

**Material Safety Data Sheet**  
**Carson's Modified Buffered Formalin**

**Section 1 - Chemical Product and Company Identification**

**MSDS Name:**

Carson's Modified Buffered Formalin

**Catalog Numbers:**

57111, 57141

**Synonyms:**

None Known.

**Company Identification:**

Richard Allan Scientific  
4481 Campus Drive  
Kalamazoo, MI 49008

**Company Phone Number:**

800-522-7270

**Emergency Phone Number:**

800-424-9300

**CHEMTREC Phone Number, US:**

(800) 424-9300

**CHEMTREC Phone Number, Europe:**

(202) 483-7616

**Section 2 - Composition, Information on Ingredients**

CAS#	Chemical Name:	Percent	EINECS/ ELINCS	Hazard Symbols	Risk Phrases
7732-18-5	Water	92-93	231-791-2		
7558-80-7	Sodium acid phosphate	1-2	231-449-2		
50-00-0	Formaldehyde	3.7	200-001-8	XI	43
67-56-1	Methyl alcohol	1.0-1.3	200-659-6	F T	11 23/24/25 39/23/24/25
1310-73-2	Sodium hydroxide	<1.0	215-185-5	C	35

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**Section 3 - Hazards Identification**

**EMERGENCY OVERVIEW**

*Appearance: Colorless clear liquid*

*Warning! Harmful if swallowed, inhaled, or absorbed through the skin. Contains formaldehyde which can cause cancer. May cause allergic respiratory and skin reaction. Causes eye, skin, and respiratory tract irritation.*

*Target Organs: Central nervous system, Lungs, Respiratory system, Skin*

**Potential Health Effects**

**Eye:**

Causes eye irritation.

**Skin:**

Causes skin irritation. Harmful if absorbed through the skin. May cause skin sensitization, an allergic reaction, which becomes evident upon re-exposure to this material.

**Ingestion:**

Harmful if swallowed. Causes gastrointestinal irritation with nausea, vomiting and diarrhea.

**Inhalation:**

Harmful if inhaled. Causes respiratory tract irritation. May cause allergic respiratory reaction.

**Chronic:**

Contains formaldehyde which can cause cancer in humans. There is sufficient evidence that formaldehyde causes nasopharyngeal cancer in humans, a rare cancer in developed countries. There is limited evidence that formaldehyde causes cancer of the nasal cavity and paranasal sinuses and strong but not sufficient evidence for leukemia.

**Section 4 - First Aid Measures**

**Eyes:**

Immediately flush eyes with plenty of water for at least 15 minutes, occasionally lifting the upper and lower eyelids. Get medical aid immediately.

**Skin:**

Immediately flush skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes. Get medical aid if irritation develops or persists. Wash clothing before reuse.

**Ingestion:**

Do not induce vomiting. If victim is conscious and alert, give 2-4 cupfuls of milk or water. Never give anything by mouth to an unconscious person. Get medical aid immediately.

**Inhalation:**

Get medical aid immediately. Remove from exposure and move to fresh air immediately. If breathing is difficult, give oxygen. If breathing has ceased apply artificial respiration using oxygen and a suitable mechanical device such as a bag and a mask.

**Notes to Physician:**

Treat symptomatically and supportively.

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**Section 5 - Fire Fighting Measures**

**General Information:**

As in any fire, wear a self-contained breathing apparatus in pressure-demand, MSHA/NIOSH (approved or equivalent), and full protective gear. During a fire, irritating and highly toxic gases may be generated by thermal decomposition or combustion.

**Extinguishing Media:**

Use water spray, dry chemical, carbon dioxide, or appropriate foam.

**Autoignition Temperature:**

Not available

**Explosion Limits:**

Lower: Not available      Upper: Not available

**Flash Point:**

Not available

**NFPA Rating:**

(estimated) Health: 2; Flammability: 1; Instability: 0

**Section 6 - Accidental Release Measures**

**General Information:**

Use proper personal protective equipment as indicated in Section 8.

**Spills/Leaks:**

Absorb spill with inert material (e.g. vermiculite, sand or earth), then place in suitable container. Clean up spills immediately, observing precautions in the Protective Equipment section. Provide ventilation.

**Section 7 - Handling and Storage**

**Handling:**

Wash thoroughly after handling. Remove contaminated clothing and wash before reuse. Avoid contact with eyes, skin, and clothing. Use only with adequate ventilation. Avoid breathing vapor or mist.

**Storage:**

Store in a tightly closed container. Store in a cool, dry, well-ventilated area away from incompatible substances.

**Section 8 - Exposure Controls, Personal Protection**

**Engineering Controls:**

Facilities storing or utilizing this material should be equipped with an eyewash facility and a safety shower. Use adequate general or local exhaust ventilation to keep airborne concentrations below the permissible exposure limits. See 29CFR 1910.1048 for regulatory requirements pertaining to all occupational exposures to formaldehyde, i.e., from formaldehyde gas, its solutions, and materials that release formaldehyde.

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**Exposure Limits**

Chemical Name:	ACGIH	NIOSH	OSHA
<b>Water</b>	None listed	None listed	None listed
<b>Sodium acid phosphate</b>	None listed	None listed	None listed
<b>Formaldehyde</b>	0.3 ppm Ceiling	0.016 ppm TWA 20 ppm IDLH 0.1 ppm Ceiling (15 min)	0.75 ppm TWA; 0.5 ppm Action Level; 0.75 ppm TWA; 2 ppm STEL (Irritant and potential cancer hazard - see 29 CFR 1910.1048);
<b>Methyl alcohol</b>	200 ppm TWA; 250 ppm STEL; Skin - potential significant contribution to overall exposure by the cutaneous route	200 ppm TWA; 260 mg/m3 TWA 6000 ppm IDLH	200 ppm TWA; 260 mg/m3 TWA;
<b>Sodium hydroxide</b>	2 mg/m3 Ceiling	10 mg/m3 IDLH 2 mg/m3 Ceiling	2 mg/m3 TWA;

**OSHA Vacated PELs**

Formaldehyde: 3 ppm TWA (unless specified in 1910.1048)  
Methyl alcohol: 200 ppm TWA; 260 mg/m3 TWA

**Personal Protective Equipment**

**Eyes:**

Wear chemical splash goggles.

**Skin:**

Wear appropriate protective gloves to prevent skin exposure.

**Clothing:**

Wear appropriate protective clothing to prevent skin exposure.

**Respirators:**

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.

**Section 9 - Physical and Chemical Properties**

**Physical State:** Clear liquid  
**Color:** Colorless  
**Odor:** Formaldehyde  
**pH:** No information found  
**Vapor Pressure:** 19 mm Hg  
**Vapor Density:** 1.1 (Air=1)  
**Evaporation Rate:** 0.43 (Butyl acetate=1)  
**Viscosity:** No information found  
**Boiling Point:** 95.6-99.4°C  
**Freezing/Melting Point:** No information found

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**Decomposition Temperature:** No information found

**Solubility in water:** Soluble.

**Specific Gravity/Density:** 1.09 @ 21°C

**Molecular Formula:** Solution

**Molecular Weight:** No information found

**Section 10 - Stability and Reactivity**

**Chemical Stability:**

Stable under normal temperatures and pressures.

**Conditions to Avoid:**

Excess heat, confined spaces

**Incompatibilities with Other Materials**

Strong oxidizing agents, magnesium, nitric acid, sulfuric acid, nitromethane, bromine, cyanuric chloride, chlorine, acetyl bromide, beryllium dihydride, calcium carbide, barium perchlorate

**Hazardous Decomposition Products**

Carbon monoxide, carbon dioxide, formaldehyde, formic acid

**Hazardous Polymerization**

Has not been reported

**Section 11 - Toxicological Information**

**RTECS:**

CAS# 7732-18-5: ZC0110000  
CAS# 7558-80-7: WA1900000  
CAS# 50-00-0: LP8925000  
CAS# 67-56-1: PC1400000  
CAS# 1310-73-2: WB4900000

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**LD50/LC50:**

CAS# 7732-18-5:

Oral, rat: LD50 = >90 mL/kg.

CAS# 7558-80-7:

Draize test, rabbit, eye: 150 mg Mild

Oral, rat: LD50 = 8290 mg/kg.

CAS# 50-00-0:

Draize test, rabbit, eye: 750 ug/24H Severe

Draize test, rabbit, eye: 750 ug Severe

Draize test, rabbit, eye: 10 mg Severe

Draize test, rabbit, eye: 37% Severe

Draize test, rabbit, skin: 2 mg/24H Severe

Draize test, rabbit, skin: 50 mg/24H Moderate

Inhalation, mouse: LC50 = 454 mg/m<sup>3</sup>/4H

Inhalation, mouse: LC50 = 505 mg/m<sup>3</sup>/2H

Inhalation, rat: LC50 = 203 mg/m<sup>3</sup>

Inhalation, rat: LC50 = 578 mg/m<sup>3</sup>/2H

Inhalation, rat: LC50 = 250 ppm/2H

Oral, mouse: LD50 = 42 mg/kg

Oral, mouse: LD50 = 385 mg/kg

Oral, mouse: LD50 = 500 mg/kg

Oral, rat: LD50 = 100 mg/kg

Oral, rat: LD50 = 500 mg/kg

Skin, rabbit: LD50 = 270 uL/kg

Skin, rabbit: LD50 = 270 mg/kg.

CAS# 67-56-1:

Draize test, rabbit, eye: 40 mg Moderate

Draize test, rabbit, eye: 100 mg/24H Moderate

Draize test, rabbit, skin: 20 mg/24H Moderate

Inhalation, rabbit: LC50 = 81000 mg/m<sup>3</sup>/14H

Inhalation, rat: LC50 = 64000 ppm/4H

Oral, mouse: LD50 = 7300 mg/kg

Oral, rabbit: LD50 = 14200 mg/kg

Oral, rat: LD50 = 5600 mg/kg

Skin, rabbit: LD50 = 15800 mg/kg.

CAS# 1310-73-2:

Draize test, rabbit, eye: 400 ug Mild

Draize test, rabbit, eye: 1% Severe

Draize test, rabbit, eye: 50 ug/24H Severe

Draize test, rabbit, eye: 1 mg/24H Severe

Draize test, rabbit, skin: 500 mg/24H Severe.

**Carcinogenicity:**

CAS# 7732-18-5: Not listed as a carcinogen by ACGIH, IARC, NTP, or CA Prop 65.

CAS# 7558-80-7: Not listed as a carcinogen by ACGIH, IARC, NTP, or CA Prop 65.

CAS# 50-00-0

ACGIH: A2 - Suspected Human Carcinogen

California: carcinogen, initial date 1/1/88 (gas)

NTP: Suspect carcinogen

IARC: Group 1 carcinogen

CAS# 67-56-1: Not listed as a carcinogen by ACGIH, IARC, NTP, or CA Prop 65.

CAS# 1310-73-2: Not listed as a carcinogen by ACGIH, IARC, NTP, or CA Prop 65.

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**Epidemiology:**

In June 2004 an expert IARC group determined that there is now sufficient evidence that formaldehyde causes nasopharyngeal cancer in humans, a rare cancer in developed countries.

**Teratogenicity:**

No information found

**Reproductive:**

No information found

**Mutagenicity:**

No information found

**Neurotoxicity:**

No information found

**Other:**

See actual entry in RTECS for complete information.

**Section 12 - Ecological Information**

No information found

**Section 13 - Disposal Considerations**

Chemical waste generators must determine whether a discarded chemical is classified as a hazardous waste. US EPA guidelines for the classification determination are listed in 40 CFR Part 261.3. Additionally, waste generators must consult state and local hazardous waste regulations to ensure complete and accurate classification.

**RCRA P Series Wastes**

None of the components are on this list.

**RCRA U Series Wastes**

CAS# 50-00-0: waste number U122. CAS# 67-56-1: waste number U154 (Ignitable waste).

**Section 14 - Transport Information**

	<b>US DOT</b>	<b>Canadian TDG</b>
<b>Proper Shipping Name:</b>	AVIATION REGULATED LIQUID, N.O.S. (Formalin)	AVIATION REGULATED LIQUID, N.O.S. (Formalin)
<b>Hazard Class:</b>	9	9
<b>UN Number:</b>	UN3334	UN3334
<b>Packing Group:</b>		

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USA RQ: CAS# 50-00-0: 100 lb final RQ; 45.4 kg final RQ

USA RQ: CAS# 67-56-1: 5000 lb final RQ; 2270 kg final RQ

USA RQ: CAS# 1310-73-2: 1000 lb final RQ; 454 kg final RQ

**Section 15 - Regulatory Information**

**US Federal**

**TSCA**

CAS# 7732-18-5 is listed on the TSCA Inventory.  
CAS# 7558-80-7 is listed on the TSCA Inventory.  
CAS# 50-00-0 is listed on the TSCA Inventory.  
CAS# 67-56-1 is listed on the TSCA Inventory.  
CAS# 1310-73-2 is listed on the TSCA Inventory.

**Health and Safety Reporting List**

None of the components are on this list.

**Chemical Test Rules**

None of the components are on this list.

**TSCA Section 12b**

None of the components are on this list.

**TSCA Significant New Use Rule (SNUR)**

None of the components are on this list.

**CERCLA Hazardous Substances and corresponding RQs**

CAS# 50-00-0: 100 lb final RQ; 45.4 kg final RQ  
CAS# 67-56-1: 5000 lb final RQ; 2270 kg final RQ  
CAS# 1310-73-2: 1000 lb final RQ; 454 kg final RQ

**SARA Section 302 Extremely Hazardous Substances**

CAS# 50-00-0: 500 lb TPQ

**SARA Hazard Categories**

CAS# 50-00-0: immediate, delayed.  
CAS# 67-56-1: immediate, fire.  
CAS# 1310-73-2: immediate, reactive.

**SARA Section 313**

This material contains Formaldehyde (CAS# 50-00-0, 3.7%), which is subject to the reporting requirements of Section 313 of SARA Title III and 40 CFR Part 372.

This material contains Methyl alcohol (CAS# 67-56-1, 1.0-1.3%), which is subject to the reporting requirements of Section 313 of SARA Title III and 40 CFR Part 372.

**Clean Air Act - Hazardous Air Pollutants (HAPs)**

CAS# 50-00-0 is listed as a hazardous air pollutant (HAP).  
CAS# 67-56-1 is listed as a hazardous air pollutant (HAP).

**Clean Air Act - Class 1 Ozone Depletors**

None of the components are on this list.

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**Clean Air Act - Class 2 Ozone Depletors**

None of the components are on this list.

**Clean Water Act - Hazardous Substances**

CAS# 50-00-0 is listed as a Hazardous Substance under the CWA.

CAS# 1310-73-2 is listed as a Hazardous Substance under the CWA.

**Clean Water Act - Priority Pollutants**

None of the components are on this list.

**Clean Water Act - Toxic Pollutants**

None of the components are on this list.

**OSHA - Highly Hazardous**

CAS# 50-00-0 is considered highly hazardous by OSHA.

**OSHA - Specifically Regulated Chemicals**

CAS# 50-00-0 is a specifically regulated chemical by OSHA.

**US State**

**State Right to Know**

Formaldehyde can be found on the following state Right-to-Know lists: California, New Jersey, Pennsylvania, Minnesota, Massachusetts.

Methyl alcohol can be found on the following state Right-to-Know lists: California, New Jersey, Pennsylvania, Minnesota, Massachusetts.

Sodium hydroxide can be found on the following state Right-to-Know lists: California, New Jersey, Pennsylvania, Minnesota, Massachusetts.

**California Prop 65**

WARNING: This product contains Formaldehyde, a chemical known to the State of California to cause cancer.

**California No Significant Risk Level**

None of the components are on this list.

None of the components are on this list.

CAS# 50-00-0: 40 æg/day NSRL

None of the components are on this list.

None of the components are on this list.

**European/International Regulations**

**European Labelling in Accordance with EC Directives:**

Hazard Symbols: T

Risk Phrases: R 45 May cause cancer.

R 43 May cause sensitization by skin contact.

Safety Phrases: S 53 Avoid exposure - obtain special instructions before use.

S 24 Avoid contact with skin.

S 36 Wear suitable protective clothing.

S 37 Wear suitable gloves.

S 45 In case of accident or if you feel unwell, seek medical advice immediately (show the label where possible).

**WGK (Water Danger/Protection)**

No information found

**United Kingdom Occupational Exposure Limits**

No information found

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**United Kingdom Maximum Exposure Limits**

No information found

**Canadian DSL/NDSL**

CAS# 7732-18-5 is listed on Canada's DSL List.  
CAS# 7558-80-7 is listed on Canada's DSL List.  
CAS# 50-00-0 is listed on Canada's DSL List.  
CAS# 67-56-1 is listed on Canada's DSL List.  
CAS# 1310-73-2 is listed on Canada's DSL List.

**Canadian WHMIS Classifications**

This product has a WHMIS classification of D2A, D2B.  
This product has been classified in accordance with the hazard criteria of the Controlled Products Regulations and the MSDS contains all of the information required by those regulations.

**Canadian Ingredient Disclosure List**

CAS# 50-00-0 is listed on the Canadian Ingredient Disclosure List.  
CAS# 67-56-1 is listed on the Canadian Ingredient Disclosure List.  
CAS# 1310-73-2 is listed on the Canadian Ingredient Disclosure List.

**Section 16 - Other Information**

Color information has been  
MSDS Creation Date: October 20, 2005  
Revision Date: October 20, 2005

**Revisions were made in Sections:**

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*This MSDS is intended for review and guidance in the receipt, storage, handling, use and disposal of product purchased from us, and for no other purpose. Use this product only as directed and in accordance with applicable instructions and warnings provided with the product. Please consult your institution's policies regarding use of this product. If you have obtained this MSDS other than in connection with the supply of this product from us, this MSDS should be consulted for general information only, and should not be relied upon for any purpose. As with the use of all hazardous materials, you should in all instances follow the guidance of the MSDS provided or available with the specific product purchased.*