FAM-VDVAD-FMK SDS; Doc# F17-637-8-F; Effective: 01/06/2020; Supersedes: F17-637-8-E; Page 1 of 6



	n 1: Identification of the su	bstance/mixture and of th	ne company/underta	king
1.1	Product identifier:		FAM-VDVAD-I	FMK
1.1a	Other means of identification:			
1.1b	Alternative product name(s)/ synonyms:		carboxyfluorescein fluoromethyl ketone	A, Caspase-2 Inhibitor Reagent; a derivative of valylaspartylvalylalanylaspartic acid
1.1c	Product number/		680	
1.1d 1.2	Internal identifica Relevant identified uses of mixture and uses advised	of the substance or I against:	For research use or	nly. Not for use in diagnostic procedures.
1.2a	Brief description of what the intended to do:		Caspase enzyme ir	hibitor and apoptosis detection reagent.
1.3	Details of the supplier of	the SDS:	•	
1.3a	Name:			Technologies, LLC (ICT)
1.3b	Address:		9401 James Avenu	
1.3c	City, State, Zip, C	Country	Bloomington, MN 5	
1.3d	Phone number:		1-800-829-3194 an	d 952-888-8788
1.3e	Fax number:		952-888-8988	• .
1.3f	Website:		www.immunochemi	
1.3g	Email:		help@immunochen	
1.3h	Contact person a		Quality Documenta	
1.4	Emergency telephone nu	mber:	ICT hours are 9 am (excluding holidays	94 (USA & Canada) or 952-888-8788 world wide; I-5 pm central time USA, Monday through Friday). Chemtrec 24-hour access within USA and I-9300 or +1 703-527-3887. Collect calls accepted.
Sectio	n 2: Hazards identification			
2.1	Classification of the subs	stance or mixture:		
2.1a	Product is a:		Substance.	
2.1b	Classification according to	(EC) No. 1272/2008	Does not meet the	criteria for classification.
2.1c	{CLP}: The most important advers health, and environmental of		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		None.	
2.2d	Hazard Pictograms (Hazard	d 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 inform	nation available.
2.3a	Does the chemical meet the		Not applicable.	
2.3b	Other hazards which do no	t result in classification:	No information avai	ilable.
	n 3: Composition/informat	ion on ingredients	I	
3.1	Substance:		Item is a substance).
	3.1a Chemical identity:		FAM-VDVAD-FMK	
	3.1b Common name, synor	nyms, etc.:	None.	
	3.1c CAS number and		<u>3.1e %</u>	3.1f Classification according to (EC) No.
	other unique identifiers:	<u>3.1d EC number:</u>	Concentration:	<u>1272/2008 {CLP}:</u>
	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.	

Sectio	n 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 reuse. Never give anything by mouth 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:	None known.
4.2b	Skin contact:	None known.
4.20 4.2c	Eye contact:	None known.
4.20 4.2d	Ingestion:	None known.
4.20 4.3	Indication of any immediate medical attention and special treatment needed:	No additional information available.
4.3a	Notes to physician/first responder:	Treat symptomatically. Refer to Sections 5-8 for advice on personal protective equipment.
Sectio	n 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 (CO ₂ ; CO _x). 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:	
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.
Sectio	n 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). 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 6.3	Environmental precautions: Methods and materials for containment and clean up:	Do not allow to enter drains, sewers, or watercourses. 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

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		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.
Sectio	on 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.
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.
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Section 8.1	n 8: Exposure controls/personal protection 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 8.1d	Individual protection measures, such as personal protective equipment: Safety symbols:	Wear gloves, protective goggles, and lab coat.
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 8.2e	Reference to other sections: Eye/face protection:	Refer to Section 5 for additional information. Wear approved chemical safety goggles where eye exposure is
8.2f	Skin protection:	reasonably probable or face shield if risk of splashing. 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.
	n 9: Physical and chemical properties	
9.1	Information on basic physical and chemical properties:	Doudor dust
9.1a 9.1b	Appearance (physical state, color, etc.): Odor:	Powder, dust. No specific data.
9.10 9.1c	Odor threshold:	Not determined.
0.10		

Not determined.

pH:

9.1d

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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 determined.
9.1h	Evaporation rate:	Not determined.
9.1i	Flammability (solid, gas):	Not determined.
9.1j	Upper/lower flammability or explosive limits:	Not determined.
9.1k	Vapor pressure:	Not determined.
9.11	Vapor density (Air =1):	Not determined.
9.1m	Relative density:	Not determined.
9.1n	Solubility(ies):	Insoluble in water; soluble in organic solvents.
9.10	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.
0.20		Nono.
Section	n 10: Stability and reactivity	
10.1	Reactivity:	No data available.
10.2	Chemical stability:	Stable under normal temperature conditions.
10.2	Possibility of hazardous reactions:	
		Hazardous polymerization: no data available.
10.4	Conditions to avoid:	To avoid product degradation, avoid exposure to high temperatures or
1		direct sunlight or light.
10.5	Incompatible materials:	No data available.
10.6	Hazardous decomposition products:	None under normal conditions.
10.0	Hazardous decomposition products:	None under normal conditions.
Section	n 11: Toxicological information	
11.1	Information on toxicological effects:	
11.1a	Name:	FAM-VDVAD-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.
	Reproductive toxicity:	Not determined.
11.1h		
11.1i	STOT-single exposure:	Not determined.
11.1i	STOT-single exposure:	
11.1i 11.1j	STOT-single exposure: STOT-repeated exposure:	Not determined. Not determined.
11.1i 11.1j 11.1k	STOT-single exposure: STOT-repeated exposure: Aspiration hazard:	Not determined.
11.1i 11.1j	STOT-single exposure: STOT-repeated exposure: Aspiration hazard: Information on the likely routes of exposure	Not determined. Not determined.
11.1i 11.1j 11.1k 11.1l	STOT-single exposure: STOT-repeated exposure: Aspiration hazard: Information on the likely routes of exposure (inhalation, ingestion, skin and eye contact):	Not determined. Not determined.
11.1i 11.1j 11.1k 11.1l	STOT-single exposure: STOT-repeated exposure: Aspiration hazard: Information on the likely routes of exposure (inhalation, ingestion, skin and eye contact):	Not determined. Not determined.
11.1i 11.1j 11.1k 11.1l 11.1m	STOT-single exposure: STOT-repeated exposure: Aspiration hazard: Information on the likely routes of exposure (inhalation, ingestion, skin and eye contact): Ingestion:	Not determined. Not determined. None known.
11.1i 11.1j 11.1k 11.1k 11.1l 11.1m 11.1m	STOT-single exposure: STOT-repeated exposure: Aspiration hazard: Information on the likely routes of exposure (inhalation, ingestion, skin and eye contact): Ingestion: Inhalation:	Not determined. Not determined. Not determined. None known. None known.
11.1i 11.1j 11.1k 11.1k 11.1l 11.1m 11.1n 11.1o	STOT-single exposure: STOT-repeated exposure: Aspiration hazard: Information on the likely routes of exposure (inhalation, ingestion, skin and eye contact): Ingestion: Inhalation: Skin contact:	Not determined. Not determined. None known. None known. None known.
11.1i 11.1j 11.1k 11.1k 11.1n 11.1m 11.1n 11.1o 11.1p	STOT-single exposure: STOT-repeated exposure: Aspiration hazard: Information on the likely routes of exposure (inhalation, ingestion, skin and eye contact): Ingestion: Inhalation: Skin contact: Eye contact:	Not determined. Not determined. . None known.
11.1i 11.1j 11.1k 11.1k 11.1l 11.1m 11.1n 11.1o	STOT-single exposure: STOT-repeated exposure: Aspiration hazard: Information on the likely routes of exposure (inhalation, ingestion, skin and eye contact): Ingestion: Inhalation: Skin contact:	Not determined. Not determined. None known. None known. None known.
11.1i 11.1j 11.1k 11.1k 11.1n 11.1m 11.1n 11.1o 11.1p	STOT-single exposure: STOT-repeated exposure: Aspiration hazard: Information on the likely routes of exposure (inhalation, ingestion, skin and eye contact): Ingestion: Inhalation: Skin contact: Eye contact: Symptoms related to the physical, chemical and	Not determined. Not determined. . None known.
11.1i 11.1j 11.1k 11.1k 11.1n 11.1n 11.1n 11.1o 11.1p 11.1q	STOT-single exposure: STOT-repeated exposure: Aspiration hazard: Information on the likely routes of exposure (inhalation, ingestion, skin and eye contact): Ingestion: Inhalation: Skin contact: Eye contact: Symptoms related to the physical, chemical and toxicological characteristics:	Not determined. Not determined. . None known. No specific symptoms noted.
11.1i 11.1j 11.1k 11.1k 11.1n 11.1m 11.1n 11.1o 11.1p	STOT-single exposure: STOT-repeated exposure: Aspiration hazard: Information on the likely routes of exposure (inhalation, ingestion, skin and eye contact): Ingestion: Inhalation: Skin contact: Eye contact: Symptoms related to the physical, chemical and toxicological characteristics: Delayed and immediate effects as well as chronic	Not determined. Not determined. . None known.
11.1i 11.1j 11.1k 11.1k 11.1n 11.1n 11.1n 11.1o 11.1p 11.1q 11.1r	STOT-single exposure: STOT-repeated exposure: Aspiration hazard: Information on the likely routes of exposure (inhalation, ingestion, skin and eye contact): Ingestion: Inhalation: Skin contact: Eye contact: Symptoms related to the physical, chemical and toxicological characteristics: Delayed and immediate effects as well as chronic effects from short and long term exposure:	Not determined. Not determined. . None known. Not determined.
11.1i 11.1j 11.1k 11.1k 11.1n 11.1n 11.1n 11.1o 11.1p 11.1q	STOT-single exposure: STOT-repeated exposure: Aspiration hazard: Information on the likely routes of exposure (inhalation, ingestion, skin and eye contact): Ingestion: Inhalation: Skin contact: Eye contact: Symptoms related to the physical, chemical and toxicological characteristics: Delayed and immediate effects as well as chronic	Not determined. Not determined. . None known. No specific symptoms noted.
11.1i 11.1j 11.1k 11.1k 11.1n 11.1n 11.1n 11.1o 11.1p 11.1q 11.1r	STOT-single exposure: STOT-repeated exposure: Aspiration hazard: Information on the likely routes of exposure (inhalation, ingestion, skin and eye contact): Ingestion: Inhalation: Skin contact: Eye contact: Symptoms related to the physical, chemical and toxicological characteristics: Delayed and immediate effects as well as chronic effects from short and long term exposure: Numerical measures of toxicity (such as acute	Not determined. Not determined. . None known. Not determined.
11.1i 11.1j 11.1k 11.1k 11.1m 11.1m 11.1n 11.1n 11.1p 11.1q 11.1r 11.1s	STOT-single exposure: STOT-repeated exposure: Aspiration hazard: Information on the likely routes of exposure (inhalation, ingestion, skin and eye contact): Ingestion: Inhalation: Skin contact: Eye contact: Symptoms related to the physical, chemical and toxicological characteristics: Delayed and immediate effects as well as chronic effects from short and long term exposure: Numerical measures of toxicity (such as acute toxicity estimates):	Not determined. Not determined. . None known. None known. None known. None known. None known. None known. Not determined. Not determined. Not determined.
11.1i 11.1j 11.1k 11.1k 11.1m 11.1m 11.1n 11.1n 11.1p 11.1q 11.1r 11.1s 11.1s	STOT-single exposure: STOT-repeated exposure: Aspiration hazard: Information on the likely routes of exposure (inhalation, ingestion, skin and eye contact): Ingestion: Inhalation: Skin contact: Eye contact: Symptoms related to the physical, chemical and toxicological characteristics: Delayed and immediate effects as well as chronic effects from short and long term exposure: Numerical measures of toxicity (such as acute toxicity estimates): Interactive effects:	Not determined. Not determined. . None known. None known. None known. None known. None known. None known. Not determined. Not determined. Not determined. Not determined.
11.1i 11.1j 11.1k 11.1k 11.1m 11.1m 11.1m 11.1n 11.1p 11.1q 11.1r 11.1s 11.1s 11.1t	STOT-single exposure: STOT-repeated exposure: Aspiration hazard: Information on the likely routes of exposure (inhalation, ingestion, skin and eye contact): Ingestion: Inhalation: Skin contact: Eye contact: Symptoms related to the physical, chemical and toxicological characteristics: Delayed and immediate effects as well as chronic effects from short and long term exposure: Numerical measures of toxicity (such as acute toxicity estimates): Interactive effects: Absence of specific data:	Not determined. Not determined. . None known. None known. None known. None known. None known. None known. Not determined. Not determined. Not determined. Not determined. Not determined. Not determined. Not applicable.
11.1i 11.1j 11.1k 11.1k 11.1m 11.1m 11.1m 11.1n 11.1p 11.1q 11.1r 11.1s 11.1t 11.1v	STOT-single exposure: STOT-repeated exposure: Aspiration hazard: Information on the likely routes of exposure (inhalation, ingestion, skin and eye contact): Ingestion: Inhalation: Skin contact: Eye contact: Symptoms related to the physical, chemical and toxicological characteristics: Delayed and immediate effects as well as chronic effects from short and long term exposure: Numerical measures of toxicity (such as acute toxicity estimates): Interactive effects: Absence of specific data: Mixtures:	Not determined. Not determined. . None known. None known. None known. None known. None known. None known. Not determined. Not determined. Not determined. Not determined. Not determined. Not applicable. Not applicable.
11.1i 11.1j 11.1k 11.1k 11.1m 11.1m 11.1m 11.1n 11.1p 11.1q 11.1r 11.1s 11.1t 11.1v	STOT-single exposure: STOT-repeated exposure: Aspiration hazard: Information on the likely routes of exposure (inhalation, ingestion, skin and eye contact): Ingestion: Inhalation: Skin contact: Eye contact: Symptoms related to the physical, chemical and toxicological characteristics: Delayed and immediate effects as well as chronic effects from short and long term exposure: Numerical measures of toxicity (such as acute toxicity estimates): Interactive effects: Absence of specific data: Mixtures:	Not determined. Not determined. . None known. None known. None known. None known. None known. None known. Not determined. Not determined. Not determined. Not determined. Not determined. Not applicable. Not applicable.
11.1i 11.1j 11.1k 11.1k 11.1m 11.1m 11.1n 11.1n 11.1n 11.1n 11.1n 11.1n 11.1n 11.1r 11.1r 11.1s 11.1t 11.1v 11.1v	STOT-single exposure: STOT-repeated exposure: Aspiration hazard: Information on the likely routes of exposure (inhalation, ingestion, skin and eye contact): Ingestion: Inhalation: Skin contact: Eye contact: Symptoms related to the physical, chemical and toxicological characteristics: Delayed and immediate effects as well as chronic effects from short and long term exposure: Numerical measures of toxicity (such as acute toxicity estimates): Interactive effects: Absence of specific data: Mixtures: Mixture vs. substance information:	Not determined. Not determined. . None known. Not determined. Not determined. Not determined. Not determined. Not applicable. Not applicable. Not applicable.
11.1i 11.1j 11.1k 11.1k 11.1m 11.1m 11.1n 11.1n 11.1n 11.1n 11.1n 11.1n 11.1n 11.1r 11.1s 11.1s 11.1v 11.1v 11.1x	STOT-single exposure: STOT-repeated exposure: Aspiration hazard: Information on the likely routes of exposure (inhalation, ingestion, skin and eye contact): Ingestion: Inhalation: Skin contact: Eye contact: Symptoms related to the physical, chemical and toxicological characteristics: Delayed and immediate effects as well as chronic effects from short and long term exposure: Numerical measures of toxicity (such as acute toxicity estimates): Interactive effects: Absence of specific data: Mixtures: Mixture vs. substance information: Classification by National Toxicity Program (NTP):	Not determined. Not determined. . None known. Not determined. Not determined. Not determined. Not determined. Not applicable. Not applicable. Not applicable. Not classified.
11.1i 11.1j 11.1k 11.1k 11.1m 11.1m 11.1n 11.1n 11.1n 11.1n 11.1n 11.1n 11.1n 11.1r 11.1r 11.1s 11.1t 11.1v 11.1v	STOT-single exposure: STOT-repeated exposure: Aspiration hazard: Information on the likely routes of exposure (inhalation, ingestion, skin and eye contact): Ingestion: Inhalation: Skin contact: Eye contact: Symptoms related to the physical, chemical and toxicological characteristics: Delayed and immediate effects as well as chronic effects from short and long term exposure: Numerical measures of toxicity (such as acute toxicity estimates): Interactive effects: Absence of specific data: Mixtures: Mixture vs. substance information: Classification by National Toxicity Program (NTP): Classification by International Agency for Research	Not determined. Not determined. . None known. Not determined. Not determined. Not determined. Not determined. Not applicable. Not applicable. Not applicable.
11.1i 11.1j 11.1k 11.1k 11.1m 11.1m 11.1n 11.1n 11.1n 11.1n 11.1n 11.1n 11.1r 11.1r 11.1s 11.1t 11.1v 11.1v 11.1x 11.1y	STOT-single exposure: STOT-repeated exposure: Aspiration hazard: Information on the likely routes of exposure (inhalation, ingestion, skin and eye contact): Ingestion: Inhalation: Skin contact: Eye contact: Symptoms related to the physical, chemical and toxicological characteristics: Delayed and immediate effects as well as chronic effects from short and long term exposure: Numerical measures of toxicity (such as acute toxicity estimates): Interactive effects: Absence of specific data: Mixtures: Mixture vs. substance information: Classification by National Toxicity Program (NTP): Classification by International Agency for Research on Cancer (IARC):	Not determined. Not determined. . None known. Not determined. Not determined. Not determined. Not determined. Not applicable. Not applicable. Not applicable. Not classified.
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12.5	Results of PBT and vPvB assessment:	ective: 01/06/2020; Supersedes: F17-637-8-E; Page 5 of 6 Not determined.
12.6	Other adverse effects:	No data available.
Sectio	n 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	Dispose of waste and residues in accordance with local authority
	their safe handling and methods of disposal,	requirements. For the safety of persons conducting disposal, recycling
	including the disposal of any contaminated	or reclamation activities, please refer to the information in Section 8
	packaging:	(exposure controls and personal protection) of the SDS.
	n 14: Transport information	1
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	No.
	Model Regulations (IMDG Code, ADR, RID, and	
	ADN)?:	
14.5b	Is it a marine pollutant according to the IMDG	No.
	code?:	
14.6	Special precautions for user:	None known.
14.7	Transport in bulk according to Annex II of	Not applicable.
	MARPOL and the IBC code:	
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	n 15: Regulatory information	
15.1	Safety, health and environmental	
	regulations/legislation specific for the substance	
	or mixture:	
15.1a	Regional safety, health and environmental	None known.
	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}:	
		Not listed
15.1h	Annex XIV substances subject to authorization:	Not listed.
15.11	Substances of very high concern:	Not listed.
15.1j	Approved code of practice:	Classification and labeling of substances and preparations dangerous
45.41		for supply. Safety data sheets for substances and preparations.
15.1k	Guidance notes:	Workplace exposure limits EH40.
15.1I	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:	Substance is not considered hazardous for Health Canada WHMIS
. 0.2u		2015.
Section	n 16: Other information	
16.1	Other information:	
16.1a	Date of revision:	01/06/2020
16.1b	SDS number and revision:	F17-637-8-F
16.1c	Supersedes SDS number and revision:	F17-637-8-E

Supersedes SDS number and revision:	F17-637-8-E
Changes made to the previous version of the SDS:	Reviewed and updated information; updates for Health Canada;
	updated document control numbers.
Key/legend to abbreviations and acronyms used in	ACGIH American Conference of Governmental Industrial Hygienists.
the SDS:	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.
	Changes made to the previous version of the SDS: Key/legend to abbreviations and acronyms used in

		FAM-VDVAD-FMK SDS; Doc# F17-637-8-F; Effectiv	ve: 01/06/2020; Supersedes: F17-637-8-E; Page 6 of 6
		A	TE Acute Toxicity Estimate.
		B	CF Bio Concentration Factor.
		C	AS Chemical Abstracts Service.
		CI	LP Classification, Labelling and Packaging.
			MR Carcinogen, Mutagen or Reproductive toxicant.
			OD Chemical Oxygen Demand.
			C European Commission.
			C50 Half maximal effective concentration.
			H40 Resource containing the list of workplace exposure limits for use
			ith the Control of Substances Hazardous to Health Regulations.
			NECS European Inventory of Existing Commercial chemical
			ubstances.
			LINCS European List of Notified Chemical Substances.
			U European Union.
			HS Globally Harmonized System of Classification and Labelling of
			hemicals.
			Statement GHS Hazard statement.
			TA International Air Transport Association.
			C Intermediate Bulk Container.
			50 Half maximal inhibitory concentration.
			IDG International Maritime Dangerous Goods.
			C50 Median lethal concentration.
			D50 Median lethal dose.
			ogPow logarithm of the octanol/water partition coefficient.
			ARPOL 73/78 International Convention for the Prevention of
			ollution From Ships, 1973 as modified by the Protocol of 1978.
			EL Occupational Exposure Limit.
			SHA Occupational Safety and Health Administration (USA).
			BT Persistent, Bioaccumulative, and Toxic.
		PI	EL Permissible Exposure Limit.
		RI	ID The Regulations concerning the International Carriage of
		Da	angerous Goods by Rail.
		S	ADT Self-Accelerating Decomposition Temperature.
			ARA Superfund Amendments and Reauthorization Act.
			CBA Self-Contained Breathing Apparatus.
			DS Safety Data Sheet.
			TOT Specific Target Organ Toxicity.
			TOT-RE Specific Target Organ Toxicity - Repeated Exposure.
			TOT-SE Specific Target Organ Toxicity - Single Exposure.
			N United Nations.
			SA United States of America.
		-	PvB very Persistent very bioaccumulative.
			HMIS Workplace Hazardous Materials Information System.
16.1f	Full text		I statements were written out in full.
		ents not written out in full elsewhere:	
DISCLA			naterial designated and may not be valid for such material used
			any process. Such information is, to the best of the company's
			is of the date indicated. However, no warranty guarantee or
			ility, or completeness. It is the user's responsibility to satisfy
		himself as to the suitability of such information	
		END	OF SDS

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TECHNOLOGIES

Sectio	n 1: Identification of the substance/mixture and of th	e 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	For research use only. Not for use in diagnostic procedures.
	mixture and uses advised against:	
1.2a	Brief description of what the substance or mixture is	A buffered diluent for use in research laboratory techniques.
	intended to do:	
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.
Sectio	n 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	Does not meet the criteria for classification.
	{CLP}:	
2.1c	The most important adverse physiochemical, human	Prolonged skin contact may cause redness and irritation. Refer to
	health, and environmental effects:	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? Other hazards which do not result in classification:	Not applicable. Contains sodium azide (NaN ₃ , CAS #26628-22-8; EC #247-852-1) at
2.3b	Other nazards which do not result in classification:	
		Solution of the second description of the
		the threshold for hazard classification, but may cause redness and irritation after prolonged exposure.
Sectio	n 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:	Item is a mixture.
	The chemical identity and concentration or	
	concentration ranges of all ingredients which are	
	hazardous and are present above their cut-off levels:	
	3.2a Chemical identity:	No ingredients identified for reporting in this section.
	n 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.

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	<u>10X Apoptosis Wash Buffer SDS; Doc# F17-535-2-0</u>	C; Effective: 5/19/17; Supersedes: F17-535-2-B; Page 2 of 6
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;
4.10	Skin contact.	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	Contains sodium azide, sodium chloride, and phosphates which are
7.4	and delayed:	below the threshold for hazard classification, but may cause redness
	allu uelayeu.	
4.0		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	No specific first aid measures noted, but first aid may still be required
	special treatment needed:	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
1.00		protective equipment.
Soctio	on 5: Firefighting measures	
5.1	Extinguishing media:	This product is not flommable. Use firs outinguishing modie
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	This product is not flammable. Product is not explosive. No dangerous
	mixture:	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
5.5	Advice for menginers.	ignition sources. No smoking.
5.3a	Changed firstighting proceedures:	No specific firefighting procedure given.
	Special firefighting procedures: Special protective equipment and precautions for	
5.3b		Wear full protective clothing, including self-contained breathing
	firefighters:	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.
Sectio	on 6: Accidental release measures	
6.1	Personal precautions, protective equipment, and	Line waste stilled a surface and an analysiste for a sumary disc sure to sight
		Use protective equipment appropriate for surrounding materials.
6.1a	emergency procedures:	Use protective equipment appropriate for surrounding materials.
U. 10	emergency procedures: General release measures:	
5. ia	emergency procedures: General release measures:	No specific emergency measures are required other than good
0.1a		No specific emergency measures are required other than good laboratory hygiene and safety practices for small spills. Wear suitable
J. 1a		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
	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	General release measures: Advice for non-emergency personnel; personal	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). No specific emergency measures are required other than good
	General release measures: Advice for non-emergency personnel; personal precautions, protective equipment and emergency	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). No specific emergency measures are required other than good laboratory hygiene and safety practices. Wear suitable protective
	General release measures: Advice for non-emergency personnel; personal	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). 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,
	General release measures: Advice for non-emergency personnel; personal precautions, protective equipment and emergency	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). 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
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	General release measures: Advice for non-emergency personnel; personal precautions, protective equipment and emergency	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). 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
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	General release measures: Advice for non-emergency personnel; personal precautions, protective equipment and emergency	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). 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
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6.1b	General release measures: 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 for small spills. Wear suitable protective clothing, gloves and eye or face protection. Consult professional emergency personnel if concerned (see Section 8). 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.
	General release measures: Advice for non-emergency personnel; personal precautions, protective equipment and emergency procedures: Advice for emergency responders; personal	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). 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.
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6.1b 6.1c	General release measures: Advice for non-emergency personnel; personal precautions, protective equipment and emergency procedures: Advice for emergency responders; personal precautions, protective equipment and emergency procedures:	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). 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. 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).
6.1b 6.1c 6.2	General release measures: Advice for non-emergency personnel; personal precautions, protective equipment and emergency procedures: Advice for emergency responders; personal precautions, protective equipment and emergency procedures: Advice for emergency responders; personal precautions, protective equipment and emergency procedures: Environmental precautions:	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). 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. 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). Do not allow to enter drains, sewers, or watercourses.
6.1b 6.1c	General release measures: Advice for non-emergency personnel; personal precautions, protective equipment and emergency procedures: Advice for emergency responders; personal precautions, protective equipment and emergency procedures:	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). 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. 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). Do not allow to enter drains, sewers, or watercourses.
6.1b 6.1c 6.2	General release measures: Advice for non-emergency personnel; personal precautions, protective equipment and emergency procedures: Advice for emergency responders; personal precautions, protective equipment and emergency procedures: Advice for emergency responders; personal precautions, protective equipment and emergency procedures: Environmental precautions: Methods and materials for containment and	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). 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. 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). Do not allow to enter drains, sewers, or watercourses. Contain any spills with dikes or absorbent materials to prevent
6.1b 6.1c 6.2	General release measures: Advice for non-emergency personnel; personal precautions, protective equipment and emergency procedures: Advice for emergency responders; personal precautions, protective equipment and emergency procedures: Advice for emergency responders; personal precautions, protective equipment and emergency procedures: Environmental precautions:	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). 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. 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). Do not allow to enter drains, sewers, or watercourses.

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	10X Apoptosis Wash Butter SDS; Doc# F17-535-2	-C; Effective: 5/19/17; Supersedes: F17-535-2-B; Page 3 of 6 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.
Sectio	n 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	n 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 8.2d	Ventilation controls: Reference to other sections:	Provide adequate ventilation. Refer to Section 5 for additional information.
8.2u 8.2e	Eye/face protection:	Wear approved chemical safety goggles where eye exposure is
8.2f	Skin protection:	reasonably probable or face shield if risk of splashing. 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 8.2l	Thermal hazards:	None known under normal conditions of use. Not determined.
0.21	Environmental exposure controls:	
Sectio	n 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.

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1.1ab	Other information: n 12: Ecological information Toxicity:	
11.1z 11.1ab		
	Other Information:	
	Classification by OSHA 13:	Not classified. None.
-	on Cancer (IARC):	
1.1x 11.1y	Classification by International Agency for Research	Not classified.
<u>11.1w</u> 11.1x	Mixture vs. substance information: Classification by National Toxicity Program (NTP):	See Section 3 for any substances in the mixture. Not classified.
11.1v	Mixtures:	Item is a mixture.
11.1u	Absence of specific data:	Not applicable.
11.1t	Interactive effects:	Not determined.
11.1s	Numerical measures of toxicity (such as acute toxicity estimates):	Not determined.
11 1-	effects from short and long term exposure:	Net determined
11.1r	Delayed and immediate effects as well as chronic	Not determined.
11.14	toxicological characteristics:	
1.1p 1.1q	Eye contact: Symptoms related to the physical, chemical and	Spray and vapor in the eyes may cause irritation and smarting. No specific symptoms noted.
1.10	Skin contact:	Liquid may irritate skin and cause redness.
		system and cause coughing.
1.1n	Inhalation:	In high concentrations, vapors may irritate throat and respiratory
11.1m	Ingestion:	May cause discomfort if swallowed.
11.11	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.
11.1k	Aspiration hazard:	Not determined.
11.1j	STOT-repeated exposure:	Not determined.
11.1i	STOT-single exposure:	Not determined.
<u>11.1g</u> 11.1h	Carcinogenicity: Reproductive toxicity:	Not determined. Not determined.
11.1f	Germ cell mutagenicity:	Not determined.
11.1e	Respiratory or skin sensitization:	Not determined.
1.1d	Serious eye damage/irritation:	Not determined.
11.1c	Skin corrosion/irritation:	Not determined.
11.1b	Acute toxicity:	Not determined.
11.1 11.1a	Name:	10X Apoptosis Wash Buffer
Sectior	n 11: Toxicological information Information on toxicological effects:	
0.6	Hazardous decomposition products:	None under normal conditions.
		oxidizers, and metals.
10.5	Incompatible materials:	Avoid contact with halogenated hydrocarbons, strong acids, strong
10.4	Conditions to avoid:	To avoid product degradation, avoid exposure to high temperatures o direct sunlight or light.
10.3 10.4	Possibility of hazardous reactions: Conditions to avoid:	Hazardous polymerization: will not polymerize.
10.2	Chemical stability:	Stable under normal temperature conditions.
10.1	Reactivity:	No data available.
	n 10: Stability and reactivity	
5.2U		
9.2 9.2a	Other physical or chemical parameters:	None.
9.1t 9.2	Oxidizing properties: Other information:	Not determined.
9.1s	Explosive properties:	Not determined.
9.1r	Viscosity:	Not determined.
9.1q	Decomposition temperature (°C):	Not determined.
9.1p	Auto-ignition temperature (°C):	Not determined.
9.1n 9.1o	Partition coefficient (N-octanol/water):	Not determined.
9.1m 9.1n	Relative density: Solubility(ies):	Not determined. Soluble in water.
9.11	Vapor density (Air =1):	Not determined.
9.1k	Vapor pressure:	Not determined.
9.1j	Upper/lower flammability or explosive limits:	Not applicable.
9.1i	Flammability (solid, gas):	Not applicable.
9.1 <u>9</u> 9.1h	Evaporation rate:	Not determined.
9.1f 9.1g	Initial boiling point and boiling range: Flash point (°C):	<100°C @ 760 mm Hg. Not applicable.
ר א ר	Melting point/freezing point (°C):	Not determined.
9.1e	Malting point/treating point (°(`);	Not determined

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no	10X Apoptosis Wash Buffor

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

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16.1 046-	ther information	
	r information:	40 May 2017
	of revision:	19-May-2017
		F17-535-2-B
6.1d Chan	ges made to the previous version of the SDS:	Reviewed and updated document control numbers.
16.1c Super 16.1d Chan	number and revision: rsedes SDS number and revision: ges made to the previous version of the SDS: egend to abbreviations and acronyms used in DS:	 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 us with the Control of Substances Hazardous to Health Regulations. EINECS European Inventory of Existing Commercial 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.
		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.
	ext of hazard statements and/or precautionary nents not written out in full elsewhere:	All statements were written out in full.
DISCLAIMER:	This information relates only to the speci in combination with any other materials of knowledge and belief, accurate and reliab	fic material designated and may not be valid for such material user or in any process. Such information is, to the best of the company's ole as of the date indicated. However, no warranty guarantee or eliability, or completeness. It is the user's responsibility to satisfy nation for his own particular use.

Fixative SDS; Doc#F17-536-2-D; Effective: 5/12/17; Supersedes: F17-536-2-C; Page 1 of 8

ImpunoChemistry TECHNOLOGIESLLC

Sectio	n 1: Identification of the substance/mixtu	re and of the c	ompany/undertaking
1.1	Product identifier:		Fixative
1.1a	Other means of identification:		
1.1b	Alternative product name(s)/ sy	nonyms:	Fixative, Fix
1.1c	Product number/Catalog #(s):	- , -	536, 636
1.1d			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: Address:		ImmunoChemistry Technologies, LLC (ICT)
1.3b			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 1.4	Contact person at ICT: Emergency telephone number:		Quality Documentation Department 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.
Sectio	n 2: Hazards identification		
2.1	Classification of the substance or mixture:		
2.1a	Product is a:	Mixture.	
2.1b 2.1c	1272/2008 {CLP}: H302 Act H312 Act H315 Ski H319 Eye H317 Ski H341 Ge H350 Ca H371 Spo H335 Spo		Liquids, (Category 4) (USA Only). toxicity, Oral (Category 4). toxicity, Dermal (Category 4). ritation, (Category 2). ritation, (Category 2). ensitisation (Category 1). cell mutagenicity (Category 2). iogenicity (Category 1B). ic Target Organ Toxicity - Single Exposure (Category 2). ic Target Organ Toxicity - Single Exposure (Category 3) - Respiratory Tract. ct with liquid may cause immediate harm to skin, mouth, and eyes. Refer to 9-12.
2.2	environmental effects: Label elements:		
2.2a	GHS label elements, including		
	precautionary statements:		
2.2b	Contains:	Formaldehy	de <10%; and Methanol <5%.
2.2c	Labeling in accordance with (EC) No. 1272/2008:	•	
2.2d	Hazard Pictograms (Hazard Symbols):	GHS07 Excl	amation mark. GHS08 Health hazard.
2.2e	Signal word:	Danger.	
2.2f	H302 Harmf H312 Harmf H319 Cause H315 Cause H317 May ca H350 May ca H341 Suspe H371 May ca		ustible liquids. ul if swallowed. ul if in contact with skin. s serious eye irritation. s skin irritation. ause an allergic skin reaction. ause cancer. icted of causing genetic defects. ause damage to organs. ause respiratory irritation.
2.2g	Precautionary statements:	P201 Obtain P280 Wear P301 + P312	a special instructions before use. protective gloves/ protective clothing/ eye protection/ face protection. 2 + P330 IF SWALLOWED: Call a POISON CENTER or doctor/ physician if vell. Rinse mouth.

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	Fixative SD				es: F17-536-2-C; Page 2 of 8 erned: Get medical advice/ attention.	
					ash occurs: Get medical advice/ attention.	
2.2h	Supplementary precaution statements: P270 Do no		Do not	eat, drink or smoke	when using this product.	
				breathing mist/vapors/spray.		
	P272 Conta		Contam	taminated work clothing should not be allowed out of the workplace. a poison center or doctor if you feel unwell.		
	P321 Speci					
				c treatment (see on t		
	P330 Rinse P362 Take			c measures (see on the neuth	this label).	
					ning	
				e off contaminated clothing. h contaminated clothing before reuse.		
		P501	1 Dispose of contents/containers in accordance with local regulations.			
			P302+P352 If on skin: Wash with plenty of soap and water.			
					ictim to fresh air and keep at rest in a position	
				or breathing.		
					se cautiously with water for several minutes. Remove	
		conta	ict lense		sy to do. Continue rinsing.	
2.3	Other hazards:		50	No additional information available.		
2.3a	Does the chemical meet the		/B?	Not applicable.		
2.3b	Other hazards which do not	result in classification:		Not known.		
Sectio	n 3: Composition/informatio	n on ingrediente				
3.1	Substance:			Item is a mixture th	nerefore Section 3.1 is not applicable; see Section 3.2.	
3.2	Mixture:			Item is a mixture.		
	The chemical identity and co	ncentration or concent	tration			
	ranges of all ingredients which					
	present above their cut-off le					
	3.2a Chemical identity:			Formaldehyde		
	3.2b Common name, synony	/ms, etc.:		CH ₂ O; Index# 605-		
	3.2c CAS number and			<u>3.2e %</u>	3.2f Classification according to (EC) No. 1272/2008	
	other unique identifiers:	<u>3.2d EC numbe</u>	<u>r:</u>	Concentration:	<u>{CLP}:</u>	
	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.	
					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:					
- 5	3.2h Chemical identity:			Methanol		
	3.2i Common name, synony	ms, etc.:		CH ₄ O; Index # 603	3-001-00-X	
	3.2j CAS number and			3.21 %	3.2m Classification according to (EC) No. 1272/2008	
	other unique identifiers:	3.2k EC numbe	r:	Concentration:	{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.	
0						
	n 4: First aid measures			Conquiting	alaion and provide CDO information. If a second second	
4.1	Description of first aid mea	asures:			sician 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		
				responders should wear gloves/skin protection to avoid contact with product.		
4.1a	Inhalation:				ir and keep at rest in a comfortable position for	
- 1 .1a					eathing, give artificial respiration. Rinse nose and mouth	
				with water. Get medical attention.		
4.1b	Skin contact:				clothing/shoes and immediately wash all exposed skin	
				with soap and wate	er for at least 15 minutes. Take victim immediately to	
				hospital. Get media		
4.1c	Eye contact:				ion immediately. Promptly wash eyes with plenty of	
				water while lifting t	he eyelids. Make sure to remove any contact lenses	
					bre rinsing. Continue to rinse for at least 15 minutes.	
4.1d	Ingestion:			Get medical attenti	ion immediately and if any discomfort continues. NEVER	
	-			MAKE AN UNCON	SCIOUS PERSON VOMIT OR DRINK FLUIDS! Rinse	
				mouth thoroughly.	Do not induce vomiting without advice from poison	
				control center or m	nedical professional.	
4.2	Most important symptoms	and effects, both act	ute		ons 2 and 11 for most important known symptoms and	
	and delayed:			effects.		
4.2a	Inhalation:			May cause respira	tory irritation.	

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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 4.3	Ingestion: Indication of any immediate medical attention and special treatment needed:	Harmful if swallowed. Get medical attention immediately.
4.3a	Notes to physician/first responder:	Treat symptomatically. Refer to Sections 5-8 for advice on personal protective equipment.
Sectio	n 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.
Sectio 6.1	n 6: Accidental release measures Personal precautions, protective equipment, and	Use protective equipment appropriate for surrounding materials and to avoid contamination.
6.1a	emergency procedures: General release measures:	No specific emergency measures are required other than good laboratory
0.14		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 and eye or face protection.
6.1c	Advice for emergency responders; personal precautions, protective equipment and emergency procedures:	for large spills or if concerned. 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.
Sectio	n 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
7.2	Conditions for safe storage, including any incompatibilities:	 hygiene and safety practices. 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.

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		Avoid spills and release into the environment; keep away from
7.3	Specific end use(s):	watercourses.
1.3	Specific end use(s):	For research use only. Not for use in diagnostic procedures.
	8: Exposure controls/personal protection	
<u>8.1</u> 8.1a	Control parameters: 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 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 8.1c	Appropriate engineering controls: 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 8.2e	Reference to other sections: Eye/face protection:	Refer to Section 5 for additional information. 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) 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

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	<u>- 120070 000, 000#1 11-000-2-0, Elle</u>	and must be evaluated by an industrial bygionist and cafety officer familiar
		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.
8.21	Environmental exposure controls:	Not determined.
Section	n 9: Physical and chemical properties	
9.1	Information on basic physical and chemical	
9.1		•
0.4	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.
9.11	Vapor density (Air =1):	Not applicable.
9.1m	Relative density:	Not determined.
9.1n	Solubility(ies):	Readily miscible in water.
-		
9.10	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.
0.24		
Santia	n 10: Stability and reactivity	
Section	Reactivity:	
40.4		
10.1		Strong acids. Strong oxidizing substances.
10.2	Chemical stability:	Stable under normal temperature conditions.
10.2 10.3	Chemical stability: Possibility of hazardous reactions:	Stable under normal temperature conditions. Not determined.
10.2	Chemical stability:	Stable under normal temperature conditions.
10.2 10.3	Chemical stability: Possibility of hazardous reactions:	Stable under normal temperature conditions. Not determined.
10.2 10.3 10.4	Chemical stability: Possibility of hazardous reactions: Conditions to avoid:	Stable under normal temperature conditions. Not determined. Heat, flames, and sparks. Avoid exposure to high temperatures or direct sunlight.
10.2 10.3 10.4	Chemical stability: Possibility of hazardous reactions:	Stable under normal temperature conditions. Not determined. Heat, flames, and sparks. Avoid exposure to high temperatures or direct sunlight. Strong bases, strong acids, strong oxidizing agents, alkali metals, amines,
10.2 10.3	Chemical stability: Possibility of hazardous reactions: Conditions to avoid:	Stable under normal temperature conditions. Not determined. Heat, flames, and sparks. Avoid exposure to high temperatures or direct sunlight. Strong bases, strong acids, strong oxidizing agents, alkali metals, amines, acid chlorides, acid anhydrides, reducing agents, peroxides, isocyanates,
10.2 10.3 10.4 10.5	Chemical stability: Possibility of hazardous reactions: Conditions to avoid: Incompatible materials:	Stable under normal temperature conditions. Not determined. Heat, flames, and sparks. Avoid exposure to high temperatures or direct sunlight. Strong bases, strong acids, strong oxidizing agents, alkali metals, amines, acid chlorides, acid anhydrides, reducing agents, peroxides, isocyanates, phenol, aniline.
10.2 10.3 10.4	Chemical stability: Possibility of hazardous reactions: Conditions to avoid:	Stable under normal temperature conditions. Not determined. Heat, flames, and sparks. Avoid exposure to high temperatures or direct sunlight. Strong bases, strong acids, strong oxidizing agents, alkali metals, amines, acid chlorides, acid anhydrides, reducing agents, peroxides, isocyanates, phenol, aniline. None under normal conditions. High temperatures generate:
10.2 10.3 10.4 10.5	Chemical stability: Possibility of hazardous reactions: Conditions to avoid: Incompatible materials:	Stable under normal temperature conditions. Not determined. Heat, flames, and sparks. Avoid exposure to high temperatures or direct sunlight. Strong bases, strong acids, strong oxidizing agents, alkali metals, amines, acid chlorides, acid anhydrides, reducing agents, peroxides, isocyanates, phenol, aniline.
10.2 10.3 10.4 10.5 10.6	Chemical stability: Possibility of hazardous reactions: Conditions to avoid: Incompatible materials: Hazardous decomposition products:	Stable under normal temperature conditions. Not determined. Heat, flames, and sparks. Avoid exposure to high temperatures or direct sunlight. Strong bases, strong acids, strong oxidizing agents, alkali metals, amines, acid chlorides, acid anhydrides, reducing agents, peroxides, isocyanates, phenol, aniline. None under normal conditions. High temperatures generate:
10.2 10.3 10.4 10.5 10.6 Section	Chemical stability: Possibility of hazardous reactions: Conditions to avoid: Incompatible materials: Hazardous decomposition products: n 11: Toxicological information	Stable under normal temperature conditions. Not determined. Heat, flames, and sparks. Avoid exposure to high temperatures or direct sunlight. Strong bases, strong acids, strong oxidizing agents, alkali metals, amines, acid chlorides, acid anhydrides, reducing agents, peroxides, isocyanates, phenol, aniline. None under normal conditions. High temperatures generate:
10.2 10.3 10.4 10.5 10.6 Section	Chemical stability: Possibility of hazardous reactions: Conditions to avoid: Incompatible materials: Hazardous decomposition products:	Stable under normal temperature conditions. Not determined. Heat, flames, and sparks. Avoid exposure to high temperatures or direct sunlight. Strong bases, strong acids, strong oxidizing agents, alkali metals, amines, acid chlorides, acid anhydrides, reducing agents, peroxides, isocyanates, phenol, aniline. None under normal conditions. High temperatures generate:
10.2 10.3 10.4 10.5 10.6 Section	Chemical stability: Possibility of hazardous reactions: Conditions to avoid: Incompatible materials: Hazardous decomposition products: n 11: Toxicological information	Stable under normal temperature conditions. Not determined. Heat, flames, and sparks. Avoid exposure to high temperatures or direct sunlight. Strong bases, strong acids, strong oxidizing agents, alkali metals, amines, acid chlorides, acid anhydrides, reducing agents, peroxides, isocyanates, phenol, aniline. None under normal conditions. High temperatures generate:
10.2 10.3 10.4 10.5 10.6 Section 11.1 11.1a	Chemical stability: Possibility of hazardous reactions: Conditions to avoid: Incompatible materials: Hazardous decomposition products: n 11: Toxicological information Information on toxicological effects: Name:	Stable under normal temperature conditions. Not determined. Heat, flames, and sparks. Avoid exposure to high temperatures or direct sunlight. Strong bases, strong acids, strong oxidizing agents, alkali metals, amines, acid chlorides, acid anhydrides, reducing agents, peroxides, isocyanates, phenol, aniline. None under normal conditions. High temperatures generate: Vapors/gases/fumes of: Formaldehyde.
10.2 10.3 10.4 10.5 10.6 Section 11.1 11.1a	Chemical stability: Possibility of hazardous reactions: Conditions to avoid: Incompatible materials: Hazardous decomposition products: n 11: Toxicological information Information on toxicological effects:	Stable under normal temperature conditions. Not determined. Heat, flames, and sparks. Avoid exposure to high temperatures or direct sunlight. Strong bases, strong acids, strong oxidizing agents, alkali metals, amines, acid chlorides, acid anhydrides, reducing agents, peroxides, isocyanates, phenol, aniline. None under normal conditions. High temperatures generate: Vapors/gases/fumes of: Formaldehyde. .
10.2 10.3 10.4 10.5 10.6 Section 11.1	Chemical stability: Possibility of hazardous reactions: Conditions to avoid: Incompatible materials: Hazardous decomposition products: n 11: Toxicological information Information on toxicological effects: Name:	Stable under normal temperature conditions. Not determined. Heat, flames, and sparks. Avoid exposure to high temperatures or direct sunlight. Strong bases, strong acids, strong oxidizing agents, alkali metals, amines, acid chlorides, acid anhydrides, reducing agents, peroxides, isocyanates, phenol, aniline. None under normal conditions. High temperatures generate: Vapors/gases/fumes of: Formaldehyde. . </td
10.2 10.3 10.4 10.5 10.6 Section 11.1 11.1a	Chemical stability: Possibility of hazardous reactions: Conditions to avoid: Incompatible materials: Hazardous decomposition products: n 11: Toxicological information Information on toxicological effects: Name:	Stable under normal temperature conditions. Not determined. Heat, flames, and sparks. Avoid exposure to high temperatures or direct sunlight. Strong bases, strong acids, strong oxidizing agents, alkali metals, amines, acid chlorides, acid anhydrides, reducing agents, peroxides, isocyanates, phenol, aniline. None under normal conditions. High temperatures generate: Vapors/gases/fumes of: Formaldehyde. . </td
10.2 10.3 10.4 10.5 10.6 Section 11.1 11.1a	Chemical stability: Possibility of hazardous reactions: Conditions to avoid: Incompatible materials: Hazardous decomposition products: n 11: Toxicological information Information on toxicological effects: Name:	Stable under normal temperature conditions. Not determined. Heat, flames, and sparks. Avoid exposure to high temperatures or direct sunlight. Strong bases, strong acids, strong oxidizing agents, alkali metals, amines, acid chlorides, acid anhydrides, reducing agents, peroxides, isocyanates, phenol, aniline. None under normal conditions. High temperatures generate: Vapors/gases/fumes of: Formaldehyde. . </td
10.2 10.3 10.4 10.5 10.6 Section 11.1 11.1a	Chemical stability: Possibility of hazardous reactions: Conditions to avoid: Incompatible materials: Hazardous decomposition products: n 11: Toxicological information Information on toxicological effects: Name:	Stable under normal temperature conditions. Not determined. Heat, flames, and sparks. Avoid exposure to high temperatures or direct sunlight. Strong bases, strong acids, strong oxidizing agents, alkali metals, amines, acid chlorides, acid anhydrides, reducing agents, peroxides, isocyanates, phenol, aniline. None under normal conditions. High temperatures generate: Vapors/gases/fumes of: Formaldehyde. . </td
10.2 10.3 10.4 10.5 10.6 Section 11.1 11.1a 11.1b	Chemical stability: Possibility of hazardous reactions: Conditions to avoid: Incompatible materials: Hazardous decomposition products: n 11: Toxicological information Information on toxicological effects: Name: Acute toxicity:	Stable under normal temperature conditions. Not determined. Heat, flames, and sparks. Avoid exposure to high temperatures or direct sunlight. Strong bases, strong acids, strong oxidizing agents, alkali metals, amines, acid chlorides, acid anhydrides, reducing agents, peroxides, isocyanates, phenol, aniline. None under normal conditions. High temperatures generate: Vapors/gases/fumes of: Formaldehyde. . </td
10.2 10.3 10.4 10.5 10.6 Section 11.1 11.1a 11.1b	Chemical stability: Possibility of hazardous reactions: Conditions to avoid: Incompatible materials: Hazardous decomposition products: n 11: Toxicological information Information on toxicological effects: Name: Acute toxicity: Skin corrosion/irritation:	Stable under normal temperature conditions. Not determined. Heat, flames, and sparks. Avoid exposure to high temperatures or direct sunlight. Strong bases, strong acids, strong oxidizing agents, alkali metals, amines, acid chlorides, acid anhydrides, reducing agents, peroxides, isocyanates, phenol, aniline. None under normal conditions. High temperatures generate: Vapors/gases/fumes of: Formaldehyde. . </td
10.2 10.3 10.4 10.5 10.6 <u>Section</u> 11.1 11.1a 11.1b	Chemical stability: Possibility of hazardous reactions: Conditions to avoid: Incompatible materials: Hazardous decomposition products: n 11: Toxicological information Information on toxicological effects: Name: Acute toxicity: Skin corrosion/irritation:	Stable under normal temperature conditions. Not determined. Heat, flames, and sparks. Avoid exposure to high temperatures or direct sunlight. Strong bases, strong acids, strong oxidizing agents, alkali metals, amines, acid chlorides, acid anhydrides, reducing agents, peroxides, isocyanates, phenol, aniline. None under normal conditions. High temperatures generate: Vapors/gases/fumes of: Formaldehyde. . </td
10.2 10.3 10.4 10.5 10.6 <u>Section 11.1</u> 11.1a 11.1b	Chemical stability: Possibility of hazardous reactions: Conditions to avoid: Incompatible materials: Hazardous decomposition products: n 11: Toxicological information Information on toxicological effects: Name: Acute toxicity: Skin corrosion/irritation: Serious eye damage/irritation:	Stable under normal temperature conditions. Not determined. Heat, flames, and sparks. Avoid exposure to high temperatures or direct sunlight. Strong bases, strong acids, strong oxidizing agents, alkali metals, amines, acid chlorides, acid anhydrides, reducing agents, peroxides, isocyanates, phenol, aniline. None under normal conditions. High temperatures generate: Vapors/gases/fumes of: Formaldehyde. . </td
10.2 10.3 10.4 10.5 10.6 <u>Section</u> 11.1 11.1a 11.1b 11.1c 11.1c 11.1d 11.1e	Chemical stability: Possibility of hazardous reactions: Conditions to avoid: Incompatible materials: Hazardous decomposition products: n 11: Toxicological information Information on toxicological effects: Name: Acute toxicity: Skin corrosion/irritation: Serious eye damage/irritation: Respiratory or skin sensitization:	Stable under normal temperature conditions. Not determined. Heat, flames, and sparks. Avoid exposure to high temperatures or direct sunlight. Strong bases, strong acids, strong oxidizing agents, alkali metals, amines, acid chlorides, acid anhydrides, reducing agents, peroxides, isocyanates, phenol, aniline. None under normal conditions. High temperatures generate: Vapors/gases/fumes of: Formaldehyde. . </td
10.2 10.3 10.4 10.5 10.6 <u>Section</u> 11.1 11.1a 11.1b 11.1b <u>11.1c</u> 11.1d 11.1c 11.1d 11.1e 11.1f	Chemical stability: Possibility of hazardous reactions: Conditions to avoid: Incompatible materials: Hazardous decomposition products: n 11: Toxicological information Information on toxicological effects: Name: Acute toxicity: Skin corrosion/irritation: Serious eye damage/irritation: Respiratory or skin sensitization: Germ cell mutagenicity:	Stable under normal temperature conditions. Not determined. Heat, flames, and sparks. Avoid exposure to high temperatures or direct sunlight. Strong bases, strong acids, strong oxidizing agents, alkali metals, amines, acid chlorides, acid anhydrides, reducing agents, peroxides, isocyanates, phenol, aniline. None under normal conditions. High temperatures generate: Vapors/gases/fumes of: Formaldehyde. . </td
10.2 10.3 10.4 10.5 10.6 <u>Section</u> 11.1 11.1a 11.1b 11.1c 11.1c 11.1d 11.1e	Chemical stability: Possibility of hazardous reactions: Conditions to avoid: Incompatible materials: Hazardous decomposition products: n 11: Toxicological information Information on toxicological effects: Name: Acute toxicity: Skin corrosion/irritation: Serious eye damage/irritation: Respiratory or skin sensitization:	Stable under normal temperature conditions. Not determined. Heat, flames, and sparks. Avoid exposure to high temperatures or direct sunlight. Strong bases, strong acids, strong oxidizing agents, alkali metals, amines, acid chlorides, acid anhydrides, reducing agents, peroxides, isocyanates, phenol, aniline. None under normal conditions. High temperatures generate: Vapors/gases/fumes of: Formaldehyde. . </td
10.2 10.3 10.4 10.5 10.6 <u>Section</u> 11.1 11.1a 11.1b 11.1b <u>11.1c</u> 11.1d 11.1c 11.1d 11.1e 11.1f	Chemical stability: Possibility of hazardous reactions: Conditions to avoid: Incompatible materials: Hazardous decomposition products: n 11: Toxicological information Information on toxicological effects: Name: Acute toxicity: Skin corrosion/irritation: Serious eye damage/irritation: Respiratory or skin sensitization: Germ cell mutagenicity:	Stable under normal temperature conditions. Not determined. Heat, flames, and sparks. Avoid exposure to high temperatures or direct sunlight. Strong bases, strong acids, strong oxidizing agents, alkali metals, amines, acid chlorides, acid anhydrides, reducing agents, peroxides, isocyanates, phenol, aniline. None under normal conditions. High temperatures generate: Vapors/gases/fumes of: Formaldehyde. . </td
10.2 10.3 10.4 10.5 10.6 <u>Section</u> 11.1 11.1a 11.1b 11.1b 11.1c 11.1d 11.1c 11.1d	Chemical stability: Possibility of hazardous reactions: Conditions to avoid: Incompatible materials: Hazardous decomposition products: n 11: Toxicological information Information on toxicological effects: Name: Acute toxicity: Skin corrosion/irritation: Serious eye damage/irritation: Respiratory or skin sensitization: Germ cell mutagenicity:	Stable under normal temperature conditions. Not determined. Heat, flames, and sparks. Avoid exposure to high temperatures or direct sunlight. Strong bases, strong acids, strong oxidizing agents, alkali metals, amines, acid chlorides, acid anhydrides, reducing agents, peroxides, isocyanates, phenol, aniline. None under normal conditions. High temperatures generate: Vapors/gases/fumes of: Formaldehyde. . </td

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ACGIH - A2 (Suspected Human Carcinogen).

	Fixative SDS; Doc#F17-536-2-D; Effective	
14 41	Degraduation taxiait	ACGIH - A2 (Suspected Human Carcinogen).
11.1h	Reproductive toxicity:	Formaldehyde: Not determined. Methanol: Not determined.
1.1i	STOT-single exposure:	Formaldehyde: Not determined. Methanol: Not determined.
1.1j	STOT-repeated exposure:	Formaldehyde: Category 3, Respiratory Tract Irritation. Methanol: Not determined.
1.1k	Aspiration hazard:	Formaldehyde: Not determined. Methanol: Not determined.
1.11	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.
1.1m	Ingestion:	Harmful if swallowed.
1.1n	Inhalation:	May cause respiratory irritation.
1.10	Skin contact:	Harmful in contact with skin. Causes skin irritation. May cause an allergi skin reaction.
11.1p	Eye contact:	Causes serious eye irritation.
1.1q	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.
11.1x 11.1y	Classification by International Agency for Research on	Formaldehyde is classified in Group 1: Carcinogenic to Humans. Methanol
y	Cancer (IARC):	is not listed.
11.1z	Classification by OSHA 13:	Formaldehyde is not listed. Methanol is not listed.
11.12 11.1ab	Other information:	Because of the small quantity of product, the health hazard is small.
	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	Dispose of waste and residues in accordance with local authority
	safe handling and methods of disposal, including the disposal of any contaminated packaging:	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: Transport information	
14.1	UN number:	Not applicable.
14.1 14.2	UN number: UN proper shipping name:	Not applicable. Not applicable.
14.1 14.2 14.3	UN number: UN proper shipping name: Transport hazard class(es):	Not applicable. Not applicable. Not applicable.
14.1 14.2 14.3 14.4	UN number: UN proper shipping name: Transport hazard class(es): Packing group:	Not applicable. Not applicable.
14.1 14.2 14.3 14.4 14.5	UN number: UN proper shipping name: Transport hazard class(es): Packing group: Environmental hazards:	Not applicable. Not applicable. Not applicable. Not applicable.
14.1 14.2 14.3 14.4 14.5	UN number: UN proper shipping name: Transport hazard class(es): Packing group: Environmental hazards: Is it environmentally dangerous according to UN Model	Not applicable. Not applicable. Not applicable.
14.1 14.2 14.3 14.4 14.5 14.5a	UN number: UN proper shipping name: Transport hazard class(es): Packing group: Environmental hazards: Is it environmentally dangerous according to UN Model Regulations (IMDG Code, ADR, RID, and ADN)?:	Not applicable. Not applicable. Not applicable. Not applicable.
14.1 14.2 14.3 14.4 14.5 14.5a 14.5b	UN number: UN proper shipping name: Transport hazard class(es): Packing group: Environmental hazards: Is it environmentally dangerous according to UN Model Regulations (IMDG Code, ADR, RID, and ADN)?: Is it a marine pollutant according to the IMDG code?:	Not applicable. Not applicable. Not applicable. Not applicable. The product is not covered by these regulations. No.
Section 14.1 14.2 14.3 14.4 14.5 14.5a 14.5b 14.6 14.7	UN number: UN proper shipping name: Transport hazard class(es): Packing group: Environmental hazards: Is it environmentally dangerous according to UN Model Regulations (IMDG Code, ADR, RID, and ADN)?: Is it a marine pollutant according to the IMDG code?: Special precautions for user: Transport in bulk according to Annex II of MARPOL	Not applicable. Not applicable. Not applicable. Not applicable.
14.1 14.2 14.3 14.4 14.5 14.5a 14.5b 14.6 14.7	UN number: UN proper shipping name: Transport hazard class(es): Packing group: Environmental hazards: Is it environmentally dangerous according to UN Model Regulations (IMDG Code, ADR, RID, and ADN)?: Is it a marine pollutant according to the IMDG code?: Special precautions for user: Transport in bulk according to Annex II of MARPOL and the IBC code:	Not applicable. Not applicable. Not applicable. Not applicable. . The product is not covered by these regulations. No. None known. Not applicable.
14.1 14.2 14.3 14.4 14.5 14.5a 14.5b 14.6 14.7 14.7a	UN number: UN proper shipping name: Transport hazard class(es): Packing group: Environmental hazards: Is it environmentally dangerous according to UN Model Regulations (IMDG Code, ADR, RID, and ADN)?: Is it a marine pollutant according to the IMDG code?: Special precautions for user: Transport in bulk according to Annex II of MARPOL	Not applicable. Not applicable. Not applicable. Not applicable. . The product is not covered by these regulations. No. None known.
14.1 14.2 14.3 14.4 14.5 14.5a 14.5b 14.6 14.7 14.7a 14.7a 14.7b Section	UN number: UN proper shipping name: Transport hazard class(es): Packing group: Environmental hazards: Is it environmentally dangerous according to UN Model Regulations (IMDG Code, ADR, RID, and ADN)?: Is it a marine pollutant according to the IMDG code?: Special precautions for user: Transport in bulk according to Annex II of MARPOL and the IBC code: Other information: Classification for other modes of transport: 15: Regulatory information Safety, health and environmental regulations/legislation specific for the substance or	Not applicable. Not applicable. Not applicable. Not applicable. . The product is not covered by these regulations. No. None known. Not applicable. The product is not considered a dangerous good for transport.
14.1 14.2 14.3 14.4 14.5 14.5a 14.5b 14.6 14.7 14.7a 14.7b Section 15.1	UN number: UN proper shipping name: Transport hazard class(es): Packing group: Environmental hazards: Is it environmentally dangerous according to UN Model Regulations (IMDG Code, ADR, RID, and ADN)?: Is it a marine pollutant according to the IMDG code?: Special precautions for user: Transport in bulk according to Annex II of MARPOL and the IBC code: Other information: Classification for other modes of transport: 15: Regulatory information Safety, health and environmental regulations/legislation specific for the substance or mixture: Regional safety, health and environmental regulations	Not applicable. Not applicable. Not applicable. Not applicable. . The product is not covered by these regulations. No. None known. Not applicable. The product is not considered a dangerous good for transport.
14.1 14.2 14.3 14.4 14.5 14.5a 14.5b 14.6 14.7 14.7 14.7 14.7 14.7 15.1 15.1a	UN number: UN proper shipping name: Transport hazard class(es): Packing group: Environmental hazards: Is it environmentally dangerous according to UN Model Regulations (IMDG Code, ADR, RID, and ADN)?: Is it a marine pollutant according to the IMDG code?: Special precautions for user: Transport in bulk according to Annex II of MARPOL and the IBC code: Other information: Classification for other modes of transport: 15: Regulatory information Safety, health and environmental regulations/legislation specific for the substance or mixture:	Not applicable. Not applicable. Not applicable. Not applicable. . The product is not covered by these regulations. No. None known. Not applicable. The product is not considered a dangerous good for transport. Contact supplier. . USDA OSHA - Formaldehyde Standard Subpart Z 1910.1048. Formaldehyde is listed on 302, 304, 313, and RCRA code U122.
14.1 14.2 14.3 14.4 14.5a 14.5b 14.5a 14.5b 14.6 14.7 14.7a 14.7b Section 15.1 15.1a	UN number: UN proper shipping name: Transport hazard class(es): Packing group: Environmental hazards: Is it environmentally dangerous according to UN Model Regulations (IMDG Code, ADR, RID, and ADN)?: Is it a marine pollutant according to the IMDG code?: Special precautions for user: Transport in bulk according to Annex II of MARPOL and the IBC code: Other information: Classification for other modes of transport: 15: Regulatory information Safety, health and environmental regulations/legislation specific for the substance or mixture: Regional safety, health and environmental regulations specific for the product in question: USA SARA Components (such as 302/311/313):	Not applicable. Not applicable. Not applicable. Not applicable. The product is not covered by these regulations. No. None known. Not applicable. The product is not considered a dangerous good for transport. Contact supplier. . USDA OSHA - Formaldehyde Standard Subpart Z 1910.1048. Formaldehyde is listed on 302, 304, 313, and RCRA code U122. Methanol is listed on 313 and RCRA code U122.
14.1 14.2 14.3 14.4 14.5 14.5a 14.5b 14.6 14.7 14.7a 14.7b Section 15.1a 15.1a 15.1c	UN number: UN proper shipping name: Transport hazard class(es): Packing group: Environmental hazards: Is it environmentally dangerous according to UN Model Regulations (IMDG Code, ADR, RID, and ADN)?: Is it a marine pollutant according to the IMDG code?: Special precautions for user: Transport in bulk according to Annex II of MARPOL and the IBC code: Other information: Classification for other modes of transport: 15: Regulatory information Safety, health and environmental regulations/legislation specific for the substance or mixture: Regional safety, health and environmental regulations specific for the product in question: USA SARA Components (such as 302/311/313): USA Massachusetts Right to Know:	Not applicable. Not applicable. Not applicable. Not applicable. Not applicable. The product is not covered by these regulations. No. None known. Not applicable. The product is not considered a dangerous good for transport. Contact supplier. . USDA OSHA - Formaldehyde Standard Subpart Z 1910.1048. Formaldehyde is listed on 302, 304, 313, and RCRA code U122. Methanol is listed on 313 and RCRA code U122. Formaldehyde and methanol are listed.
14.1 14.2 14.3 14.4 14.5 14.5a 14.5b 14.6 14.7 14.7a 14.7a 14.7b	UN number: UN proper shipping name: Transport hazard class(es): Packing group: Environmental hazards: Is it environmentally dangerous according to UN Model Regulations (IMDG Code, ADR, RID, and ADN)?: Is it a marine pollutant according to the IMDG code?: Special precautions for user: Transport in bulk according to Annex II of MARPOL and the IBC code: Other information: Classification for other modes of transport: 15: Regulatory information Safety, health and environmental regulations/legislation specific for the substance or mixture: Regional safety, health and environmental regulations specific for the product in question: USA SARA Components (such as 302/311/313):	Not applicable. Not applicable. Not applicable. Not applicable. The product is not covered by these regulations. No. None known. Not applicable. The product is not considered a dangerous good for transport. Contact supplier. . USDA OSHA - Formaldehyde Standard Subpart Z 1910.1048. Formaldehyde is listed on 302, 304, 313, and RCRA code U122. Methanol is listed on 313 and RCRA code U122.

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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.
15.11	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.

6.1	Other information:	•
6.1a	Date of revision:	12-May-2017
6.1b	SDS number and revision:	F17-536-2-D
6.1c	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	Version of the SDS: Key/legend to abbreviations and acronyms used in the SDS:	deleted redundant information, etc.). 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. EC50 Half maximal effective concentration. EL40 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. ELINCS Median lethal dose. LogOw logarithm of the octanol/water partition coefficient. MARPOL 73/78 International
		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.

<u>Fi</u> :	cative SDS; Doc#F17-536-2-D; Effective: 5/12/17; Supersedes: F17-536-2-C; Page 8 of 8
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

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TECHNOLOGIES

1.1	n 1: Identification of the substance/mixture and of th Product identifier:		
		Propidium Iodide	
1.1a	Other means of identification:		
1.1b	Alternative product name(s)/ synonyms:	Propidium Iodide, PI	
1.1c	Product number/Catalog #(s):	557, 638	
1.1d	Internal identification:	Propidium Iodide; PI	
1.2	Relevant identified uses of the substance or	For research use only. Not for use in diagnostic procedures.	
mixture and uses advised against:			
1.2a	Brief description of what the substance or mixture is	Intercalating fluorescent red reagent that is primarily used to identify	
	intended to do:	necrotic and apoptotic 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.	
		· · · ·	
Sectio	on 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	Does not meet the criteria for classification.	
2.10	{CLP}:		
2.1c	The most important adverse physiochemical, human	Refer to Sections 9-12.	
2.10	health, and environmental effects:		
~ ~			
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:	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:	PI contains a low concentration of Phenanthridinium, 3,8-diamino-5-[3	
		(diethylmethylammonio)propyl]-6-phenyl-, diiodide (CAS 25535-16-4)	
		which is below the threshold for reporting. PI 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.	
Sectio	n 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:	Item is a mixture.	
	The chemical identity and concentration or		
	concentration ranges of all ingredients which are		
	hazardous and are present above their cut-off levels:		
	3.2a Chemical identity:	No ingredients identified for reporting in this section.	
Sectio	on 4: First aid measures		
		If concerned, get medical attention/advice and provide physician with	
4.1	Description of first aid measures:		
	Description of first aid measures:	SDS information. Wash contaminated clothing before re-use. Never give anything by mouth to an unconscious person.	

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4.1a	Propidium Iodide SDS; Doc# F17-557-2-D; Effec	
4.1d	Inhalation:	Remove to fresh air and keep at rest in a comfortable position for breathing. If not breathing, give artificial respiration. Rinse nose and
4.1b	Skin contact:	mouth with water. Get medical attention if any discomfort continues. 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
4.1d	Ingention	discomfort continues. NEVER MAKE AN UNCONSCIOUS PERSON VOMIT OR DRINK
4.10	Ingestion:	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	PI is a suspected mutagen at high concentrations. Prolonged skin
	and delayed:	contact may cause redness and irritation. Because of the small
4.0-		quantity of product, the health hazard is small.
4.2a 4.2b	Inhalation: Skin contact:	May cause coughing or mild irritation. Prolonged skin contact may cause redness and mild irritation.
4.20 4.2c	Eye contact:	May cause temporary eye irritation.
4.20 4.2d	Ingestion:	May cause discomfort if swallowed.
4.2u 4.3	Indication of any immediate medical attention and	No specific first aid measures noted, but first aid may still be required
-	special treatment needed:	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.
Sectio	on 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	This product is not flammable. Product is not explosive. No dangerous
	mixture:	reactions known under normal conditions of use.
5.2a 5.2b	Hazardous combustion products: Unusual fire & explosion hazards:	None under normal conditions. No unusual fire or explosion hazards noted.
5.20 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
	3 1 1 1 3 1 1	ignition sources. No smoking.
5.3a	Special firefighting procedures:	No specific firefighting procedure given.
た つト	Special protective equipment and precautions for	Wear full protective clothing, including self-contained breathing
5.3b		
5.50	firefighters:	apparatus, if necessary. The product presents no special fire hazards in normal use. Keep away from heat, hot surfaces, sparks, open flower and other ignition sources. No smaking
5.30		
	firefighters:	in normal use. Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.
Sectio 6.1	firefighters: on 6: Accidental release measures Personal precautions, protective equipment, and emergency procedures:	in normal use. Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. Use protective equipment appropriate for surrounding materials.
Sectio	firefighters: on 6: Accidental release measures Personal precautions, protective equipment, and	in normal use. Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. Use protective equipment appropriate for surrounding materials. No specific emergency measures are required other than good
Sectio 6.1	firefighters: on 6: Accidental release measures Personal precautions, protective equipment, and emergency procedures:	 in normal use. Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. Use protective equipment appropriate for surrounding materials. No specific emergency measures are required other than good laboratory hygiene and safety practices for small spills. Wear suitable
Sectio 6.1	firefighters: on 6: Accidental release measures Personal precautions, protective equipment, and emergency procedures:	 in normal use. Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. Use protective equipment appropriate for surrounding materials. 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
Sectio 6.1 6.1a	firefighters: on 6: Accidental release measures Personal precautions, protective equipment, and emergency procedures: General release measures:	 in normal use. Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. Use protective equipment appropriate for surrounding materials. 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).
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Sectio 6.1 6.1a	firefighters: on 6: Accidental release measures Personal precautions, protective equipment, and emergency procedures: General release measures: Advice for non-emergency personnel; personal	 in normal use. Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. Use protective equipment appropriate for surrounding materials. 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). No specific emergency measures are required other than good laboratory hygiene and safety practices. Wear suitable protective clothing, gloves are required other than good laboratory hygiene and safety practices. Wear suitable protective clothing/gloves/eye/face protection to avoid contact with skin, eyes,
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Sectio 6.1 6.1a	firefighters: m 6: Accidental release measures Personal precautions, protective equipment, and emergency procedures: General release measures: Advice for non-emergency personnel; personal precautions, protective equipment and emergency procedures: Advice for emergency responders; personal	 in normal use. Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. Use protective equipment appropriate for surrounding materials. 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 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
Sectio 6.1 6.1a 6.1b	firefighters: on 6: Accidental release measures Personal precautions, protective equipment, and emergency procedures: General release measures: Advice for non-emergency personnel; personal precautions, protective equipment and emergency procedures: Advice for emergency responders; personal precautions, protective equipment and emergency	 in normal use. Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. Use protective equipment appropriate for surrounding materials. 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). 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. Wear suitable protective clothing, gloves and eye or face protection to avoid contact; use an approved supplied-air respirator, in case of
Sectio 6.1 6.1a 6.1b 6.1c	firefighters: m 6: Accidental release measures Personal precautions, protective equipment, and emergency procedures: General release measures: Advice for non-emergency personnel; personal precautions, protective equipment and emergency procedures: Advice for emergency responders; personal precautions, protective equipment and emergency procedures:	 in normal use. Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. Use protective equipment appropriate for surrounding materials. 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). 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. 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).
Sectio 6.1 6.1a 6.1b 6.1c 6.2	firefighters: on 6: Accidental release measures Personal precautions, protective equipment, and emergency procedures: General release measures: Advice for non-emergency personnel; personal precautions, protective equipment and emergency procedures: Advice for non-emergency personnel; personal precautions, protective equipment and emergency procedures: Advice for emergency responders; personal precautions, protective equipment and emergency procedures: Environmental precautions:	 in normal use. Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. Use protective equipment appropriate for surrounding materials. 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). 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. 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). Do not allow to enter drains, sewers, or watercourses.
Sectio 6.1 6.1a 6.1b 6.1c	firefighters: m 6: Accidental release measures Personal precautions, protective equipment, and emergency procedures: General release measures: Advice for non-emergency personnel; personal precautions, protective equipment and emergency procedures: Advice for emergency responders; personal precautions, protective equipment and emergency procedures:	 in normal use. Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. Use protective equipment appropriate for surrounding materials. 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). 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. 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).

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	<u>Propidium Iodide 3D3, Doc# F17-337-2-D, Ene</u>	Section 13). Wash spill area thoroughly with plenty of soap and water.
6.4	Reference to other sections:	Avoid contact with skin or inhalation of spillage, dust, or vapor. Refer to Sections 8 and 13 for additional information.
Sactio	n 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.
0		
Sectio 8.1	n 8: Exposure controls/personal protection 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 8.1c	Appropriate engineering controls: Individual protection measures, such as personal protective equipment:	Wear gloves, protective goggles, and lab coat.
8.1d	Safety symbols:	
8.2 8.2a	Exposure controls: 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.
<u>8.2g</u> 8.2h	Hand protection: Respiratory equipment:	Use suitable protective gloves if risk of skin contact. 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 8.2k 8.2l	Hygiene measures: Thermal hazards: Environmental exposure controls:	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 None known under normal conditions of use.Not determined.
Sectio 9.1	n 9: Physical and chemical properties Information on basic physical and chemical properties:	
	Information on basic physical and chemical	Liquid; clear pink. No characteristic odor. Not determined.

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9.1d	pH:	4.5-6.5
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.
9.11	Vapor density (Air =1):	Not determined.
9.1m	Relative density:	Not determined.
9.1n	Solubility(ies):	Soluble in water.
9.10	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	n 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:	Strong oxidizing substances.
10.6	Hazardous decomposition products:	None under normal conditions.
Section	n 11: Toxicological information	
11.1	Information on toxicological effects:	
		Deservatives la dista
11.1a	Name:	Propidium Iodide.
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.
11.11	Information on the likely routes of exposure	May enter by skin and/or eye contact; inhalation of vapors/mist/dust.
	(inhalation, ingestion, skin and eye contact):	may ontor by other analor by contact, initiation of vaporoliniov addt.
11.1m	Ingestion:	May cause discomfort if swallowed.
11.1n	Inhalation:	In high concentrations, vapors may irritate throat and respiratory
		system and cause coughing.
11.10	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	No specific symptoms noted.
11.1q	symptoms related to the physical, chemical and toxicological characteristics:	No specific symptoms noted.
-	toxicological characteristics:	
11.1q 11.1r	toxicological characteristics: Delayed and immediate effects as well as chronic	No specific symptoms noted. Not determined.
11.1r	toxicological characteristics: Delayed and immediate effects as well as chronic effects from short and long term exposure:	Not determined.
-	toxicological characteristics: Delayed and immediate effects as well as chronic effects from short and long term exposure: Numerical measures of toxicity (such as acute	
11.1r	toxicological characteristics: Delayed and immediate effects as well as chronic effects from short and long term exposure:	Not determined.
11.1r 11.1s	toxicological characteristics: Delayed and immediate effects as well as chronic effects from short and long term exposure: Numerical measures of toxicity (such as acute toxicity estimates):	Not determined.
11.1r 11.1s 11.1t	toxicological characteristics:Delayed and immediate effects as well as chroniceffects from short and long term exposure:Numerical measures of toxicity (such as acutetoxicity estimates):Interactive effects:	Not determined. Not determined. Not determined.
11.1r 11.1s 11.1t 11.1u	toxicological characteristics:Delayed and immediate effects as well as chronic effects from short and long term exposure:Numerical measures of toxicity (such as acute toxicity estimates):Interactive effects: Absence of specific data:	Not determined. Not determined. Not determined. Not applicable.
11.1r 11.1s 11.1t 11.1u 11.1v	toxicological characteristics: Delayed and immediate effects as well as chronic effects from short and long term exposure: Numerical measures of toxicity (such as acute toxicity estimates): Interactive effects: Absence of specific data: Mixtures:	Not determined. Not determined. Not determined. Not applicable. Item is a mixture.
11.1r 11.1s 11.1t 11.1u 11.1v 11.1w	toxicological characteristics:Delayed and immediate effects as well as chronic effects from short and long term exposure:Numerical measures of toxicity (such as acute toxicity estimates):Interactive effects:Absence of specific data:Mixtures:Mixture vs. substance information:	Not determined. Not determined. Not determined. Item is a mixture. See Section 3 for any substances in the mixture.
11.1r 11.1s 11.1t 11.1u 11.1v 11.1w	toxicological characteristics:Delayed and immediate effects as well as chronic effects from short and long term exposure:Numerical measures of toxicity (such as acute toxicity estimates):Interactive effects:Absence of specific data:Mixtures:Mixture vs. substance information:	Not determined. Not determined. Not determined. Not applicable. Item is a mixture.
11.1r 11.1s 11.1t 11.1u 11.1v 11.1v 11.1w 11.1x	toxicological characteristics:Delayed and immediate effects as well as chronic effects from short and long term exposure:Numerical measures of toxicity (such as acute toxicity estimates):Interactive effects:Absence of specific data:Mixtures:Mixture vs. substance information:Classification by National Toxicity Program (NTP):	Not determined. Not determined. Not applicable. Item is a mixture. See Section 3 for any substances in the mixture. Not classified.
11.1r 11.1s 11.1t 11.1u 11.1v 11.1w	toxicological characteristics: Delayed and immediate effects as well as chronic effects from short and long term exposure: Numerical measures of toxicity (such as acute toxicity estimates): Interactive effects: Absence of specific data: Mixtures: Mixture vs. substance information: Classification by National Toxicity Program (NTP): Classification by International Agency for Research	Not determined. Not determined. Not determined. Item is a mixture. See Section 3 for any substances in the mixture.
11.1r 11.1s 11.1t 11.1u 11.1u 11.1v 11.1w 11.1w 11.1x 11.1y	toxicological characteristics: Delayed and immediate effects as well as chronic effects from short and long term exposure: Numerical measures of toxicity (such as acute toxicity estimates): Interactive effects: Absence of specific data: Mixtures: Mixture vs. substance information: Classification by National Toxicity Program (NTP): Classification by International Agency for Research on Cancer (IARC):	Not determined. Not determined. Not determined. Not applicable. Item is a mixture. See Section 3 for any substances in the mixture. Not classified. Not classified.
11.1r 11.1s 11.1t 11.1u 11.1u 11.1v 11.1v 11.1x 11.1x 11.1z	toxicological characteristics: Delayed and immediate effects as well as chronic effects from short and long term exposure: Numerical measures of toxicity (such as acute toxicity estimates): Interactive effects: Absence of specific data: Mixtures: Mixture vs. substance information: Classification by National Toxicity Program (NTP): Classification by International Agency for Research on Cancer (IARC): Classification by OSHA 13:	Not determined. Not determined. Not determined. Not applicable. Item is a mixture. See Section 3 for any substances in the mixture. Not classified. Not classified.
11.1r 11.1s 11.1t 11.1u 11.1u 11.1v 11.1w 11.1w 11.1x 11.1y	toxicological characteristics: Delayed and immediate effects as well as chronic effects from short and long term exposure: Numerical measures of toxicity (such as acute toxicity estimates): Interactive effects: Absence of specific data: Mixtures: Mixture vs. substance information: Classification by National Toxicity Program (NTP): Classification by International Agency for Research on Cancer (IARC):	Not determined. Not determined. Not determined. Not applicable. Item is a mixture. See Section 3 for any substances in the mixture. Not classified. Not classified.
11.1r 11.1s 11.1t 11.1u 11.1u 11.1v 11.1v 11.1x 11.1x 11.1z	toxicological characteristics: Delayed and immediate effects as well as chronic effects from short and long term exposure: Numerical measures of toxicity (such as acute toxicity estimates): Interactive effects: Absence of specific data: Mixtures: Mixture vs. substance information: Classification by National Toxicity Program (NTP): Classification by International Agency for Research on Cancer (IARC): Classification by OSHA 13:	Not determined. Not determined. Not determined. Not applicable. Item is a mixture. See Section 3 for any substances in the mixture. Not classified. Not classified. PI is a suspected mutagen at high concentrations. Prolonged skin
11.1r 11.1s 11.1t 11.1u 11.1u 11.1v 11.1v 11.1x 11.1x 11.1z	toxicological characteristics: Delayed and immediate effects as well as chronic effects from short and long term exposure: Numerical measures of toxicity (such as acute toxicity estimates): Interactive effects: Absence of specific data: Mixtures: Mixture vs. substance information: Classification by National Toxicity Program (NTP): Classification by International Agency for Research on Cancer (IARC): Classification by OSHA 13:	Not determined. Not determined. Not determined. Not applicable. Item is a mixture. See Section 3 for any substances in the mixture. Not classified. Not classified. PI is a suspected mutagen at high concentrations. Prolonged skin contact may cause redness and irritation. Because of the small quantity
11.1r 11.1s 11.1t 11.1u 11.1u 11.1v 11.1v 11.1x 11.1x 11.1z	toxicological characteristics: Delayed and immediate effects as well as chronic effects from short and long term exposure: Numerical measures of toxicity (such as acute toxicity estimates): Interactive effects: Absence of specific data: Mixtures: Mixture vs. substance information: Classification by National Toxicity Program (NTP): Classification by International Agency for Research on Cancer (IARC): Classification by OSHA 13:	Not determined. Not determined. Not determined. Not applicable. Item is a mixture. See Section 3 for any substances in the mixture. Not classified. Not classified. PI is a suspected mutagen at high concentrations. Prolonged skin
11.1r 11.1s 11.1t 11.1u 11.1v 11.1v 11.1v 11.1x 11.1y 11.1z 11.1ab	toxicological characteristics: Delayed and immediate effects as well as chronic effects from short and long term exposure: Numerical measures of toxicity (such as acute toxicity estimates): Interactive effects: Absence of specific data: Mixtures: Mixture vs. substance information: Classification by National Toxicity Program (NTP): Classification by International Agency for Research on Cancer (IARC): Classification by OSHA 13: Other information:	Not determined. Not determined. Not determined. Not applicable. Item is a mixture. See Section 3 for any substances in the mixture. Not classified. Not classified. PI is a suspected mutagen at high concentrations. Prolonged skin contact may cause redness and irritation. Because of the small quantity
11.1r 11.1s 11.1t 11.1u 11.1v 11.1v 11.1v 11.1x 11.1y 11.1z 11.1ab	toxicological characteristics: Delayed and immediate effects as well as chronic effects from short and long term exposure: Numerical measures of toxicity (such as acute toxicity estimates): Interactive effects: Absence of specific data: Mixtures: Mixture vs. substance information: Classification by National Toxicity Program (NTP): Classification by International Agency for Research on Cancer (IARC): Classification by OSHA 13:	Not determined. Not determined. Not determined. Not applicable. Item is a mixture. See Section 3 for any substances in the mixture. Not classified. Not classified. PI is a suspected mutagen at high concentrations. Prolonged skin contact may cause redness and irritation. Because of the small quantity
11.1r 11.1s 11.1t 11.1u 11.1v 11.1v 11.1v 11.1x 11.1x 11.1z 11.1z 11.1ab	toxicological characteristics: Delayed and immediate effects as well as chronic effects from short and long term exposure: Numerical measures of toxicity (such as acute toxicity estimates): Interactive effects: Absence of specific data: Mixtures: Mixture vs. substance information: Classification by National Toxicity Program (NTP): Classification by International Agency for Research on Cancer (IARC): Classification by OSHA 13: Other information: 12: Ecological information	Not determined. Not determined. Not determined. Not applicable. Item is a mixture. See Section 3 for any substances in the mixture. Not classified. Not classified. PI is a suspected mutagen at high concentrations. Prolonged skin contact may cause redness and irritation. Because of the small quantity
11.1r 11.1s 11.1t 11.1u 11.1v 11.1v 11.1v 11.1x 11.1y 11.1z 11.1ab	toxicological characteristics: Delayed and immediate effects as well as chronic effects from short and long term exposure: Numerical measures of toxicity (such as acute toxicity estimates): Interactive effects: Absence of specific data: Mixtures: Mixture vs. substance information: Classification by National Toxicity Program (NTP): Classification by International Agency for Research on Cancer (IARC): Classification by OSHA 13: Other information:	Not determined. Not determined. Not determined. Not applicable. Item is a mixture. See Section 3 for any substances in the mixture. Not classified. Not classified. PI is a suspected mutagen at high concentrations. Prolonged skin contact may cause redness and irritation. Because of the small quantity

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12.1b	Ecotoxicity (aquatic and terrestrial, where available):	Not determined.
12.10 12.2	Persistence and degradability:	There are no data on the degradability of this product.
12.2	Bioaccumulative potential:	No data available on bioaccumulation.
12.3	Mobility in soil:	The product is soluble in water.
12.4	Results of PBT and vPvB assessment:	Not determined.
12.5	Other adverse effects:	No data available.
12.0	Other adverse effects.	
Sectio	n 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	Dispose of waste and residues in accordance with local authority
	their safe handling and methods of disposal,	requirements. For the safety of persons conducting disposal, recycling
	including the disposal of any contaminated	or reclamation activities, please refer to the information in Section 8
	packaging:	(exposure controls and personal protection) of the SDS.
	n 14: Transport information	T
14.1	UN number:	Not applicable.
14.2	UN proper shipping name:	Not applicable.
14.3	Transport hazard class(es):	Not applicable.
14.4 14.5	Packing group:	Not applicable.
	Environmental hazards:	. The preduct is not accord by these regulations
14.5a	Is it environmentally dangerous according to UN	The product is not covered by these regulations.
	Model Regulations (IMDG Code, ADR, RID, and	
14.5b	ADN)?: Is it a marine pollutant according to the IMDG	No.
11.00	code?:	
14.6	Special precautions for user:	None known.
14.7	Transport in bulk according to Annex II of	Not applicable.
	MARPOL and the IBC code:	
14.7a	Other information:	The product is not considered a dangerous good for transport.
14.7b	Classification for other modes of transport:	Contact supplier.
	n 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.
<u>15.1d</u>	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}:	Not listed
15.1h	Annex XIV substances subject to authorization:	Not listed.
<u>15.1i</u>	Substances of very high concern:	Not listed.
15.1j	Approved code of practice:	Classification and labeling of substances and preparations dangerous
15.1k	Guidance notes:	for supply. Safety data sheets for substances and preparations. Workplace exposure limits EH40.
15.1K 15.1I	EU legislation references:	(EC) No. 1272/2008 on the classification, labelling and packaging of
10.11	Lo เองเอเฉแบบ เอเอเอแบออ.	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.
<u>.</u> u		
Section	n 16: Other information	
16.1	Other information:	
16.1a	Date of revision:	12-May-2017
16.1b	SDS number and revision:	F17-557-2-D
	Supersedes SDS number and revision:	F17-557-2-C
	Changes made to the previous version of the SDS:	Reviewed and updated document control numbers.
16.1d	Changes made to the previous version of the SDS: Key/legend to abbreviations and acronyms used in	Reviewed and updated document control numbers. ACGIH American Conference of Governmental Industrial Hygienists.
<u>16.1c</u> 16.1d 16.1e		

	1	Propidium Iodide SDS; Doc# F17-557-2-D; Effec	tive: 05/12/2017; Supersedes: F17-557-2-C; Page 6 of 6
			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		t of hazard statements and/or precautionary	All statements were written out in full.
		ents not written out in full elsewhere:	
DISCLA	AIMER:		ic material designated and may not be valid for such material used
			r in any process. Such information is, to the best of the company's
			le as of the date indicated. However, no warranty guarantee or
			liability, or completeness. It is the user's responsibility to satisfy
		himself as to the suitability of such inform	nation for his own particular use.
			15 05 050
	END OF SDS		

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TECHNOLOGIES

1.1	n 1: Identification of the substance/mixture and of th Product identifier:	Hoechst 33342	
		HUECHSI 33342	
.1a	Other means of identification:		
.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: Email:	www.immunochemistry.com	
1.3g 1.3h	Contact person at ICT:	help@immunochemistry.com Quality Documentation Department	
1.311 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.	
Sectio	n 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.	
	n 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:	Item is a mixture.	
	The chemical identity and concentration or		
	concentration ranges of all ingredients which are		
	hazardous and are present above their cut-off levels:		
	3.2a Chemical identity:	No ingredients identified for reporting in this section.	
	on 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	

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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.	
Sectio	n 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: Protective measures in fire:	No unusual fire or explosion hazards noted.	
5.2c 5.3	Advice for firefighters:	Use protective equipment appropriate for surrounding materials. Keep away from heat, hot surfaces, sparks, open flames and other	
0.0	Advice for menginers.	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.	
6.1	n 6: Accidental release measures 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	
6.1c	Advice for emergency responders; personal precautions, protective equipment and emergency procedures:	concerned. 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 6.3	Environmental precautions: Methods and materials for containment and clean up:	Do not allow to enter drains, sewers, or watercourses. 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	

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6.4	Reference to other sections:	 Section 13). Wash spill area thoroughly with plenty of soap and water. Avoid contact with skin or inhalation of spillage, dust, or vapor. Refer to Sections 8 and 13 for additional information.
0	· 7. Handling and standing	
7.1	n 7: Handling and storage 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		
Section 8.1	n 8: Exposure controls/personal protection 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 2 ~		
8.2c	Ventilation controls:	Provide adequate ventilation.
8.2d	Reference to other sections:	Provide adequate ventilation. Refer to Section 5 for additional information.
		Provide adequate ventilation.
8.2d 8.2e 8.2f	Reference to other sections: Eye/face protection: Skin protection:	Provide adequate ventilation. Refer to Section 5 for additional information. Wear approved chemical safety goggles where eye exposure is reasonably probable or face shield if risk of splashing. Wear apron or protective clothing in case of contact.
8.2d 8.2e 8.2f 8.2g	Reference to other sections: Eye/face protection: Skin protection: Hand protection:	Provide adequate ventilation. Refer to Section 5 for additional information. Wear approved chemical safety goggles where eye exposure is reasonably probable or face shield if risk of splashing. Wear apron or protective clothing in case of contact. Use suitable protective gloves if risk of skin contact.
8.2d 8.2e 8.2f 8.2g 8.2h	Reference to other sections: Eye/face protection: Skin protection:	Provide adequate ventilation.Refer to Section 5 for additional information.Wear approved chemical safety goggles where eye exposure is reasonably probable or face shield if risk of splashing.Wear apron or protective clothing in case of contact.Use suitable protective gloves if risk of skin contact.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).
8.2d 8.2e 8.2f 8.2g 8.2h 8.2h	Reference to other sections: Eye/face protection: Skin protection: Hand protection: Respiratory equipment: Other protection:	Provide adequate ventilation.Refer to Section 5 for additional information.Wear approved chemical safety goggles where eye exposure is reasonably probable or face shield if risk of splashing.Wear apron or protective clothing in case of contact.Use suitable protective gloves if risk of skin contact.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).Wear appropriate clothing to avoid skin contact.
8.2d 8.2e 8.2f 8.2g 8.2h 8.2h 8.2i 8.2j	Reference to other sections: Eye/face protection: Skin protection: Hand protection: Respiratory equipment: Other protection: Hygiene measures:	 Provide adequate ventilation. Refer to Section 5 for additional information. Wear approved chemical safety goggles where eye exposure is reasonably probable or face shield if risk of splashing. Wear apron or protective clothing in case of contact. Use suitable protective gloves if risk of skin contact. 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). Wear appropriate clothing to avoid skin contact. 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
8.2d 8.2e 8.2f 8.2g 8.2h 8.2h 8.2i 8.2j 8.2j	Reference to other sections: Eye/face protection: Skin protection: Hand protection: Respiratory equipment: Other protection: Hygiene measures: Thermal hazards:	Provide adequate ventilation.Refer to Section 5 for additional information.Wear approved chemical safety goggles where eye exposure is reasonably probable or face shield if risk of splashing.Wear apron or protective clothing in case of contact.Use suitable protective gloves if risk of skin contact.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. Use respirators and components tested and approved under appropriate government standards such as NIOSH (US) or CEN (EU).Wear appropriate clothing to avoid skin contact.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 None known under normal conditions of use.
8.2d 8.2e 8.2f 8.2g 8.2h 8.2h 8.2h 8.2i 8.2j 8.2j 8.2k 8.2l	Reference to other sections: Eye/face protection: Skin protection: Hand protection: Respiratory equipment: Other protection: Hygiene measures: Thermal hazards: Environmental exposure controls:	 Provide adequate ventilation. Refer to Section 5 for additional information. Wear approved chemical safety goggles where eye exposure is reasonably probable or face shield if risk of splashing. Wear apron or protective clothing in case of contact. Use suitable protective gloves if risk of skin contact. 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). Wear appropriate clothing to avoid skin contact. 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
8.2d 8.2e 8.2f 8.2g 8.2h 8.2h 8.2i 8.2j 8.2j 8.2k 8.2l Sectio	Reference to other sections: Eye/face protection: Skin protection: Hand protection: Respiratory equipment: Other protection: Hygiene measures: Thermal hazards: Environmental exposure controls: 9: Physical and chemical properties	Provide adequate ventilation.Refer to Section 5 for additional information.Wear approved chemical safety goggles where eye exposure is reasonably probable or face shield if risk of splashing.Wear apron or protective clothing in case of contact.Use suitable protective gloves if risk of skin contact.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. Use respirators and components tested and approved under appropriate government standards such as NIOSH (US) or CEN (EU).Wear appropriate clothing to avoid skin contact.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 None known under normal conditions of use.
8.2d 8.2e 8.2f 8.2g 8.2h 8.2h 8.2h 8.2i 8.2j 8.2j 8.2j 8.2k 8.2l Section 9.1	Reference to other sections: Eye/face protection: Skin protection: Hand protection: Respiratory equipment: Other protection: Hygiene measures: Thermal hazards: Environmental exposure controls: n 9: Physical and chemical properties Information on basic physical and chemical properties:	Provide adequate ventilation. Refer to Section 5 for additional information. Wear approved chemical safety goggles where eye exposure is reasonably probable or face shield if risk of splashing. Wear apron or protective clothing in case of contact. Use suitable protective gloves if risk of skin contact. 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). Wear appropriate clothing to avoid skin contact. 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 None known under normal conditions of use. Not determined.
8.2d 8.2e 8.2f 8.2g 8.2h 8.2h 8.2i 8.2j 8.2j 8.2k 8.2l Sectio	Reference to other sections: Eye/face protection: Skin protection: Hand protection: Respiratory equipment: Other protection: Hygiene measures: Thermal hazards: Environmental exposure controls: 9: Physical and chemical properties Information on basic physical and chemical	Provide adequate ventilation.Refer to Section 5 for additional information.Wear approved chemical safety goggles where eye exposure is reasonably probable or face shield if risk of splashing.Wear apron or protective clothing in case of contact.Use suitable protective gloves if risk of skin contact.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. Use respirators and components tested and approved under appropriate government standards such as NIOSH (US) or CEN (EU).Wear appropriate clothing to avoid skin contact.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 None known under normal conditions of use.

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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.
9.11	Vapor density (Air =1):	Not determined.
9.1m	Relative density:	Not determined.
	Solubility(ies):	
9.1n		Soluble in water.
9.10	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.
10.2	Possibility of hazardous reactions:	Hazardous polymerization: will not polymerize.
10.3	Conditions to avoid:	To avoid product degradation, avoid exposure to high temperatures or
10.4		
40.5	la second (bla materiala)	direct sunlight or light.
10.5	Incompatible materials:	Strong oxidizing substances.
10.6	Hazardous decomposition products:	None under normal conditions.
	11: Toxicological information	1
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.
11.1 a	Coroinogonicitu	Not determined.
11.1g	Carcinogenicity:	
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.
11.11	Information on the likely routes of exposure	May enter by skin and/or eye contact; inhalation of vapors/mist/dust.
	(inhalation, ingestion, skin and eye contact):	
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.
11.1p	Symptoms related to the physical, chemical and	No specific symptoms noted.
11.14		
11 1-	toxicological characteristics:	Net determined
11.1r	Delayed and immediate effects as well as chronic	Not determined.
	effects from short and long term exposure:	
11.1s	Numerical measures of toxicity (such as acute	Not determined.
	toxicity estimates):	
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.
11.1x 11.1y	Classification by International Agency for Research	Not classified.
1 I.I.Y		เพิ่ม เตออาแอน.
44.4-	on Cancer (IARC):	Netelessitised
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

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Section	n 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	n 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	Dispose of waste and residues in accordance with local authority
	their safe handling and methods of disposal,	requirements. For the safety of persons conducting disposal, recycling
	including the disposal of any contaminated	or reclamation activities, please refer to the information in Section 8
	packaging:	(exposure controls and personal protection) of the SDS.
Section	n 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	The product is not covered by these regulations.
	Model Regulations (IMDG Code, ADR, RID, and ADN)?:	
14.5b	Is it a marine pollutant according to the IMDG	No.
	code?:	
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 15.1	n 15: Regulatory information Safety, health and environmental regulations/legislation specific for the substance	•
15.1a	or mixture: Regional safety, health and environmental	
45.41	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: EU Regulation 1907/2006 {REACH}:	Not listed.
<u>15.1g</u> 15.1h	Annex XIV substances subject to authorization:	Not listed.
15.11 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 dangerous
15.1k	Guidance notes:	Workplace exposure limits EH40.
15.1k 15.1l	EU legislation references:	(EC) No. 1272/2008 on the classification, labelling and packaging of
10.11		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
		Authorisation and Restriction of Chemicals (REACH), establishing a European Chemicals Agency, amending Directive 1999/45/EC and
		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
		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
		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
15.2	Chemical safety assessment:	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
15.2 15.2a	Chemical safety assessment: Other regulatory information:	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.
15.2a	Other regulatory information:	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. Not required.
15.2a Section	Other regulatory information:	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. Not required.
15.2a Section 16.1	Other regulatory information: 16: Other information Other information:	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. Not required. None.
15.2a Section 16.1 16.1a	Other regulatory information: 16: Other information Other information: Date of revision:	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. Not required. None.
15.2a Section 16.1	Other regulatory information: 16: Other information Other information:	Authorisation and Restriction of Chemicals (REACH), establishing a European Chemicals Agency, amending Directive 1999/45/EC and repealing Council Regulation (EC) 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. Not required.

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	es made to the previous version of the SDS: end to abbreviations and acronyms used in	Reviewed and updated document control numbers. 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.
Full text	t of hazard statements and/or precautionary	All statements were written out in full.
		fic material designated and may not be valid for such material used
	in combination with any other materials o	r in any process. Such information is, to the best of the company's
		le as of the date indicated. However, no warranty guarantee or
		liability, or completeness. It is the user's responsibility to satisfy
		in combination with any other materials o knowledge and belief, accurate and reliab