

SAFETY DATA SHEET

Creation Date 24-Mar-2014

Revision Date 24-Mar-2014

Revision Number 1

1. Identification

Product Name Carson`s Modified Buffered Formalin

Cat No. : 57111, 57141

Synonyms No information available.

Recommended Use Laboratory chemicals

Uses advised against No Information available

Details of the supplier of the safety data sheet

Company

Richard Allan Scientific
A Subsidiary of Thermo Fisher Scientific
4481 Campus Drive
Kalamazoo, MI 49008
Tel: (800) 522-7270

Emergency Telephone Number

Chemtrec US: (800) 424-9300
Chemtrec EU: 001 (202) 483-7616

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 - Central nervous system (CNS).	
Specific target organ toxicity - (repeated exposure)	Category 2
Target Organs - Kidney.	

Label Elements

Signal Word

Danger

Hazard Statements

Causes skin irritation
May cause an allergic skin reaction
Causes serious eye damage
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 birth defects or other reproductive harm.

Unknown Acute Toxicity

.? % of the mixture consists of ingredients of unknown toxicity.

3. Composition / information on ingredients

Haz/Non-haz

Component	CAS-No	Weight %
Water	7732-18-5	90-92
Formaldehyde	50-00-0	3-4
Methyl alcohol	67-56-1	1-2
Sodium phosphate, monobasic	7558-80-7	<1
Sodium hydroxide	1310-73-2	< 1.0

4. First-aid measures

General Advice	If symptoms persist, call a physician. Show this safety data sheet to the doctor in attendance.
Eye Contact	Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. Obtain medical attention. Immediately flush with plenty of water. After initial flushing, remove any contact lenses and continue flushing for at least 15 minutes. Keep eye wide open while rinsing. If symptoms persist, call a physician.
Skin Contact	Wash off immediately with plenty of water for at least 15 minutes. Obtain medical attention. Call a physician immediately. SPEEDY ACTION IS CRITICAL, GET MEDICAL AID IMMEDIATELY.. If symptoms persist, call a physician. If skin irritation persists, call a physician. Wash off immediately with soap and plenty of water while removing all contaminated clothes and shoes.
Inhalation	Move to fresh air. If breathing is difficult, give oxygen. Obtain medical attention. Immediate medical attention is not required. Move to fresh air in case of accidental inhalation of vapors. If symptoms persist, call a physician.
Ingestion	Do not induce vomiting. Obtain medical attention. Clean mouth with water and drink afterwards plenty of water. Do not induce vomiting without medical advice. Never give anything by mouth to an unconscious person. Consult a physician.
Most important symptoms/effects	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.
Notes to Physician	Treat symptomatically.

5. Fire-fighting measures

Unsuitable Extinguishing Media	No information available.
Flash Point	No information available.
Method -	No information available
Autoignition Temperature	No information available.
Explosion Limits	
Upper	No data available
Lower	No data available
Sensitivity to Mechanical Impact	No information available
Sensitivity to Static Discharge	No information available

Specific Hazards Arising from the Chemical

Thermal decomposition can lead to release of irritating gases and vapors.

Hazardous Combustion Products Carbon monoxide (CO), Carbon dioxide (CO₂), Formaldehyde.

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

NFPA

Health
3

Flammability
1

Instability
0

Physical hazards
N/A

6. Accidental release measures

Personal Precautions

Use personal protective equipment. Ensure adequate ventilation. Avoid contact with skin, eyes and clothing. Evacuate personnel to safe areas. Keep people away from and upwind of spill/leak.

Environmental Precautions

Should not be released into the environment. See Section 12 for additional ecological Information. Do not flush into surface water or sanitary sewer system. Prevent further leakage or spillage if safe to do so. Prevent product from entering drains.

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. Do not get in eyes, on skin, or on clothing. Pay attention to flashback. No information available.. Do not take internally.

Storage

Keep containers tightly closed in a cool, well-ventilated place. Keep in properly labeled containers.

8. Exposure controls / personal protection

Exposure Guidelines

Component	ACGIH TLV	OSHA PEL	NIOSH IDLH
Formaldehyde	Ceiling: 0.3 ppm	(Vacated) TWA: 3 ppm (Vacated) STEL: 10 ppm (Vacated) Ceiling: 5 ppm TWA: 0.75 ppm STEL: 2 ppm	IDLH: 20 ppm TWA: 0.016 ppm Ceiling: 0.1 ppm
Methyl alcohol	TWA: 200 ppm STEL: 250 ppm Skin	(Vacated) TWA: 200 ppm (Vacated) TWA: 260 mg/m ³ (Vacated) STEL: 250 ppm (Vacated) STEL: 325 mg/m ³ Skin TWA: 200 ppm TWA: 260 mg/m ³	IDLH: 6000 ppm TWA: 200 ppm TWA: 260 mg/m ³ STEL: 250 ppm STEL: 325 mg/m ³
Sodium hydroxide	Ceiling: 2 mg/m ³	(Vacated) Ceiling: 2 mg/m ³ TWA: 2 mg/m ³	IDLH: 10 mg/m ³ Ceiling: 2 mg/m ³

Component	Quebec	Mexico OEL (TWA)	Ontario TWAEV
Formaldehyde	Ceiling: 2 ppm Ceiling: 3 mg/m ³	Ceiling: 2 ppm Ceiling: 3 mg/m ³	STEL: 1.0 ppm CEV: 1.5 ppm
Methyl alcohol	TWA: 200 ppm TWA: 262 mg/m ³ STEL: 250 ppm STEL: 328 mg/m ³ Skin	TWA: 200 ppm TWA: 260 mg/m ³ STEL: 250 ppm STEL: 310 mg/m ³	TWA: 200 ppm STEL: 250 ppm Skin
Sodium hydroxide	Ceiling: 2 mg/m ³	Ceiling: 2 mg/m ³	CEV: 2 mg/m ³

Legend

ACGIH - American Conference of Governmental Hygienists

OSHA - Occupational Safety and Health Administration

NIOSH IDLH: The National Institute for Occupational Safety and Health Immediately Dangerous to Life or Health

Engineering Measures Use only under a chemical fume hood. Ensure that eyewash stations and safety showers are close to the workstation location.

Personal Protective Equipment

- Eye/face Protection** Tightly fitting safety goggles. Face-shield.
- Skin and body protection** Long sleeved clothing. Apron. Impervious gloves.
- 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** When using, do not eat, drink or smoke. Provide regular cleaning of equipment, work area and clothing.

9. Physical and chemical properties

Physical State	Liquid
Appearance	Colorless
Odor	pungent
Odor Threshold	No information available.
pH	No information available.
Melting Point/Range	No data available
Boiling Point/Range	95.6 - 99°C / 204.1 - 210.9°F
Flash Point	No information available.
Evaporation Rate	0.43 (Butyl Acetate = 1.0)
Flammability (solid,gas)	No information available
Flammability or explosive limits	
Upper	No data available
Lower	No data available
Vapor Pressure	19 mmHg
Vapor Density	1.1 (Air = 1.0)
Relative Density	1.09
Solubility	Soluble in water
Partition coefficient; n-octanol/water	No data available
Autoignition Temperature	No information available.
Decomposition temperature	No information available.
Viscosity	No information available.

10. Stability and reactivity

- Reactive Hazard** None known, based on information available.
- Stability** Stable under normal conditions.
- Conditions to Avoid** Incompatible products. Excess heat.
- Incompatible Materials** Strong oxidizing agents, Strong acids
- Hazardous Decomposition Products** Carbon monoxide (CO), Carbon dioxide (CO₂), Formaldehyde
- 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
Water	-	Not listed	Not listed
Formaldehyde	500 mg/kg (Rat)	270 mg/kg (Rabbit)	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, monobasic	8290 mg/kg (Rat)	7940 mg/kg (Rabbit)	Not listed
Sodium hydroxide	Not listed	1350 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 Irritating to eyes and skin
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	A2	X	A2
Methyl alcohol	67-56-1	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
Sodium hydroxide	1310-73-2	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*

NTP: (National Toxicity Program)

*Group 2A - Probably Carcinogenic to Humans
 Group 2B - Possibly Carcinogenic to Humans
 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 No information available.

Reproductive Effects	Experiments have shown reproductive toxicity effects on laboratory animals.
Developmental Effects	Developmental effects have occurred in experimental animals.
Teratogenicity	No information available.
STOT - single exposure	Central nervous system (CNS).
STOT - repeated exposure	Kidney.
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.. 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
Sodium hydroxide	-	45.4 mg/L LC50 96 h	-	-

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
Formaldehyde - 50-00-0	U122	-
Methyl alcohol - 67-56-1	U154	-

14. Transport information

DOT Not regulated

14. Transport information

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	IECSC	KECL
Water	X	X	-	231-791-2	-		X	-	X	X	X
Formaldehyde	X	X	-	200-001-8	-		X	X	X	X	X
Methyl alcohol	X	X	-	200-659-6	-		X	X	X	X	X
Sodium phosphate, monobasic	X	X	-	231-449-2	-		X	X	X	X	X
Sodium hydroxide	X	X	-	215-185-5	-		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 %
Formaldehyde	50-00-0	3-4	0.1
Methyl alcohol	67-56-1	1-2	1.0

SARA 311/312 Hazardous Categorization

Acute Health Hazard Yes
 Chronic Health Hazard Yes
 Fire Hazard No
 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	100 lb	-	-

Component	CWA - Hazardous Substances	CWA - Reportable Quantities	CWA - Toxic Pollutants	CWA - Priority Pollutants
Sodium hydroxide	X	1000 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
OSHA - Occupational Safety and Health Administration

Component	Specifically Regulated Chemicals	Highly Hazardous Chemicals
Formaldehyde	2 ppm STEL 0.5 ppm Action Level 0.75 ppm TWA	TQ: 1000 lb

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
Formaldehyde	100 lb	100 lb
Methyl alcohol	5000 lb	-
Sodium hydroxide	1000 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	40 µg/day
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 hydroxide	X	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 No information available

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
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Revision Summary This document has been updated to comply with the US OSHA HazCom 2012 Standard replacing the current legislation under 29 CFR 1910.1200 to align with the Globally Harmonized System of Classification and Labeling of Chemicals (GHS).

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