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**SAFETY DATA SHEET**

Creation Date 05-Feb-2014

Revision Date 05-Feb-2014

Revision Number 1

**1. Identification**

**Product Name** 10% Neutral Buffered Formalin

**Cat No. :** 5701, V5701, 5705, 5705EXL, 5725, 5730, 5735, 5755, 9400-1, 9400-5, 9400-55, 51201, 51401, 51401 PL, 51601, 51601 PL, 51901, 53151, 53301, 53601, V5725, 53901, 56201, 56401, 56601, 56901, 59201, 59201G, 59401, 59401R, 59901Y, 59401PMC, 59601, 59601PMC, 59901, 511201, 531201, 531801, 534801, 59901B, 561201, 591201, 591201PMC, 591801, 594801, 599601, 599601D, 5912001, V5705

**Synonyms** No information available.

**Recommended Use** Laboratory chemicals

**Uses advised against** No Information available

**Details of the supplier of the safety data sheet**

<b>Company</b> Richard Allan Scientific A Subsidiary of Thermo Fisher Scientific 4481 Campus Drive Kalamazoo, MI 49008 Tel: (800) 522-7270	<b>Emergency Telephone Number</b> Chemtrec US: (800) 424-9300 Chemtrec EU: 001 (202) 483-7616
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**2. Hazard(s) identification**

**Classification**

This chemical is considered hazardous by the 2012 OSHA Hazard Communication Standard (29 CFR 1910.1200)

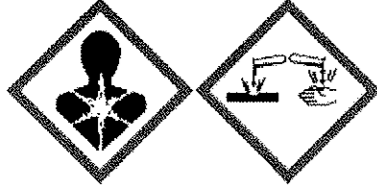
Skin Corrosion/irritation	Category 2
Serious Eye Damage/Eye Irritation	Category 1
Skin Sensitization	Category 1
Carcinogenicity	Category 1A
Specific target organ toxicity (single exposure)	Category 1
Target Organs - Respiratory system, Central nervous system (CNS).	
Specific target organ toxicity - (repeated exposure)	Category 2
Target Organs - Kidney, Liver, spleen, Blood.	

**Label Elements**

**Signal Word**  
Danger

**Hazard Statements**

Causes skin irritation  
May cause an allergic skin reaction  
Causes serious eye damage  
May cause respiratory irritation  
May cause drowsiness or dizziness  
May cause cancer  
Causes damage to organs  
May cause damage to organs through prolonged or repeated exposure



**Precautionary Statements**

**Prevention**

Obtain special instructions before use  
Do not handle until all safety precautions have been read and understood  
Use personal protective equipment as required  
Wash face, hands and any exposed skin thoroughly after handling  
Contaminated work clothing should not be allowed out of the workplace  
Wear protective gloves  
Do not breathe dust/fume/gas/mist/vapors/spray  
Do not eat, drink or smoke when using this product  
Use only outdoors or in a well-ventilated area

**Response**

IF exposed: Call a POISON CENTER or doctor/physician

**Inhalation**

IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing  
Call a POISON CENTER or doctor/physician if you feel unwell

**Skin**

IF ON SKIN: Wash with plenty of soap and water  
Take off contaminated clothing and wash before reuse  
If skin irritation or rash occurs: Get medical advice/attention

**Eyes**

IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing  
Immediately call a POISON CENTER or doctor/physician.

**Storage**

Store locked up  
Store in a well-ventilated place. Keep container tightly closed

**Disposal**

Dispose of contents/container to an approved waste disposal plant

**Hazards not otherwise classified (HNOC)**

**Other hazards**

WARNING! This product contains a chemical known in the State of California to cause cancer, birth defects or other reproductive harm.

**3. Composition / Information on Ingredients**

Haz/Non-haz	Component	CAS-No	Weight %
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<b>3. Composition / information on ingredients</b>		
Water	7732-18-5	94 - 95
Formaldehyde	50-00-0	3.5 - 4
Methyl alcohol	67-56-1	1.2
Sodium phosphate dibasic	7558-79-4	< 1
Sodium phosphate, monobasic	7558-80-7	< 1

**4. First-aid measures**

<b>Eye Contact</b>	Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. Obtain medical attention.
<b>Skin Contact</b>	Wash off immediately with plenty of water for at least 15 minutes. Obtain medical attention.
<b>Inhalation</b>	Move to fresh air. If breathing is difficult, give oxygen. Get medical attention immediately if symptoms occur.
<b>Ingestion</b>	Do not induce vomiting. Obtain medical attention.
<b>Most important symptoms/effects</b>	Causes eye burns. May cause allergic skin reaction.. Symptoms of allergic reaction may include rash, itching, swelling, trouble breathing, tingling of the hands and feet, dizziness, lightheadedness, chest pain, muscle pain or flushing.
<b>Notes to Physician</b>	Treat symptomatically.

**5. Fire-fighting measures**

<b>Suitable Extinguishing Media</b>	Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide.
<b>Unsuitable Extinguishing Media</b>	No information available.
<b>Flash Point</b>	> 93.3°C / 199.9°F
<b>Method -</b>	No information available.
<b>Autoignition Temperature</b>	No information available.
<b>Explosion Limits</b>	
<b>Upper</b>	No data available
<b>Lower</b>	No data available
<b>Sensitivity to mechanical Impact</b>	No information available.
<b>Sensitivity to static discharge</b>	No information available.

**Specific Hazards Arising from the Chemical**  
Thermal decomposition can lead to release of irritating gases and vapors.

**Hazardous Combustion Products** Formaldehyde, Methanol, Carbon monoxide (CO), Carbon dioxide (CO<sub>2</sub>).

**Protective Equipment and Precautions for Firefighters**  
As in any fire, wear self-contained breathing apparatus pressure-demand, MSHA/NIOSH (approved or equivalent) and full protective gear.

<b>NFPA</b>				
<b>Health</b>	<b>Flammability</b>	<b>Instability</b>	<b>Physical hazards</b>	
3	1	0	N/A	

**6. Accidental release measures**

**Personal Precautions** Use personal protective equipment. Ensure adequate ventilation. Avoid contact with skin, eyes and clothing.

**Environmental Precautions** Should not be released into the environment. Do not flush into surface water or sanitary sewer system. See Section 12 for additional ecological information.

**Methods for Containment and Clean Up** Soak up with inert absorbent material. Keep in suitable, closed containers for disposal.

**7. Handling and storage**

**Handling** Use only under a chemical fume hood. Wear personal protective equipment. Do not breathe vapors or spray mist. Avoid contact with skin, eyes and clothing.

**Storage** Keep containers tightly closed in a dry, cool and well-ventilated place. Keep containers tightly closed in a cool, well-ventilated place.

**Incompatible Products** Strong oxidizing agents. Acids.

**8. Exposure controls / personal protection**

**Exposure Guidelines**

Component	ACGIH TLV	OSHA PEL	NIOSH IDLH
Formaldehyde	:	(Vacated) :	:
Methyl alcohol	TWA: 200 ppm STEL: 250 ppm Skin	(Vacated) TWA: 200 ppm (Vacated) TWA: 260 mg/m <sup>3</sup> (Vacated) STEL: 250 ppm (Vacated) STEL: 325 mg/m <sup>3</sup> Skin TWA: 200 ppm TWA: 260 mg/m <sup>3</sup>	IDLH: 6000 ppm TWA: 200 ppm TWA: 260 mg/m <sup>3</sup> STEL: 250 ppm STEL: 325 mg/m <sup>3</sup>

Component	Quebec	Mexico OEL (TWA)	Ontario TWAEV
Formaldehyde	Ceiling:	:	STEL: CEV:
Methyl alcohol	TWA: 200 ppm TWA: 262 mg/m <sup>3</sup> STEL: 250 ppm STEL: 328 mg/m <sup>3</sup> Skin	TWA: 200 ppm TWA: 260 mg/m <sup>3</sup> STEL: 250 ppm STEL: 310 mg/m <sup>3</sup>	TWA: 200 ppm STEL: 250 ppm Skin

**Legend**

ACGIH - American Conference of Industrial Hygiene

OSHA - Occupational Safety and Health Administration

NIOSH IDLH: Immediately Dangerous to Life or Health

**Engineering Measures** Use only under a chemical fume hood. Ensure adequate ventilation, especially in confined areas. Ensure that eyewash stations and safety showers are close to the workstation location.

**Personal Protective Equipment**

**Eye/face Protection** Wear appropriate protective eyeglasses or chemical safety goggles as described by OSHA's eye and face protection regulations in 29 CFR 1910.133 or European Standard EN166.

**Skin and body protection** Wear appropriate protective gloves and clothing to prevent skin exposure.

**Respiratory Protection** Follow the OSHA respirator regulations found in 29 CFR 1910.134 or European Standard EN 149. Use a NIOSH/MSHA or European Standard EN 149 approved respirator if exposure limits are exceeded or if irritation or other symptoms are experienced.

**Hygiene Measures** Handle in accordance with good industrial hygiene and safety practice

### 9. Physical and chemical properties

<b>Physical State</b>	Liquid
<b>Appearance</b>	Clear Colorless
<b>Odor</b>	Characteristic formaldehyde
<b>Odor Threshold</b>	No information available.
<b>pH</b>	7
<b>Melting Point/Range</b>	No data available
<b>Boiling Point/Range</b>	Not applicable
<b>Flash Point</b>	> 93.3°C / 199.9°F
<b>Evaporation Rate</b>	No information available.
<b>Flammability (solid,gas)</b>	No information available.
<b>Flammability or explosive limits</b>	
<b>Upper</b>	No data available
<b>Lower</b>	No data available
<b>Vapor Pressure</b>	No information available.
<b>Vapor Density</b>	No information available.
<b>Relative Density</b>	No information available.
<b>Solubility</b>	No information available.
<b>Partition coefficient; n-octanol/water</b>	No data available
<b>Autoignition Temperature</b>	No information available.
<b>Decomposition temperature</b>	No information available.
<b>Viscosity</b>	No information available.
<b>Molecular Formula</b>	Solution

### 10. Stability and reactivity

**Reactive Hazard** None known, based on information available.

**Stability** Stable under normal conditions.

**Conditions to Avoid** Incompatible products. Heat, flames and sparks.

**Incompatible Materials** Strong oxidizing agents, Strong acids, Strong bases

**Hazardous Decomposition Products** Formaldehyde, Methanol, Carbon monoxide (CO), Carbon dioxide (CO<sub>2</sub>)

**Hazardous Polymerization** Hazardous polymerization does not occur.

**Hazardous Reactions** None under normal processing.

### 11. Toxicological information

**Acute Toxicity**

**Product Information** No acute toxicity information is available for this product

**Oral LD50** Based on ATE data, the classification criteria are not met. ATE > 2000 mg/kg.

**Dermal LD50** Based on ATE data, the classification criteria are not met. ATE > 2000 mg/kg.

**Vapor LC50** Based on ATE data, the classification criteria are not met. ATE > 20 mg/l.

**Component Information**

Component	LD50 Oral	LD50 Dermal	LC50 Inhalation
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Formaldehyde	500 mg/kg ( Rat )	Not listed	0.578 mg/L ( Rat ) 4 h
Methyl alcohol	5628 mg/kg ( Rat )	15800 mg/kg ( Rabbit )	64000 ppm ( Rat ) 4 h 83.2 mg/L ( Rat ) 4 h
Sodium phosphate dibasic	17 g/kg ( Rat )	Not listed	Not listed
Sodium phosphate, monobasic	8290 mg/kg ( Rat )	7940 mg/kg ( Rabbit )	Not listed

**Toxicologically Synergistic Products** No information available.

**Delayed and immediate effects as well as chronic effects from short and long-term exposure**

**Irritation** No information available.

**Sensitization** May cause sensitization by skin contact

**Carcinogenicity** The table below indicates whether each agency has listed any ingredient as a carcinogen.

Component	CAS-No	IARC	NTP	ACGIH	OSHA	Mexico
Water	7732-18-5	Not listed	Not listed	Not listed	Not listed	Not listed
Formaldehyde	50-00-0	Group 1	Known	Not listed	X	Not listed
Methyl alcohol	67-56-1	Not listed	Not listed	Not listed	Not listed	Not listed
Sodium phosphate dibasic	7558-79-4	Not listed	Not listed	Not listed	Not listed	Not listed
Sodium phosphate, monobasic	7558-80-7	Not listed	Not listed	Not listed	Not listed	Not listed

**IARC: (International Agency for Research on Cancer)**

*IARC: (International Agency for Research on Cancer)*

*Group 1 - Carcinogenic to Humans  
Group 2A - Probably Carcinogenic to Humans  
Group 2B - Possibly Carcinogenic to Humans*

**NTP: (National Toxicity Program)**

*NTP: (National Toxicity Program)  
Known - Known Carcinogen  
Reasonably Anticipated - Reasonably Anticipated to be a Human Carcinogen*

**ACGIH: (American Conference of Governmental Industrial Hygienists)**

*A1 - Known Human Carcinogen  
A2 - Suspected Human Carcinogen  
A3 - Animal Carcinogen  
ACGIH: (American Conference of Governmental Industrial Hygienists)*

**Mexico - Occupational Exposure Limits - Carcinogens**

*Mexico - Occupational Exposure Limits - Carcinogens  
A1 - Confirmed Human Carcinogen  
A2 - Suspected Human Carcinogen  
A3 - Confirmed Animal Carcinogen  
A4 - Not Classifiable as a Human Carcinogen  
A5 - Not Suspected as a Human Carcinogen*

**Mutagenic Effects** Mutagenic effects have occurred in humans.

**Reproductive Effects** Experiments have shown reproductive toxicity effects on laboratory animals.

**Developmental Effects** Developmental effects have occurred in experimental animals.

**Teratogenicity** Teratogenic effects have occurred in experimental animals..

**STOT - single exposure** Respiratory system, Central nervous system (CNS).

**STOT - repeated exposure** Kidney, Liver, spleen, Blood.

**Aspiration hazard** No information available.

**Symptoms / effects, both acute and delayed** Symptoms of allergic reaction may include rash, itching, swelling, trouble breathing, tingling of the hands and feet, dizziness, lightheadedness, chest pain, muscle pain or flushing.

**Endocrine Disruptor Information** No information available

**Other Adverse Effects** Tumorigenic effects have been reported in experimental animals.. The toxicological properties have not been fully investigated.. See actual entry in RTECS for complete information.

**12. Ecological Information**

**Ecotoxicity**

Component	Freshwater Algae	Freshwater Fish	Microtox	Water Flea
Formaldehyde	Not listed	Leuciscus idus: LC50 = 15 mg/L 96h	Not listed	EC50 = 20 mg/L 96h EC50 = 2 mg/L 48h
Methyl alcohol	Not listed	Pimephales promelas: LC50 > 10000 mg/L 96h	EC50 = 39000 mg/L 25 min EC50 = 40000 mg/L 15 min EC50 = 43000 mg/L 5 min	EC50 > 10000 mg/L 24h

**Persistence and Degradability** No information available.

**Bioaccumulation/ Accumulation** No information available

**Mobility**

Component	log Pow
Formaldehyde	-0.35
Methyl alcohol	-0.74

**13. Disposal considerations**

**Waste Disposal Methods** Chemical waste generators must determine whether a discarded chemical is classified as a hazardous waste. Chemical waste generators must also consult local, regional, and national hazardous waste regulations to ensure complete and accurate classification

Component	RCRA - U Series Wastes	RCRA - P Series Wastes
Methyl alcohol - 67-56-1	U154	-

**14. Transport Information**

**DOT** Not regulated

**TDG** Not regulated

**IATA** Not regulated

**IMDG/IMO** Not regulated

**15. Regulatory information**

**International Inventories**

Component	TSCA	DSL	NDSL	EINECS	ELINCS	NLP	PICCS	ENCS	AICS	CHINA	KECL
Water	X	X	-	231-791-2	-	-	X	-	X	X	X
Formaldehyde	-	X	-	-	-	-	X	X	X	X	X
Methyl alcohol	X	X	-	200-659-6	-	-	X	X	X	X	X
Sodium phosphate dibasic	X	X	-	231-448-7	-	-	X	X	X	X	X
Sodium phosphate, monobasic	X	X	-	231-449-2	-	-	X	X	X	X	X

**Legend:**  
X - Listed  
E - indicates a substance that is the subject of a Section 5(e) Consent order under TSCA.

F - Indicates a substance that is the subject of a Section 5(f) Rule under TSCA.  
 N - Indicates a polymeric substance containing no free-radical initiator in its inventory name but is considered to cover the designated polymer made with any free-radical initiator regardless of the amount used.  
 P - Indicates a commenced PMN substance  
 R - Indicates a substance that is the subject of a Section 6 risk management rule under TSCA.  
 S - Indicates a substance that is identified in a proposed or final Significant New Use Rule  
 T - Indicates a substance that is the subject of a Section 4 test rule under TSCA.  
 XU - Indicates a substance exempt from reporting under the Inventory Update Rule, i.e. Partial Updating of the TSCA Inventory Data Base Production and Site Reports (40 CFR 710(B)).  
 Y1 - Indicates an exempt polymer that has a number-average molecular weight of 1,000 or greater.  
 Y2 - Indicates an exempt polymer that is a polyester and is made only from reactants included in a specified list of low concern reactants that comprises one of the eligibility criteria for the exemption rule.

**U.S. Federal Regulations**

TSCA 12(b) Not applicable

**SARA 313**

Component	CAS-No	Weight %	SARA 313 - Threshold Values %
Methyl alcohol	67-56-1	1.2	1.0

**SARA 311/312 Hazardous Categorization**

Acute Health Hazard Yes  
 Chronic Health Hazard Yes  
 Fire Hazard Yes  
 Sudden Release of Pressure Hazard No  
 Reactive Hazard No

**Clean Water Act**

Component	CWA - Hazardous Substances	CWA - Reportable Quantities	CWA - Toxic Pollutants	CWA - Priority Pollutants
Water	-	1 LB	-	-
Formaldehyde	X	-	-	-
Sodium phosphate dibasic	X	5000 lb	-	-

**Clean Air Act**

Component	HAPS Data	Class 1 Ozone Depletors	Class 2 Ozone Depletors
Formaldehyde	X		-
Methyl alcohol	X		-

**OSHA - Occupational Safety and Health Administration**

Component	Specifically Regulated Chemicals	Highly Hazardous Chemicals
Formaldehyde	-	-

**CERCLA**

This material, as supplied, contains one or more substances regulated as a hazardous substance under the Comprehensive Environmental Response Compensation and Liability Act (CERCLA) (40 CFR 302)

Component	Hazardous Substances RQs	CERCLA EHS RQs
Methyl alcohol	5000 lb	-
Sodium phosphate dibasic	5000 lb	-

**California Proposition 65**

This product contains the following Proposition 65 chemicals:

Component	CAS-No	California Prop. 65	Prop 65 NSRL
Formaldehyde	50-00-0	Carcinogen	-
Methyl alcohol	67-56-1	Methanol	-

**State Right-to-Know**

Component	Massachusetts	New Jersey	Pennsylvania	Illinois	Rhode Island
Formaldehyde	X	X	X	X	X
Methyl alcohol	X	X	X	X	X
Sodium phosphate dibasic	X	X	X	-	-

**U.S. Department of Transportation**

Reportable Quantity (RQ): Y  
 DOT Marine Pollutant N  
 DOT Severe Marine Pollutant N

**U.S. Department of Homeland Security**

This product contains the following DHS chemicals:

Component	DHS Chemical Facility Anti-Terrorism Standard
Formaldehyde	11250 lb STQ (solution)
Sodium phosphate, monobasic	2000 lb STQ

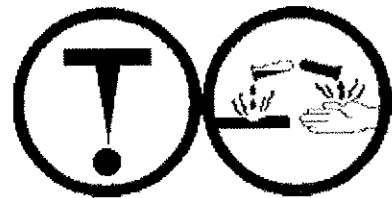
**Other International Regulations**

**Mexico - Grade** Slight risk, Grade 1

**Canada**

This product has been classified in accordance with the hazard criteria of the Controlled Products Regulations (CPR) and the MSDS contains all the information required by the CPR.

**WHMIS Hazard Class** D2A Very toxic materials  
 E Corrosive material



**16. Other information**

**Prepared By** Regulatory Affairs  
 Thermo Fisher Scientific  
 Email: EMSDS.RA@thermofisher.com Richard Allan Scientific  
 A Subsidiary of Thermo Fisher Scientific  
 Tel: (800) 522-7270

**Creation Date** 05-Feb-2014  
**Revision Date** 05-Feb-2014  
**Print Date** 05-Feb-2014  
**Revision Summary** "\*\*\*\*", and red text indicates revision

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**Disclaimer**

The information provided on this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guide for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered as a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other material or in any process, unless specified in the text.

**End of SDS**