

# SAFETY DATA SHEET

Issuing Date: 24-Feb-2015

Version 1

## REDI-CHEM A Solution (Developer)

### 1. PRODUCT AND COMPANY IDENTIFICATION

**Product Name** REDI-CHEM A Solution (Developer)

**Product code** 27272

**Product Use** X-ray processing.

**Manufactured by**

FUJIFILM Hunt Chemicals U.S.A., Inc.  
40 Boroline Road  
Allendale, NJ 07401-0320

**MSDS are available at the following website(s):** <http://www.fujifilmusa.com/msds>

**Company Phone Number** U.S.A: 800-473-3854

**Emergency Telephone** Transport-CHEMTREC Inside NA: 800-424-9300  
Transport CHEMTREC Outside NA: 703-527-3887  
Transport-CANUTEC Inside Canada: 613-996-6666  
Medical Emergency (24 hour): 877-935-7387

**E-mail** EHS@fujifilm.com

### 2. HAZARDS IDENTIFICATION

**Classification**

Serious eye damage/eye irritation	Category 2
Respiratory Sensitization	Category 1
Skin sensitization	Category 1
Germ Cell Mutagenicity	Category 2
Carcinogenicity	Category 2

**GHS Label elements, including precautionary statements**

Danger

**Hazard Statements**

Causes serious eye irritation  
May cause allergy or asthma symptoms or breathing difficulties if inhaled  
May cause an allergic skin reaction  
Suspected of causing genetic defects  
Suspected of causing cancer

**Precautionary Statements****Prevention**

Obtain special instructions before use  
Do not handle until all safety precautions have been read and understood  
Wash face, hands and any exposed skin thoroughly after handling  
Avoid breathing dust/fume/gas/mist/vapors/spray  
In case of inadequate ventilation wear respiratory protection  
Contaminated work clothing should not be allowed out of the workplace  
Wear protective gloves/protective clothing/eye protection/face protection

**Response**

IF exposed or concerned: Get medical advice/attention  
IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing  
If eye irritation persists: Get medical advice/attention  
IF ON SKIN: Wash with plenty of soap and water  
If skin irritation or rash occurs: Get medical advice/attention  
Wash contaminated clothing before reuse  
IF INHALED: If breathing is difficult, remove victim to fresh air and keep at rest in a position comfortable for breathing  
If experiencing respiratory symptoms: Call a POISON CENTER or doctor/physician

**Storage**

Store locked up

**Disposal**

Dispose of contents/container to an approved waste disposal plant

**Hazards not otherwise classified (HNOC)**

Not classified

**Other hazards**

Toxic to aquatic life with long lasting effects

**3. COMPOSITION/INFORMATION ON INGREDIENTS**

Chemical Name	CAS No	Weight-%
HYDROQUINONE	123-31-9	1-5%
GLUTARALDEHYDE	111-30-8	0.1-1%

**4. FIRST AID MEASURES****First aid measures for different exposure routes****General advice**

Do not breathe dust/fume/gas/mist/vapors/spray. Do not get in eyes, on skin, or on clothing.  
Call a doctor immediately if allergic signs, particularly in the respiratory tract, are observed.

<b>Eye contact</b>	IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If eye irritation persists: Get medical advice/attention.
<b>Skin contact</b>	IF ON SKIN: Wash with plenty of soap and water. If skin irritation or rash occurs: Get medical advice/attention.
<b>Inhalation</b>	Move to fresh air. If breathing is irregular or stopped, administer artificial respiration. Avoid direct contact with skin. Use barrier to give mouth-to-mouth resuscitation. Get medical attention immediately if symptoms occur.
<b>Ingestion</b>	If swallowed, do not induce vomiting - seek medical advice.
<b>Protection of First-aiders</b>	Use personal protective equipment. Avoid contact with skin, eyes or clothing. Ensure that medical personnel are aware of the material(s) involved, and take precautions to protect themselves.

**Most important symptoms/effects, acute and delayed**

May cause allergy or asthma symptoms or breathing difficulties if inhaled. May cause allergic skin reaction. May cause redness, itching, and pain.

**Indication of immediate medical attention and special treatment needed, if necessary**

May cause sensitization of susceptible persons. Treat symptomatically.

## 5. FIRE-FIGHTING MEASURES

**Suitable Extinguishing Media**

Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.

**Unsuitable Extinguishing Media**

None known.

**Specific hazards arising from the chemical**

Thermal decomposition can lead to release of irritating gases and vapors. In the event of fire and/or explosion do not breathe fumes. May cause sensitization by inhalation and skin contact. May cause sensitization by skin contact.

**Hazardous Combustion Products**

Carbon oxides. Sulfur oxides. Sodium oxides. Potassium oxides.

**Explosion Data**

**Sensitivity to Mechanical Impact** none

**Sensitivity to Static Discharge** none

**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.

## 6. ACCIDENTAL RELEASE MEASURES

**Personal precautions, protective equipment and emergency procedures**

Use personal protective equipment. Do not get in eyes, on skin, or on clothing. Evacuate personnel to safe areas. Keep people away from and upwind of spill/leak.

**Environmental precautions**

Prevent entry into waterways, sewers, basements or confined areas. Do not flush into surface water or sanitary sewer system. Prevent product from entering drains.

### **Methods and materials for containment and cleaning up**

**Methods for Containment** Prevent further leakage or spillage if safe to do so.

**Methods for cleaning up** Use personal protective equipment. Cover liquid spill with sand, earth or other noncombustible absorbent material. Take up mechanically, placing in appropriate containers for disposal. Clean contaminated surface thoroughly. After cleaning, flush away traces with water.

## **7. HANDLING AND STORAGE**

### **Precautions for safe handling**

Wear personal protective equipment. Avoid contact with skin, eyes or clothing. Avoid breathing vapors or mists. Ensure adequate ventilation.

### **Conditions for safe storage, including any incompatibilities**

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

## **8. EXPOSURE CONTROLS/PERSONAL PROTECTION**

### **Control parameters**

#### **Exposure Guidelines**

Chemical Name	ACGIH TLV	OSHA PEL	NIOSH IDLH	AIHA - Workplace Environmental Exposure Levels (WEELs) - TWAs
HYDROQUINONE	TWA: 1 mg/m <sup>3</sup>	TWA: 2 mg/m <sup>3</sup> (vacated) TWA: 2 mg/m <sup>3</sup>	IDLH: 50 mg/m <sup>3</sup> Ceiling: 2 mg/m <sup>3</sup> 15 min	
GLUTARALDEHYDE	Ceiling: 0.05 ppm activated and inactivated	(vacated) Ceiling: 0.2 ppm (vacated) Ceiling: 0.8 mg/m <sup>3</sup>	Ceiling: 0.2 ppm Ceiling: 0.8 mg/m <sup>3</sup>	

### **Exposure controls**

**Engineering Measures** Ventilation systems

### **Individual protection measures, such as personal protective equipment**

**Eye/Face Protection** Tightly fitting safety goggles.

**Skin and body protection** Wear protective gloves/clothing.

**Respiratory protection** If exposure limits are exceeded or irritation is experienced, NIOSH/MSHA approved respiratory protection should be worn. Positive-pressure supplied air respirators may be required for high airborne contaminant concentrations. Respiratory protection must be provided in accordance with current local regulations.

**General Hygiene Considerations** When using do not eat, drink or smoke. Regular cleaning of equipment, work area and clothing is recommended.

## **9. PHYSICAL AND CHEMICAL PROPERTIES**

<b>Appearance</b>	Brown slightly hazy	<b>Odor</b>	none
<b>Odor Threshold</b>	Not available	<b>Physical State @20°C</b>	Liquid
<b>pH</b>	10.2		

<b>Specific Gravity</b>	1.08	<b>Molecular Weight</b>	Not available
<b>Flash point</b>	> 201 °F / > 94 °C	<b>Autoignition temperature</b>	Not available
<b>Decomposition temperature</b>	Not available	<b>Boiling point / boiling range</b>	> 212 °F / > 100 °C
<b>Melting point / melting range</b>	Not available	<b>Freezing Point</b>	Not available
<b>Flammability Limit in Air</b>	Not available		
<b>Oxidizing Properties</b>	Not available	<b>Explosive Property Details</b>	Not available
<b>Solubility</b>	Soluble in water	<b>Partition coefficient</b>	Not available
<b>Evaporation rate</b>	Not available	<b>Vapor Pressure</b>	Not available
<b>Vapor density</b>	Not available	<b>Density</b>	Not available
<b>VOC (lb/gal)</b>	0	<b>VOC (g/l)</b>	0
<b>Dynamic viscosity</b>	Not available		

## 10. STABILITY AND REACTIVITY

### Reactivity

Stable under recommended storage conditions

### Chemical stability

Stable under recommended storage conditions.

### Possibility of hazardous reactions

None under normal processing.

### Conditions to Avoid

Excessive heat. Freezing.

### Incompatible Materials

Strong oxidizing agents. Strong acids. Strong bases.

### Hazardous Decomposition Products

Carbon oxides. Sulfur oxides. Sodium oxides. Potassium oxides.

## 11. TOXICOLOGICAL INFORMATION

### Information on likely routes of exposure

### Product Information

#### Acute toxicity

##### Inhalation

Inhalation in high concentration may cause irritation of respiratory system. May cause allergic respiratory reaction.

##### Eyes

Irritating to eyes. May cause redness and tearing.

##### Skin

Repeated or prolonged skin contact may cause allergic reactions with susceptible persons.

##### Ingestion

Ingestion may cause gastrointestinal irritation, nausea, vomiting and diarrhea. May cause additional affects as listed under "Inhalation".

### Component Information

Chemical Name	Oral LD50	Dermal LD50	LC50 (lethal concentration)
HYDROQUINONE	= 320 mg/kg ( Rat )	> 900 mg/kg ( Rat )	
GLUTARALDEHYDE	= 252 mg/kg ( Rat )	= 560 µL/kg ( Rabbit )	= 0.1 mg/L ( Rat ) 4 h

### Information on toxicological effects

No information available.

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

<b>Irritation</b>	Irritating to eyes.
<b>Corrosivity</b>	No information available.
<b>Sensitization</b>	May cause sensitization by inhalation and skin contact. May cause sensitization by skin contact.
<b>Mutagenic Effects</b>	Contains a known or suspected mutagen.
<b>Reproductive Toxicity</b>	No information available.
<b>Carcinogenicity</b>	Contains a known or suspected carcinogen.

Chemical Name	ACGIH	IARC	NTP	OSHA
HYDROQUINONE	A3	Group 3		

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

A1 - Known Human Carcinogen  
 A2 - Suspected Human Carcinogen  
 A3 - Animal Carcinogen  
 A4 - Not Classifiable as a Human Carcinogen

#### **NTP: (National Toxicity Program)**

Known - Known Carcinogen  
 Reasonably Anticipated - Reasonably Anticipated to be a Human Carcinogen

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

Group 1: Carcinogenic to humans  
 Group 2A: Probably carcinogenic to humans  
 Group 2B: Possibly carcinogenic to humans  
 Group 3: Not classifiable as to its carcinogenicity to humans

#### **OSHA: (Occupational Safety & Health Administration)**

X - Present

**STOT - single exposure** No information available.

**STOT - repeated exposure** No information available.

**Target Organ Effects** Central nervous system (CNS), Eyes, Respiratory system, Skin.

**Aspiration hazard** No information available.

### Numerical measures of toxicity - Product Information

The following values are calculated based on chapter 3.1 of the GHS document .

<b>ATEmix (oral)</b>	11185 mg/kg
<b>ATEmix (dermal)</b>	62562 mg/kg mg/l
<b>ATEmix (inhalation-vapor)</b>	1463 mg/l

**ATE: Acute toxicity estimate**

## 12. ECOLOGICAL INFORMATION

### Ecotoxicity

Chemical Name	Algae toxicity	Toxicity to fish	Toxicity to microorganisms	Toxicity to daphnia and other aquatic invertebrates
HYDROQUINONE		Pimephales promelas: 0.1 - 0.18 mg/L at 96 h Pimephales promelas: 0.044 mg/L at 96 h		
GLUTARALDEHYDE		Pimephales promelas: 5.4 mg/L at 96 h		0.56 - 1.0: 48 h Daphnia magna mg/L EC50 Static

### Persistence and degradability

No information available.

### Bioaccumulation

Chemical Name	Octonol Water Partition Coefficient (log pow)
HYDROQUINONE	0.5
GLUTARALDEHYDE	0.22

**Mobility**

No information available.

**Other adverse effects**

No information available

**13. DISPOSAL CONSIDERATIONS****Waste Disposal Methods**

Dispose of in accordance with local regulations.

**Contaminated packaging**

Do not re-use empty containers.

**14. TRANSPORT INFORMATION**

**DOT** Not regulated

**TDG** Not regulated

**MEX** Not regulated

**ICAO** Not regulated

**IATA** Not regulated

**IMDG** Not regulated

**ADR/RID** Not regulated

**ADN** Not regulated

**15. REGULATORY INFORMATION****International Inventories**

TSCA	Yes
DSL/NDL	Yes
PICCS	Yes
EINECS/ELINCS	Yes
ENCS	No
IECSC	Yes
KECL	Yes
AICS	Yes

**\*Yes - All component(s) of this product are included or are exempt from listing on the inventory.**

**\*No - Indicates the component(s) of this product are either not listed or have not been determined to be listed on the inventory.**

**TSCA** - United States Toxic Substances Control Act Section 8(b) Inventory

**DSL/NDL** - Canadian Domestic Substances List/Non-Domestic Substances List

**EINECS/ELINCS** - European Inventory of Existing Chemical Substances/European List of Notified Chemical Substances

**ENCS** - Japan Existing and New Chemical Substances

**IECSC** - China Inventory of Existing Chemical Substances

**KECL** - Korean Existing and Evaluated Chemical Substances

**PICCS** - Philippines Inventory of Chemicals and Chemical Substances

**AICS** - Australian Inventory of Chemical Substances

## **U.S. Federal Regulations**

### **TSCA Sections 4, 5 and 12(b)**

This product does not contain any chemicals regulated by TSCA Sections 4, 5 or 12(b).

### **SARA 313**

Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 (SARA). This product contains a chemical or chemicals which are subject to the reporting requirements of the Act and Title 40 of the Code of Federal Regulations, Part 372:

Chemical Name	CAS No	SARA 313 - Threshold Values %	Weight-%
HYDROQUINONE	123-31-9	1.0	1-5%

### **SARA 311/312 Hazard Categories**

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

### **Clean Water Act**

This product does not contain any substances regulated as pollutants pursuant to the Clean Water Act (40 CFR 122.21 and 40 CFR 122.42)

### **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):

Chemical Name	Hazardous Substances RQs	Extremely Hazardous Substances RQs	RQ
HYDROQUINONE	100	100 lb	RQ 100 lb final RQ RQ 45.4 kg final RQ

## **U.S. State Regulations**

### **California Proposition 65**

This product contains the following Proposition 65 chemicals:

Chemical Name	California Prop. 65
METHANOL	Developmental

## **U.S. State Right-to-Know Regulations**

Chemical Name	Massachusetts	New Jersey	Pennsylvania	Illinois	Rhode Island
HYDROQUINONE	X	X	X	X	X
GLUTARALDEHYDE	X	X	X		X

## **International Regulations**



**Canada - NDSL**

This product does not contain any NDSL chemicals.

**Mexico - Grade**

Slight risk, Grade 1

**Mexico - Carcinogen Status and Exposure Limits**

Chemical Name	Carcinogen Status	Exposure Limits
HYDROQUINONE	A3	Mexico: TWA 2 mg/m <sup>3</sup>
GLUTARALDEHYDE		Mexico: Ceiling 0.2 ppm Mexico: Ceiling 0.7 mg/m <sup>3</sup>

**Other Regulations**

No information available

**16. OTHER INFORMATION**

NFPA	Health Hazard 2	Flammability 1	Instability 0	Physical and chemical hazards -
HMIS	Health Hazard 2*	Flammability 1	Physical Hazard 0	Personal protection C

**Prepared By** FUJIFILM Environment, Health and Safety, phone: 800-473-3854

**Revision Date** 24-Feb-2015

**Revision Note** No information available

**Disclaimer** The information provided in 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 guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered 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 materials or in any process, unless specified in the text.

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