



Expect Service

Radiation Products Design Inc

MATERIAL SAFETY DATA SHEET

RPD INFORMATION

Address 5218 Barthel Industrial Drive
Albertville, MN 55301

Website www.rpdinc.com

Email sales@rpdinc.com

Phone 763-497-2071 or 800-497-2071

Fax 763-497-2295

RPD PRODUCT INFORMATION

RPD is an authorized distributor

Item Number	Description
464-040	Carfusion Dye/Castellanis Paint, Six - 4oz Bottles
464-040-1	Carfusion Dye/Castellanis Paint, One 4oz. Bottle

Material Safety Data Sheet

Creation Date 11-Mar-2009

Revision Date 11-Mar-2009

Revision Number: 1

1. PRODUCT AND COMPANY IDENTIFICATION

Product Name Castellani's Paint

Cat No. 464-040, 464-040-1

Synonyms No information available.

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: (202) 483-7616
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2. HAZARDS IDENTIFICATION

WARNING!

Emergency Overview

Flammable liquid and vapor. Cancer hazard. This substance has caused adverse reproductive and fetal effects in humans. Irritating to eyes. May cause skin and respiratory tract irritation.

Appearance Reddish-violet.

Physical State Liquid.

Odor hydrocarbon-like.

Target Organ Effects Reproductive System, Eyes, Kidney, Liver, spleen

Potential Health Effects

Acute Effects

Principle Routes of Exposure

Eyes

Irritating to eyes.

Skin

May cause irritation. May be harmful in contact with skin.

Inhalation

May cause irritation of respiratory tract. May be harmful if inhaled.

Ingestion

Ingestion may cause gastrointestinal irritation, nausea, vomiting and diarrhea. May be harmful if swallowed.

Chronic Effects

May cause cancer. This substance has caused adverse reproductive and fetal effects in humans. Teratogenic effects have occurred in humans.. Tumorigenic effects have been reported in experimental animals.. Mutagenic effects have occurred in experimental animals..

See Section 11 for additional Toxicological information.

Aggravated Medical Conditions

Central nervous system disorders. Preexisting eye disorders. Kidney disorders. Liver disorders. Skin disorders.

3. COMPOSITION/INFORMATION ON INGREDIENTS

Haz/Non-haz

Component	CAS-No	Weight %
Water	7732-18-5	65-75
Ethyl alcohol	64-17-5	15-25
Acetone	67-64-1	3-7
Resorcinol	108-46-3	<1
Phenol	108-95-2	<1
Boric acid (H3BO3)	10043-35-3	<1
C.I. Basic red 9 monohydrochloride	569-61-9	<1

4. FIRST AID MEASURES

Eye Contact	Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. Obtain medical attention.
Skin Contact	Wash off immediately with plenty of water for at least 15 minutes. Get medical attention immediately if symptoms occur.
Inhalation	Move to fresh air. If breathing is difficult, give oxygen. Do not use mouth-to-mouth resuscitation if victim ingested or inhaled the substance; induce artificial respiration with a respiratory medical device.. Get medical attention immediately if symptoms occur.
Ingestion	Do not induce vomiting. Call a physician or Poison Control Center immediately.
Notes to Physician	Treat symptomatically.

5. FIRE-FIGHTING MEASURES

Flash Point	36°C / 96.8°F
Autoignition Temperature	No information available.
Flammability Limits in Air	
Suitable Extinguishing Media	Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide.
Unsuitable Extinguishing Media	No information available.
Hazardous Combustion Products	No information available.
Sensitivity to mechanical impact	No information available.
Sensitivity to static discharge	No information available.

Specific Hazards Arising from the Chemical

Flammable. Risk of ignition. Vapors may form explosive mixtures with air. Vapors may travel to source of ignition and flash back. Containers may explode when heated.

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

NFPA **Health 2** **Flammability 3** **Instability 0** **Physical hazards N/A**

6. ACCIDENTAL RELEASE MEASURES

- Personal Precautions** Use personal protective equipment. Remove all sources of ignition. Take precautionary measures against static discharges. Do not get in eyes, on skin, or on clothing.
- Environmental Precautions** Should not be released into the environment.
- Methods for Containment and Clean Up** Remove all sources of ignition. Soak up with inert absorbent material. Keep in suitable and closed containers for disposal.

7. HANDLING AND STORAGE

- Handling** Use only under a chemical fume hood. Use explosion-proof equipment. Keep away from open flames, hot surfaces and sources of ignition. Use only non-sparking tools. Take precautionary measures against static discharges. Do not get in eyes, on skin, or on clothing. Do not breathe vapors or spray mist.
- Storage** Keep containers tightly closed in a dry, cool and well-ventilated place. Keep away from heat and sources of ignition. Flammables area.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

- Engineering Measures** Use only under a chemical fume hood. Use explosion-proof electrical/ventilating/lighting/equipment. Ensure that eyewash stations and safety showers are close to the workstation location.

Exposure Guidelines

Component	ACGIH TLV	OSHA PEL	NIOSH IDLH
Ethyl alcohol	= 1000 ppm TWA	= 1000 ppm TWA = 1900 mg/m ³ TWA = 1000 ppm TWA	= 3300 ppm IDLH 10% LEL = 1900 mg/m ³ TWA = 1000 ppm TWA
Acetone	TWA: 500 ppm STEL: 750 ppm	(Vacated) TWA: 1800 mg/m ³ (Vacated) TWA: 750 ppm (Vacated) STEL: 1000 ppm (Vacated) STEL: 2400 mg/m ³ TWA: 1000 ppm TWA: 2400 mg/m ³	IDLH: 2500 ppm TWA: 590 mg/m ³ TWA: 250 ppm
Resorcinol	TWA: 10 ppm STEL: 20 ppm	(Vacated) TWA: 10 ppm (Vacated) TWA: 45 mg/m ³ (Vacated) STEL: 20 ppm (Vacated) STEL: 90 mg/m ³	TWA: 45 mg/m ³ TWA: 10 ppm STEL: 20 ppm STEL: 90 mg/m ³
Phenol	TWA: 5 ppm Skin	(Vacated) TWA: 19 mg/m ³ (Vacated) TWA: 5 ppm Skin TWA: 19 mg/m ³ TWA: 5 ppm	IDLH: 250 ppm TWA: 19 mg/m ³ TWA: 5 ppm Ceiling: 15.6 ppm Ceiling: 60 mg/m ³
Boric acid (H3BO3)	TWA: 2 mg/m ³ STEL: 6 mg/m ³		

Component	Quebec	Mexico OEL (TWA)	Ontario TWAEV
Ethyl alcohol	= 1000 ppm TWAEV = 1880 mg/m ³ TWAEV	= 1900 mg/m ³ TWA = 1000 ppm TWA	= 1000 ppm TWAEV = 1900 mg/m ³ TWAEV

Component	Quebec	Mexico OEL (TWA)	Ontario TWAEV
Acetone	TWA: 1190 mg/m ³ TWA: 500 ppm STEL: 1000 ppm STEL: 2380 mg/m ³	TWA: 1000 ppm TWA: 2400 mg/m ³ STEL: 1260 ppm STEL: 3000 mg/m ³	TWA: 500 ppm STEL: 750 ppm
Resorcinol	TWA: 10 ppm TWA: 45 mg/m ³ STEL: 20 ppm STEL: 90 mg/m ³	TWA: 10 ppm TWA: 45 mg/m ³ STEL: 90 mg/m ³ STEL: 20 ppm	TWA: 10 ppm TWA: 45 mg/m ³ STEL: 20 ppm STEL: 90 mg/m ³
Phenol	TWA: 19 mg/m ³ TWA: 5 ppm Skin	TWA: 19 mg/m ³ TWA: 5 ppm STEL: 10 ppm STEL: 38 mg/m ³	TWA: 19 mg/m ³ TWA: 5 ppm Skin
Boric acid (H3BO3)			TWA: 2 mg/m ³ STEL: 6 mg/m ³

NIOSH IDLH: Immediately Dangerous to Life or Health

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.

9. PHYSICAL AND CHEMICAL PROPERTIES

Physical State	Liquid
Appearance	Reddish-violet
Odor	hydrocarbon-like
pH	Not applicable
Vapor Pressure	No information available.
Vapor Density	No information available.
Viscosity	No information available.
Boiling Point/Range	Not applicable
Melting Point/Range	No information available.
Decomposition temperature °C	No information available.
Flash Point	36°C / 96.8°F
Evaporation Rate	No information available.
Specific Gravity	No information available.
Solubility	No information available.

10. STABILITY AND REACTIVITY

Stability	Stable under normal conditions.
Conditions to Avoid	Incompatible products. Heat, flames and sparks.
Incompatible Materials	Strong oxidizing agents, Acids, Acid anhydrides, Acid chlorides
Hazardous Decomposition Products	Carbon monoxide (CO), Carbon dioxide (CO ₂)
Hazardous Polymerization	Hazardous polymerization does not occur.
Hazardous Reactions .	None under normal processing..

11. TOXICOLOGICAL INFORMATION

Acute Toxicity

Component Information

Component	LD50 Oral	LD50 Dermal	LC50 Inhalation
Water	90000 mL/kg (Rat)	Not listed	Not listed
Ethyl alcohol	= 7060 mg/kg Oral LD50 Rat	Not listed	Not listed
Acetone	5800 mg/kg (Rat)	Not listed	Not listed
Resorcinol	202 mg/kg (Rat)	3360 mg/kg (Rabbit)	21.3 mg/L (Rat) 1 h
Phenol	317 mg/kg (Rat)	630 mg/kg (Rabbit)	316 mg/m ³ (Rat) 4 h
Boric acid (H3BO3)	2660 mg/kg (Rat)	2000 mg/kg (Rabbit)	0.16 mg/L (Rat) 4 h
C.I. Basic red 9 monohydrochloride	5000 g/kg (Mouse)	Not listed	Not listed

Chronic Toxicity

Carcinogenicity

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

Component	ACGIH	IARC	NTP	OSHA	Mexico
Ethyl alcohol	A4 - Not Classifiable as a Human Carcinogen	Monograph 96 [2007] (in alcoholic beverages)	Not listed	Present	A4 - Not classifiable as a human carcinogen
C.I. Basic red 9 monohydrochloride	Not listed	Group 2B	Reasonably Anticipated	X	Not listed

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)

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

OSHA: (Occupational Safety & Health Administration)

OSHA: (Occupational Safety & Health Administration)

X - Present

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 experimental animals..

Reproductive Effects

Adverse reproductive effects have occurred in humans..

Developmental Effects

Substances known to cause developmental toxicity in humans.

Teratogenicity

Teratogenic effects have occurred in humans..

Other Adverse Effects

Tumorigenic effects have been reported in experimental animals..

Endocrine Disruptor Information

Component	EU - Endocrine Disruptors Candidate List	EU - Endocrine Disruptors - Evaluated Substances	Japan - Endocrine Disruptor Information
Resorcinol	Group I Chemical	High Exposure Concern	Not applicable

12. ECOLOGICAL INFORMATION**Ecotoxicity**

Component	Freshwater Algae	Freshwater Fish	Microtox	Water Flea
Ethyl alcohol	Not listed	= 12900 mg/L LC50 Oncorhynchus mykiss 96 h flow-through 30 days old = 14.2 mg/L LC50 Pimephales promelas 96 h	= 34634 mg/L EC50 Photobacterium phosphoreum 30 min = 35470 mg/L EC50 Photobacterium phosphoreum 5 min	= 10800 mg/L EC50 Daphnia magna 24 h = 9268 mg/L EC50 Daphnia magna 48 h
Acetone	Not listed	LC50= 5540 mg/L Oncorhynchus mykiss 96 h LC50= 6210 mg/L Pimephales promelas 96 h LC50= 8300 mg/L Lepomis macrochirus 96 h	EC50 = 14500 mg/L 15 min	EC50 = 0.0039 mg/L 48 h EC50 = 12600 mg/L 48 h EC50 = 12700 mg/L 48 h
Resorcinol	EC50 1.1 - 72 mg/L 72 h	LC50= 100 mg/L Pimephales promelas 96 h LC50= 34.7 mg/L Leuciscus idus 96 h LC50= 40 mg/L Pimephales promelas 96 h LC50= 53.4 mg/L Pimephales promelas 96 h LC50> 100 mg/L Oncorhynchus mykiss 96 h	EC50 = 265 mg/L 30 min EC50 = 375 mg/L 5 min EC50 = 543 mg/L 48 h	EC50 <= 0.8 mg/L 48 h EC50 = 72.6 mg/L 48 h
Phenol	EC50 = 150 mg/L 96 h	LC50 5 - 12 mg/L Oncorhynchus mykiss 96 h LC50= 23.88 mg/L Lepomis macrochirus 96 h LC50= 24 mg/L Pimephales promelas 96 h LC50= 27.8 mg/L Brachydanio rerio 96 h LC50= 40 mg/L Poecilia reticulata 96 h LC50= 8.9 mg/L Oncorhynchus mykiss 96 h	EC50 21 - 36 mg/L 30 min EC50 = 23.28 mg/L 5 min EC50 = 25.61 mg/L 15 min EC50 = 28.8 mg/L 5 min EC50 = 31.6 mg/L 15 min	LC50 = 13 mg/L 48 h EC50 = 23.0 mg/L 48 h
Boric acid (H3BO3)	Not listed	Not listed	Not listed	EC50 658 - 875 mg/L 48 h EC50 = 115.0 mg/L 48 h

Persistence and Degradability

No information available

Bioaccumulation/ Accumulation

No information available

Mobility

Component	log Pow
Ethyl alcohol	= -0.32
Acetone	-0.24
Resorcinol	0.79

Component	log Pow
Phenol	1.47
Boric acid (H3BO3)	-0.757

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
Acetone - 67-64-1	waste number U002 (Ignitable waste)	-
Resorcinol - 108-46-3	waste number U201	-
Phenol - 108-95-2	waste number U188	-

14. TRANSPORT INFORMATION

DOT

UN-No UN1993
Proper Shipping Name FLAMMABLE LIQUIDS, N.O.S.
Proper technical name (Ethanol, Acetone)
Hazard Class 3
Packing Group III

TDG

UN-No UN1993
Proper Shipping Name FLAMMABLE LIQUIDS, N.O.S.
Hazard Class 3
Packing Group III

IATA

UN-No UN1993
Proper Shipping Name FLAMMABLE LIQUIDS, N.O.S.
Hazard Class 3
Packing Group III

IMDG/IMO

UN-No UN1993
Proper Shipping Name FLAMMABLE LIQUIDS, N.O.S.
Hazard Class 3
Packing Group III

15. REGULATORY INFORMATION

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All of the components in the product are on the following Inventory lists: All of the components in the product are on the following Inventory lists:

International Inventories

Component	TSCA	DSL	NDSL	EINECS	ELINCS	NLP	PICCS	ENCS	AICS	CHINA	KECL
Water	Present	X	-	231-791-2	-		X	-	X	X	KE-35400 X
Ethyl alcohol	Present	Present	-	200-578-6	-		Present	2-202	Present	Present	KE-13217
Acetone	Present	X	-	200-662-2	-		X	X	X	X	KE-29367 X
Resorcinol	Present	X	-	203-585-2	-		X	X	X	X	KE-02557 X
Phenol	Present	X	-	203-632-7	-		X	X	X	X	KE-28209 X
Boric acid (H3BO3)	Present	X	-	233-139-2	-		X	X	X	X	KE-03499 X
C.I. Basic red 9 monohydrochloride	Present	X	-	209-321-2	-		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 %
Phenol	108-95-2	<1	1.0

SARA 311/312 Hazardous Categorization

Acute Health Hazard	No
Chronic Health Hazard	No
Fire Hazard	Yes

Sudden Release of Pressure Hazard
Reactive Hazard

No
No

Clean Water Act

Component	CWA - Hazardous Substances	CWA - Reportable Quantities	CWA - Toxic Pollutants	CWA - Priority Pollutants
Resorcinol	X	5000 lb	-	-
Phenol	X	1000 lb	X	X

Clean Air Act

Component	HAPS Data	Class 1 Ozone Depletors	Class 2 Ozone Depletors
Phenol	X	-	-

OSHA

Not applicable

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
Acetone	5000 lb	-
Resorcinol	5000 lb	-
Phenol	1000 lb	1000 lb

California Proposition 65

This product contains the following Proposition 65 chemicals:

Ethyl alcohol is only considered a Proposition 65 developmental hazard when it is ingested as an alcoholic beverage.

Component	CAS-No	California Prop. 65	Prop 65 NSRL
Ethyl alcohol	64-17-5	Developmental	-
C.I. Basic red 9 monohydrochloride	569-61-9	Carcinogen	3 µg/day

State Right-to-Know

Component	Massachusetts	New Jersey	Pennsylvania	Illinois	Rhode Island
Ethyl alcohol	Teratogen	sn 0844	Present	-	Toxic; Flammable
Acetone	X	X	X	-	X
Resorcinol	X	X	X	-	X
Phenol	X	X	X	X	X
Boric acid (H3BO3)	-	X	-	-	-
C.I. Basic red 9 monohydrochloride	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:

