

MATERIAL SAFETY DATA SHEET

SECTION 1 - General Information

Product Name: T2-MR Developer, Working Solution (MRD) Catalog #: #4200DMR

Product Use: Photographic developer
Supplier: Shimadzu Medical Systems Oceania Pty Ltd
Address: Unit E, 10-16 South Street, Rydalmere, NSW 2116
Phone No.: 02-9898-2444 Emergency Tel.: 1800 812 774 or 0419 468 514

HMIS SCALE: Health 1 Flamability 0
PPE C

SECTION 2 - Product & Hazardous Ingredients Information

HAZARDOUS INGREDIENTS	CAS No.	W?W %	PEL	LD50	LC50
Water	7732-18-5	85-90	not listed	42.6gm/kg	N/A
Sodium metabisulfite	7681-57-4	< 3	NOIOSH TWA 5 mg/m3	2000 mg/kg	N/A
Hydroquinone	123-31-9	< 2	OSHA TWA 2 mg/m3	320 mg/kg	N/A
Potassium hydroxide	1310-58-3	< 2	NIOSH © 2mg/m3	365 mg/kg	N/A

SECTION 3 - Hazards Identification

EFFECTS OF ACUTE EXPOSURE TO PRODUCT
Harmful if swallowed.

EFFECTS OF CRONIC EXPOSURE TO PRODUCT
None known.

SECTION 4 - First Aid Measures

SKIN CONTACT:

Wash exposed skin thoroughly with soap and water. If irritation persists seek medical advice.

EYE CONTACT:

Flush eyes with water for 15 minutes. Seek medical advice if symptoms persist.

INGESTION:

DO NOT induce vomiting. Seek medical attention immediately.

INHALATION:

If inhaled, remove to fresh air.

SECTION 5 - Fire Fighting Measures

Flamability YES NO IF YES UNDER WHAT CONDITIONS

MEANS OF EXTINGUISHING

As needed to extinguish adjacent fire source.

FLASH POINT (C/F) Upper limit % by volume Lower limit % by volume Autoignition Temperature (C/F)

Not appropriate Not appropriate Not appropriate Not appropriate

HAZARDOUS COMBUSTION PRODUCTS Explosion Data Sensitivity to impact Sensitivity to Static Discharge

"See Hazardous Decomposition Products" not susceptible not susceptible

SECTION 6 - Accidental Release

Flush to sewer with plenty of water, if permitted. If not, soak up with dry absorbent material. Consult with governmental regulatory agencies for appropriate disposal of this material. Wear appropriate protective equipment.

SECTION 7 - Handling and Storage

Read and follow the label, material safety data sheet, and instructions before using. Avoid any contact with skin and eyes.
Keep container tightly closed. Avoid incompatible substances. Wash thoroughly after handling this product.

SECTION 8 - Exposure Control

VENTILATION Good general ventilation

SKIN Latex or nitrile

RESPIRATORY Not normally required

OTHER Eye wash station

EYE: Splash goggles

SECTION 9 - Physical & Chemical Properties

PHYSICAL STATE Liquid	ODOR & APPEARANCE Light yellow, odorless solution.			ODOR THRESHOLD Not available
VAPOUR PRESSURE (mm-Hg) <17 mm Hg	Vapour Density (Air=1) 0.6 mm Hg	Evaporation Rate (Water=1) Not Available	Boiling Point > 212 F	Freeze Point < 32 F
pH 10.5	Specific Gravity 1.08	Solubility in Water Complete	Coef H2O/oil N/A	% Volatile (by volume) not applicable

SECTION 10 - Stability & Reactivity Data

Chemical Stability YES NO IF NO, UNDER WHAT CONDITIONS

INCOMPATIBLE WITH OTHER SUBSTANCES YES NO IF YES, WHICH ONES?
Strong oxidizing agent and strong acids.

HAZARDOUS DECOMPOSITION PRODUCTS
sulfur dioxide, only under extreme conditions.

SECTION 11 - Toxicological Information

EXPOSURE LIMITS None known	Irritancy of Product Skin: Irritant	Sensitation to Product None known	CARCINOGENICITY Not listed by IARC, OSHA, or ACGIH
TERATOGENICITY None Known	REPRODUCTIVE TOXIN Not Known	MUTAGENICITY Not Known	SYNERGISTIC PRODUCTS Not Known

SECTION 12 - Ecological Information

No Data Available

SECTION 13 - Disposal Considerations

Dispose of this product in accordance with federal, state and/or local laws.

SECTION 14 - Transportation Information

Not regulated for transportation.

SECTION 15 - Regulatory Information

SARA: Reportable quantity (RQ) for Hydroquinone 5000 lb, Potassium hydroxide 1000 lb
SARA Section 304, CERCLA Hazardous components - (None)
SARA Section 302,304,313 Hazardous components (None)
Not a controlled product under Canadian WHMIS regulations.

SECTION 16 - Other Information

The information contained in this MSDS is furnished without warranty of any kind. The user should consider this data a supplement to other data gathered and must make an independent determination of suitability from this and other sources to assure proper use and disposal of this material and the health and safety of employees and customers.

MATERIAL SAFETY DATA SHEET

SECTION 1 - General Information

Product Name: T2-MR Developer Part 1 (MRD)		Catalog #: #4200DMR
Product Use: Photographic developer	HMIS SCALE: Health 1	Flamability 0
Supplier: Shimadzu Medical Systems Oceania Pty Ltd		PPE C
Address: Unit E, 10-16 South Street, Rydalmere, NSW 2116		
Phone No.: 02-9898-2444	Emergency Tel.:	1800 812 774 or 0419 468 514

SECTION 2 - Product & Hazardous Ingredients Information

HAZARDOUS INGREDIENTS	CAS No.	W?W %	PEL	LD50	LC50
Water	7732-18-5	60-70	not listed	42.6gm/kg	N/A
Sodium metabisulfite	7681-57-4	5-10	NOIOSH TWA 5 mg/m3	2000 mg/kg	N/A
Hydroquinone	123-31-9	5-10	OSHA TWA 2 mg/m3	320 mg/kg	N/A
Potassium hydroxide	1310-58-3	2-6	NIOSH © 2mg/m3	365 mg/kg	N/A
Sodium metaborates	12179-04-3	2-6	NIOSH TWA 1mg/m3	N/A	N/A

SECTION 3 - Hazards Identification

EFFECTS OF ACUTE EXPOSURE TO PRODUCT

Harmful if swallowed.
May cause mild skin irritation and or allergic reaction.

EFFECTS OF CRONIC EXPOSURE TO PRODUCT

None known.

SECTION 4 - First Aid Measures

SKIN CONTACT:

Wash exposed skin thoroughly with soap and water. If irritation persists seek medical advice.

EYE CONTACT:

Flush eyes with water for 15 minutes. Seek medical advice if symptoms persist.

INGESTION:

DO NOT induce vomiting. Seek medical attention immediately.

INHALATION:

If inhaled, remove to fresh air.

SECTION 5 - Fire Fighting Measures

Flamability YES NO IF YES UNDER WHAT CONDITIONS

MEANS OF EXTINGUISHING

As needed to extinguish adjacent fire source.

<u>FLASH POINT (C/F)</u>	<u>Upper limit % by volume</u>	<u>Lower limit % by volume</u>	<u>Autoignition Temperature (C/F)</u>
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Not appropriate	Not appropriate	Not appropriate	Not appropriate
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<u>HAZARDOUS COMBUSTION PRODUCTS</u>	<u>Explosion Data</u>	<u>Sensitivity to impact</u>	<u>Sensitivity to Static Discharge</u>
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"See Hazardous Decomposition Products"	not susceptible	not susceptible	not susceptible
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SECTION 6 - Accidental Release

Flush to sewer with plenty of water, if permitted. If not, soak up with dry absorbent material. Consult with governmental regulatory agencies for appropriate disposal of this material. Wear appropriate protective equipment.

SECTION 7 - Handling and Storage

Read and follow the label, material safety data sheet, and instructions before using. Avoid any contact with skin and eyes. Keep container tightly closed. Avoid incompatible substances. Wash thoroughly after handling this product.

SECTION 8 - Exposure Control

VENTILLATION Good general ventilation

SKIN Latex or nitrile

RESPIRATORY Not normally required

OTHER Eye wash station

EYE: Splash goggles

SECTION 9 - Physical & Chemical Properties

PHYSICAL STATE Liquid	ODOR & APPEARANCE Light yellow, odorless solution.		ODOR THRESHOLD Not available
VAPOUR PRESSURE (mm-Hg) <17 mm Hg	Vapour Density (Air=1) 0.6 mm Hg	Evaporation Rate (Water=1) Not Available	Boiling Point > 212 F
pH 10.5	Specific Gravity 1.27	Solubility in Water Complete	Freeze Point < 32 F
		Coef H2O/oil N/A	% Volatile (by volume) 80-90% as water

SECTION 10 - Stability & Reactivity Data

Chemical Stability IF NO, UNDER WHAT CONDITIONS

YES NO

INCOMPATIBLE WITH OTHER SUBSTANCES

IF YES, WHICH ONES?

YES NO

Strong oxidizing agent and strong acids.

HAZARDOUS DECOMPOSITION PRODUCTS

SECTION 11 - Toxicological Information

EXPOSURE LIMITS None known	Irritancy of Product Skin: Irritant	Sensitation to Product None known	CARCINOGENICITY Not listed by IARC, OSHA, or ACGIH
TERATOGENICITY None Known	REPRODUCTIVE TOXIN Not Known	MUTAGENICITY Not Known	SYNERGISTIC PRODUCTS Not Known

SECTION 12 - Ecological Information

No Data Available

SECTION 13 - Disposal Considerations

Dispose of this product in accordance with federal, state and/or local laws.

SECTION 14 - Transportation Information

Not regulated for transportation.

SECTION 15 - Regulatory Information

SARA: Reportable quantity (RQ) for Hydroquinone 5000 lb, Potassium hydroxide 1000 lb

SARA Section 304, CERCLA Hazardous components - (None)

SARA Section 302,304,313 Hazardous components (None)

Not a controlled product under Canadian WHMIS regulations.

SECTION 16 - Other Information

The information contained in this MSDS is furnished without warranty of any kind. The user should consider this data a supplement to other data gathered and must make an independent determination of suitability from this and other sources to assure proper use and disposal of this material and the health and safety of employees and customers.

MATERIAL SAFETY DATA SHEET

SECTION 1 - General Information

Product Name: T2-MR Developer Part 2 (MRD) **Catalog #:** #4200DMR
Product Use: Photographic developer **HMIS SCALE:** Health 1 Flamability 0
Supplier: Shimadzu Medical Systems Oceania Pty Ltd **PPE** C
Address: Unit E, 10-16 South Street, Rydalmere, NSW 2116
Phone No.: 02-9898-2444 **Emergency Tel.:** 1800 812 774 or 0419 468 514

SECTION 2 - Product & Hazardous Ingredients Information

HAZARDOUS INGREDIENTS	CAS No.	W?W %	PEL	LD50	LC50
Water	7732-18-5	60-75	not listed	42.6gm/kg	N/A
Gluteraldehyde bis-bisulfite	7420-89-5	20-40	not listed	N/A	N/A

SECTION 3 - Hazards Identification

EFFECTS OF ACUTE EXPOSURE TO PRODUCT

Harmful if swallowed.
May cause mild skin irritation and or allergic reaction.

EFFECTS OF CRONIC EXPOSURE TO PRODUCT

None known.

SECTION 4 - First Aid Measures

SKIN CONTACT:

Wash exposed skin thoroughly with soap and water. If irritation persists seek medical advice.

EYE CONTACT:

Flush eyes with water for 15 minutes. Seek medical advice if symptoms persist.

INGESTION:

DO NOT induce vomiting. Seek medical attention immediately.

INHALATION:

If inhaled, remove to fresh air.

SECTION 5 - Fire Fighting Measures

Flamability YES NO IF YES UNDER WHAT CONDITIONS

MEANS OF EXTINGUISHING

As needed to extinguish adjacent fire source.

FLASH POINT (C/F) Upper limit % by volume Lower limit % by volume Autoignition Temperature (C/F)

Not appropriate Not appropriate Not appropriate Not appropriate

HAZARDOUS COMBUSTION PRODUCTS Explosion Data Sensitivity to impact Sensitivity to Static Discharge

"See Hazardous Decomposition Products" not susceptable not susceptable

SECTION 6 - Accidental Release

Flush to sewer with plenty of water, if permitted. If not, soak up with dry absorbent material. Consult with governmental regulatory agencies for appropriate disposal of this material. Wear appropriate protective equipment.

SECTION 7 - Handling and Storage

Read and follow the label, material safety data sheet, and instructions before using. Avoid any contact with skin and eyes. Keep container tightly closed. Avoid incompatible substances. Wash thoroughly after handling this product.

SECTION 8 - Exposure Control

VENTILATION Good general ventilation

SKIN Latex or nitrile

RESPIRATORY Not normally required

OTHER Eye wash station

EYE: Splash goggles

SECTION 9 - Physical & Chemical Properties

PHYSICAL STATE Liquid	ODOR & APPEARANCE Clear, light yellow liquid			ODOR THRESHOLD Not available
VAPOUR PRESSURE (mm-Hg) <17 mm Hg	Vapour Density (Air=1) 0.6 mm Hg	Evaporation Rate (Water=1) Not Available	Boiling Point > 212 F	Freeze Point < 32 F
pH 2.9	Specific Gravity 1.075	Solubility in Water Complete	Coef H2O/oil N/A	% Volatile (by volume) 80-90% as water

SECTION 10 - Stability & Reactivity Data

Chemical Stability IF NO, UNDER WHAT CONDITIONS

YES NO

INCOMPATIBLE WITH OTHER SUBSTANCES IF YES, WHICH ONES?

YES NO

HAZARDOUS DECOMPOSITION PRODUCTS

no hazardous decomposition products.

SECTION 11 - Toxicological Information

EXPOSURE LIMITS None known	Irritancy of Product Skin: Irritant	Sensitization to Product None known	CARCINOGENICITY Not listed by IARC, OSHA, or ACGIH
TERATOGENICITY None Known	REPRODUCTIVE TOXIN Not Known	MUTAGENICITY Not Known	SYNERGISTIC PRODUCTS Not Known

SECTION 12 - Ecological Information

No Data Available

SECTION 13 - Disposal Considerations

Dispose of this product in accordance with federal, state and/or local laws.

SECTION 14 - Transportation Information

Not regulated for transportation.

SECTION 15 - Regulatory Information

SARA Section 304, CERCLA Hazardous components - (None)

SARA Section 302,304,313 Hazardous components (None)

Not a controlled product under Canadian WHMIS regulations.

SECTION 16 - Other Information

The information contained in this MSDS is furnished without warranty of any kind. The user should consider this data a supplement to other data gathered and must make an independent determination of suitability from this and other sources to assure proper use and disposal of this material and the health and safety of employees and customers.

MATERIAL SAFETY DATA SHEET

SECTION 1 - General Information

Product Name: T2-MR Developer, SODIUM SULFITE (MRD) **Catalog #:** #4200DMR
Product Use: Photographic Developer **HMIS SCALE:** Health 2 Flammability 0
Supplier: Shimadzu Medical Systems Oceania Pty Ltd **Reactivity 2** PPE C
Address: Unit E, 10-16 South Street, Rydalmere, NSW 2116
Phone No.: 02-9898-2444 **Emergency Tel.:** 1800 812 774 or 0419 468 514

SECTION 2 - Product & Hazardous Ingredients Information

HAZARDOUS INGREDIENTS	CAS No.	W?W %	PEL	LD50	LC50
Sodium Sulfite	7757-83-7	100	As sulfur Dioxide TWA/TLV 2ppm OSHA/ACGIH STEL 5ppm OSHA/ACGIH	2825 mg/kg	not available

SECTION 3 - Hazards Identification

EFFECTS OF ACUTE EXPOSURE TO PRODUCT

Harmful if swallowed. May cause burning or irritation of eyes and mucous membranes.
May cause mild skin irritation and or allergic reaction.
Prolonged inhalation of vapors may be irritating, may effect breathing & lungs. May cause headaches.

EFFECTS OF CHRONIC EXPOSURE TO PRODUCT

Overexposure may adversely affect respiratory system and nervous system.

SECTION 4 - First Aid Measures

SKIN CONTACT:

Wash exposed skin thoroughly with soap and water. If irritation persists seek medical advice.

EYE CONTACT:

Immediately flush eyes with water for 15 minutes. Seek medical advice if symptoms persist.

INGESTION:

Induce vomiting by giving 2 glasses of water & sticking finger in throat. Seek medical attention immediately.

INHALATION:

If inhaled, remove to fresh air. If breathing stops give artificial respiration/oxygen. Seek immediate medical attention.

SECTION 5 - Fire Fighting Measures

Flammability	YES _____	NO <u>X</u>	IF YES UNDER WHAT CONDITIONS:			
FLASH POINT (C/F)			Upper limit % by volume	Explosion Data	Sensitivity to impact	Sensitivity to Static Discharge
	Not appropriate		Not appropriate	not susceptible		not susceptible
HAZARDOUS COMBUSTION PRODUCTS			Lower limit % by volume	Auto ignition Temperature (C/F)		
	May release hazardous gas at fire temperature.		Not appropriate	Not appropriate		

MEANS OF EXTINGUISHING

As needed to extinguish adjacent fire source. Wear NIOSH-approved respirators. Use water spray to keep containers cool, and to knock down vapors & gases. Do not runoff to sewers & waterways.

SECTION 6 - Accidental Release

Promptly sweep up material with minimal dusting & shovel into empty container with a cover. Rinse spilled area with plenty of water.
Provide ventilation to clear sulfur dioxide fumes which may be generated.

SECTION 7 - Handling and Storage

Read and follow the label, material safety data sheet, and instructions before using. Avoid any contact with skin and eyes.
Do not breath dust. Keep container tightly closed. Avoid incompatible substances. Wash thoroughly after handling this product.

Store in cool, dry, well ventilated area away from acids and oxidizing agents.

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Product Name: T2-MR Developer, SODIUM SULFITE (MRD) Catalog #: #4200DMR

SECTION 8 - Exposure Control

VENTILLATION Good local exhaust if dusty conditions exist, if not good general ventilation.
SKIN Latex or nitril gloves & full work clothing. **RESPIRATORY** NIOSH approved respirator.
OTHER Eye wash station & Safety shower **EYE:** Chemical safety glasses

SECTION 9 - Physical & Chemical Properties

PHYSICAL STATE Solid	ODOR & APPEARANCE White to pale yellow crystals or powder. Odorless			ODOR THRESHOLD Odorless
VAPOUR PRESSURE (mm-Hg) N/A	Vapor Density (Air=1) N/A	Evaporation Rate (Water=1) Not Available	Boiling Point N/A	Freeze Point N/A
pH 9-10 (1% SOLUTION)	Specific Gravity 2.63 (water =1.0)	Solubility in Water 21%	Coef H2O/oil N/A	% Volatile (by volume) N/A

SECTION 10 - Stability & Reactivity Data

Chemical Stability IF NO, UNDER WHAT CONDITIONS
YES NO Stable under normal conditions.

INCOMPATIBLE WITH OTHER SUBSTANCES IF YES, WHICH ONES?
YES NO Strong oxidizers & acids.

HAZARDOUS DECOMPOSITION PRODUCTS: May release sulfur dioxide gas.

REACTIVITY: Stable under ambient pressure & temperature.

SECTION 11 - Toxicological Information

EXPOSURE LIMITS Sulfur dioxide: 2 ppm <i>See PEL Sect #2</i>	Irritancy of Product Skin & reparatory: Irritant Eye: Irritant	Sensitation to Product None known	CARCINOGENICITY Not listed by IARC, OSHA, or ACGIH
TERATOGENICITY None Known	REPRODUCTIVE TOXIN Not Known	MUTAGENICITY Not Known	SYNERGISTIC PRODUCTS Not Known

SECTION 12 - Ecological Information

Not classified as hazardous to aquatic organisms.

SECTION 13 - Disposal Considerations

Unused product is not classified as hazardous waste.

Dispose of this product in accordance with federal, state and/or local laws.

SECTION 14 - Transportation Information

Not regulated for transportation.

SECTION 15 - Regulatory Information

USA: not regulated.
CANADA: D2B
Foreign chemical control inventory status: Listed on Canadian DSL, Australian AICS, Philippines PICC, Chinese IECSC, Japanese MITI, Korean KECL, and EU EINECS.

SECTION 16 - Other Information

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DATE: 1-Mar-13

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