**Other information:**	None.
9.2a	Other physical or chemical parameters:	None.

Section 10: Stability and reactivity

10.1	**Reactivity:**	No data available.
10.2	**Chemical stability:**	Stable under normal temperature conditions.
10.3	**Possibility of hazardous reactions:**	Hazardous polymerization: will not polymerize.
10.4	**Conditions to avoid:**	To avoid product degradation, avoid exposure to high temperatures or direct sunlight or light.
10.5	**Incompatible materials:**	Strong oxidizing substances.
10.6	**Hazardous decomposition products:**	None under normal conditions.

Section 11: Toxicological information

11.1	**Information on toxicological effects:**	.
11.1a	Name:	Hoechst 33342
11.1b	Acute toxicity:	Not determined.
11.1c	Skin corrosion/irritation:	Not determined.
11.1d	Serious eye damage/irritation:	Not determined.
11.1e	Respiratory or skin sensitization:	Not determined.
11.1f	Germ cell mutagenicity:	Toxicological studies are not yet available. In vitro DNA repair and inhibition tests suggest mutagenic effects in mouse fibroblasts and hamster lung cells. Knowledge about health hazard is incomplete.
11.1g	Carcinogenicity:	Not determined.
11.1h	Reproductive toxicity:	Not determined.
11.1i	STOT-single exposure:	Not determined.
11.1j	STOT-repeated exposure:	Not determined.
11.1k	Aspiration hazard:	Not determined.
11.1l	Information on the likely routes of exposure (inhalation, ingestion, skin and eye contact):	May enter by skin and/or eye contact; inhalation of vapors/mist/dust.
11.1m	Ingestion:	May cause discomfort if swallowed.
11.1n	Inhalation:	In high concentrations, vapors may irritate throat and respiratory system and cause coughing.
11.1o	Skin contact:	Liquid may irritate skin.
11.1p	Eye contact:	Spray and vapor in the eyes may cause irritation and smarting.
11.1q	Symptoms related to the physical, chemical and toxicological characteristics:	No specific symptoms noted.
11.1r	Delayed and immediate effects as well as chronic effects from short and long term exposure:	Not determined.
11.1s	Numerical measures of toxicity (such as acute toxicity estimates):	Not determined.
11.1t	Interactive effects:	Not determined.
11.1u	Absence of specific data:	Not applicable.
11.1v	Mixtures:	Item is a mixture.
11.1w	Mixture vs. substance information:	See Section 3 for any substances in the mixture.
11.1x	Classification by National Toxicity Program (NTP):	Not classified.
11.1y	Classification by International Agency for Research on Cancer (IARC):	Not classified.
11.1z	Classification by OSHA 13:	Not classified.
11.1ab	Other information:	Hoechst is a suspected mutagen at high concentrations. Prolonged skin contact may cause redness and irritation. Because of the small quantity of product, the health hazard is small.

Section 12: Ecological information		
12.1	**Toxicity:**	.
12.1a	Name:	Hoechst 33342.
12.1b	Ecotoxicity (aquatic and terrestrial, where available):	Not determined.
12.2	**Persistence and degradability:**	There are no data on the degradability of this product.
12.3	**Bioaccumulative potential:**	No data available on bioaccumulation.
12.4	**Mobility in soil:**	The product is soluble in water.
12.5	**Results of PBT and vPvB assessment:**	Not determined.
12.6	**Other adverse effects:**	No data available.
Section 13: Disposal considerations		
13.1	**Waste treatment methods:**	When handling waste, consideration should be made to the safety precautions applying to handling of the product.
13.1a	Description of waste residues and information on their safe handling and methods of disposal, including the disposal of any contaminated packaging:	Dispose of waste and residues in accordance with local authority requirements. For the safety of persons conducting disposal, recycling or reclamation activities, please refer to the information in Section 8 (exposure controls and personal protection) of the SDS.
Section 14: Transport information		
14.1	**UN number:**	Not applicable.
14.2	**UN proper shipping name:**	Not applicable.
14.3	**Transport hazard class(es):**	Not applicable.
14.4	**Packing group:**	Not applicable.
14.5	**Environmental hazards:**	.
14.5a	Is it environmentally dangerous according to UN Model Regulations (IMDG Code, ADR, RID, and ADN)?:	The product is not covered by these regulations.
14.5b	Is it a marine pollutant according to the IMDG code?:	No.
14.6	**Special precautions for user:**	None known.
14.7	**Transport in bulk according to Annex II of MARPOL and the IBC code:**	Not applicable.
14.7a	Other information:	The product is not considered a dangerous good for transport.
14.7b	Classification for other modes of transport:	Contact supplier.
Section 15: Regulatory information		
15.1	**Safety, health and environmental regulations/legislation specific for the substance or mixture:**	.
15.1a	Regional safety, health and environmental regulations specific for the product in question:	.
15.1b	USA SARA Components (such as 302/311/313):	Not listed.
15.1c	USA Massachusetts Right to Know:	Not listed.
15.1d	USA Pennsylvania Right to Know:	Not listed.
15.1e	USA New Jersey Right to Know:	Not listed.
15.1f	USA California Prop. 65 Components:	Not listed.
15.1g	EU Regulation 1907/2006 {REACH}:	.
15.1h	Annex XIV substances subject to authorization:	Not listed.
15.1i	Substances of very high concern:	Not listed.
15.1j	Approved code of practice:	Classification and labeling of substances and preparations dangerous for supply. Safety data sheets for substances and preparations.
15.1k	Guidance notes:	Workplace exposure limits EH40.
15.1l	EU legislation references:	(EC) No. 1272/2008 on the classification, labelling and packaging of substances and mixtures {CLP Regulation}. EC 830/2015. Regulation (EC) No 1907/2006 of the European Parliament and of the Council of 18 December 2006 concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH), establishing a European Chemicals Agency, amending Directive 1999/45/EC and repealing Council Regulation (EEC) No 793/93 and Commission Regulation (EC) No 1488/94 as well as Council Directive 76/769/EEC and Commission Directives 91/155/EEC, 93/67/EEC, 93/105/EC and 2000/21/EC, including amendments.
15.2	**Chemical safety assessment:**	Not required.
15.2a	Other regulatory information:	None.
Section 16: Other information		
16.1	**Other information:**	.
16.1a	Date of revision:	12-May-2017
16.1b	SDS number and revision:	F17-556-2-D
16.1c	Supersedes SDS number and revision:	F17-556-2-C

16.1d	Changes made to the previous version of the SDS:	Reviewed and updated document control numbers.
16.1e	Key/legend to abbreviations and acronyms used in the SDS:	ACGIH American Conference of Governmental Industrial Hygienists. ADN European Provisions concerning the International Carriage of Dangerous Goods by Inland Waterway. ADR The European Agreement concerning the International Carriage of Dangerous Goods by Road. ATE Acute Toxicity Estimate. BCF Bio Concentration Factor. CAS Chemical Abstracts Service. CLP Classification, Labelling and Packaging. CMR Carcinogen, Mutagen or Reproductive toxicant. COD Chemical Oxygen Demand. EC European Commission. EC50 Half maximal effective concentration. EH40 Resource containing the list of workplace exposure limits for use with the Control of Substances Hazardous to Health Regulations. EINECS European Inventory of Existing Commercial chemical Substances. ELINCS European List of Notified Chemical Substances. EU European Union. GHS Globally Harmonized System of Classification and Labelling of Chemicals. H Statement GHS Hazard statement. IATA International Air Transport Association. IBC Intermediate Bulk Container. IC50 Half maximal inhibitory concentration. IMDG International Maritime Dangerous Goods. LC50 Median lethal concentration. LD50 Median lethal dose. LogPow logarithm of the octanol/water partition coefficient. MARPOL 73/78 International Convention for the Prevention of Pollution From Ships, 1973 as modified by the Protocol of 1978. OEL Occupational Exposure Limit. OSHA Occupational Safety and Health Administration (USA). PBT Persistent, Bioaccumulative, and Toxic. PEL Permissible Exposure Limit. RID The Regulations concerning the International Carriage of Dangerous Goods by Rail. SADT Self-Accelerating Decomposition Temperature. SARA Superfund Amendments and Reauthorization Act. SCBA Self-Contained Breathing Apparatus. SDS Safety Data Sheet. STOT Specific Target Organ Toxicity. STOT-RE Specific Target Organ Toxicity - Repeated Exposure. STOT-SE Specific Target Organ Toxicity - Single Exposure. UN United Nations. USA United States of America. vPvB very Persistent very bioaccumulative.
16.1f	Full text of hazard statements and/or precautionary statements not written out in full elsewhere:	All statements were written out in full.
DISCLAIMER:	**This information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process. Such information is, to the best of the company's knowledge and belief, accurate and reliable as of the date indicated. However, no warranty guarantee or representation is made to its accuracy, reliability, or completeness. It is the user's responsibility to satisfy himself as to the suitability of such information for his own particular use.**	

END OF SDS