

G128 (READY FOR USE / 1+4)

SUBID:00000006616

Version 1
Revision Date 08-14-2007

Print Date 08-15-2007

SECTION 1. PRODUCT AND COMPANY IDENTIFICATION

Identification of the substance/preparation

Product name : G128 (READY FOR USE / 1+4)
 MSDS Number : 000000006616
 Use of the Substance/Preparation : Photographic developer solution
 Product code : FC59P
 Synonyms : G-128 Industrial X-Ray Developer Working Strength
 Business group : IN

Company/Undertaking Identification

Agfa Corporation
 100 Challenger Road
 Ridgefield Park, NJ 07660
 U.S.A.

Transport Emergency

Non-transportation

Call CHEMTREC : +1 800 4249300
 International : +1 703 5273887

Health Emergency Phone : +1 303 6235716
 Agfa Information Phone : +1 201 4402500

SECTION 2. COMPOSITION/INFORMATION ON INGREDIENTS

Aqueous photographic developer solution, mainly consisting of:

	<u>CAS-No.</u>	<u>Concentration [%]</u>	
• Potassium sulphite	10117-38-1	>= 5.0	<= 10.0
• Diethylene glycol	111-46-6	>= 1.0	<= 5.0
• Hydroquinone	123-31-9	>= 1.0	<= 5.0
• Potassium carbonate	584-08-7	>= 1.0	<= 5.0
• Water	7732-18-5	>= 80.0	<= 100.0

SECTION 3. HAZARDS IDENTIFICATION

The product as a whole has not been tested. This hazard information is for the individual ingredients.

Emergency Overview

Form : Liquid.
 Colour : Colourless to brownish
 Odour : Odourless.

WARNING !

Irritating gases/fumes may be given off during burning or thermal decomposition.
 May cause respiratory tract irritation. May cause allergic respiratory reaction. Causes skin irritation.
 May cause allergic skin reaction. Causes eye irritation.

Potential Health Effects

Primary Routes of Entry : Inhalation of vapours or mists. Eye contact. Skin contact.
 Accidental ingestion.

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Aggravated Medical Condition : Persons with preexisting eye, skin, liver, or kidney conditions or impaired pulmonary function may be more susceptible to the effects of this product.

Acute health effects
Inhalation

- Potassium sulphite : May cause an allergic reaction in some asthmatics and sulfite sensitive individuals. Possible symptoms include bronchoconstriction, sweating, flushing, hives, rapid heart rate, decreased blood pressure and anaphylaxis.
- Diethylene glycol : Inhalation of vapors is unlikely due to its low vapor pressure. However, if misted or handled at elevated temperatures, high concentrations can produce drowsiness, headache, dizziness, and nausea.
- Hydroquinone : Is expected to be irritating to the respiratory tract with symptoms of coughing, sore throat, and runny nose.
- Potassium carbonate : Is expected to be irritating to the respiratory tract with symptoms of coughing, sore throat, and runny nose.

Skin contact

- Potassium sulphite : May be irritating to the skin with symptoms of reddening and itching.
- Hydroquinone : Can be irritating to the skin with symptoms of reddening, itching, and swelling. May cause skin sensitization with symptoms of rash, itching, hives, and swelling.
- Potassium carbonate : Can be irritating to the skin with symptoms of reddening, itching, and swelling.

Eye contact

- Potassium sulphite : May be irritating to the eyes with symptoms of reddening, tearing and stinging.
- Hydroquinone : Can be irritating to the eyes with symptoms of tearing, stinging, reddening, and swelling. May cause corneal injury.
- Potassium carbonate : Can be irritating to the eyes with symptoms of tearing, stinging, reddening, and swelling.

Ingestion

- Potassium sulphite : May be harmful if swallowed. Ingestion can liberate sulfuric acid. Symptoms may include nausea, abdominal pain, vomiting, and gastric hemorrhage.
May cause an allergic reaction in some asthmatics and individuals sensitive to this chemical. Possible symptoms include bronchoconstriction, sweating, flushing, hives, rapid heart rate, decreased blood pressure, and anaphylaxis.
- Diethylene glycol : Can result in behavioral change, drowsiness, kidney and liver failure, and coma. The oral toxicity is greater in humans than in laboratory animals. The estimated single lethal dose-oral-human is 1.0 ml/kg.
- Hydroquinone : May be harmful if swallowed with symptoms including nausea, vomiting, drowsiness, dizziness, disorientation, bluish skin color, and stomach pain.

Chronic health hazards
Inhalation

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- Potassium sulphite : Prolonged or repeated exposure may result in adverse respiratory effects including cough, tightness of chest and shortness of breath
- Hydroquinone : May cause pulmonary edema with symptoms of breathing difficulty and tightness of chest.

Skin contact

- Potassium sulphite : Repeated or prolonged skin contact may cause allergic reactions with susceptible persons.
- Hydroquinone : Chronic intensive skin contact may cause dermatitis.

Eye contact

- Hydroquinone : Contact may cause brownish discoloration of conjunctiva and cornea. Repeated or prolonged eye contact may cause photophobia (sensitivity to light). Repeated exposure may cause intolerance of the eyes to light.

Carcinogenicity

The components of this product are not listed by NTP, IARC or regulated as a carcinogen by OSHA.

SECTION 4. FIRST AID MEASURES

- Eye contact : Rinse thoroughly with plenty of water for at least 15 minutes and consult a physician.
- Skin contact : Wash immediately with plenty of water and soap. If symptoms persist, seek medical advice.
- Ingestion : Rinse mouth with plenty of water. Seek medical advice.
- Inhalation : Take person to fresh air. If necessary, seek medical advice.

SECTION 5. FIRE-FIGHTING MEASURES

- Specific hazards during fire fighting : In case of fire, thermal decomposition with emission of hazardous fumes is possible (e.g. SO₂).
- Special protective equipment for fire-fighters : In the event of fire, wear self-contained breathing apparatus.
- Additional advice : Product is not combustible.

SECTION 6. ACCIDENTAL RELEASE MEASURES

- Personal precautions : See section : Exposure controls / personel protection.
- Environmental precautions : For waste disposal see section 13.
- Methods for cleaning up : Dike the spill if necessary. Soak up with absorbent material. Collect large spills into a properly labelled and sealable container. Prevent release into the drain, soil or surface water.
- Additional advice : Wash away residues with plenty of water.

SECTION 7. HANDLING AND STORAGE**Handling**

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Advice on protection against fire and explosion : No special protective measures against fire and explosion required.

Storage

Advice on common storage : Store away from strong acids and strong oxidizing agents (e.g. sodium hypochlorite).
Requirements for storage areas and containers : Keep container tightly closed. Protect from direct sunlight.

SECTION 8. EXPOSURE CONTROLS / PERSONAL PROTECTION

Exposure Limit Values (US)

Components	CAS-No.	Values	Type	Revision Date	Basis
Hydroquinone	123-31-9	2 mg/m3	TWA	2002	ACGIH
		2 mg/m3	PEL	06 1993	OSHA Z1
		2 mg/m3	TWA	1989	OSHA Z1A
		1 mg/m3	TWA	01 2006	ACGIH NIC

Exposure controls

Hygiene measures : Observe normal precautions when handling chemicals. Avoid inhaling vapour. Keep away from foodstuffs, drinks and tobacco.
Respiratory protection : Under normal conditions of use, respirator protection is not required. If respirators are used, institute a program in accordance with OSHA standard 29CFR1910.134 or Canada CSA Standard Z94.4-02.
Hand protection : Use chemical resistant gloves. In case of prolonged immersion or frequently repeated contact use gloves made of the materials: butyl rubber (thickness >= 0.36 mm, breakthrough time > 480 min), nitrile rubber (thickness >= 0.38 mm, breakthrough time > 480 min) or neoprene (thickness >= 0.65 mm, breakthrough time > 240 min). For intermittent splash protection corresponding gloves with breakthrough times > 60 min can be used. Avoid gloves made of: natural latex.
Eye protection : Safety glasses.

SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

Form : Liquid.
Colour : Colourless to brownish
Odour : Odourless.
Vapour pressure : 23.00 hPa at 20 °C (68 °F)
Relative density : 1.065 at 20 °C (68 °F)
pH (25 °C, 77 °F) : 10.5
Melting point/range : < 0 °C (< 32 °F)
Boiling point/range : > 100 °C (> 212 °F)
VOC content : 3.5 %
VOC content excluding water

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SECTION 10. STABILITY AND REACTIVITY

- Stability : The product is stable under normal conditions of storage and use.
- Hazardous decomposition products : Hazardous decomposition products
None
- Conditions to avoid : Avoid contact with strong acids and strong oxidizing agents (e.g. sodiumhypochlorite). Remove all chemicals and rinse the processing tanks thoroughly with water before using any cleansing products.

SECTION 11. TOXICOLOGICAL INFORMATION

Toxicity data specific for individual ingredients in their pure state:

Acute oral toxicity

- Potassium sulphite : LD50 rat 2,610 mg/kg
- Diethylene glycol : LD50 rat 12,565 mg/kg
- Hydroquinone : LD50 rat 320 mg/kg
- Potassium carbonate : LD50 rat > 2,000 mg/kg

Acute dermal toxicity

- Diethylene glycol : LD50 rabbit 11,890 mg/kg
- Hydroquinone : LD50 cat 5,970 mg/kg

Carcinogenicity

- Hydroquinone : Formation of benign kidney tumors occurred only after nephropathy developed and only in one strain of male rat. Additional effects have been reported. Although an increase in leukemia was reported in the female F-344 rat, this result was not reproduced in a subsequent study. There was no evidence of cancer in male mice following chronic oral administration. Increases in primarily benign tumors were noted in female mice, although this finding was not reproduced in a subsequent study. No tumors were reported in mice following long-term dermal application.

Toxicity to reproduction

- Hydroquinone : Has not caused reproductive effects in male or female animals when administered orally at dose levels not causing systemic toxicity in the mother.

Mutagenicity

- Hydroquinone : Studies using the 'Ames' test were generally negative. There is some evidence for mutagenicity from studies in animals, in isolated cells taken from animals and plants, and in other microorganisms.

Teratogenicity

- Hydroquinone : Has not caused birth defects when administered orally at dose levels not causing systemic toxicity in the mother.

Chronic toxicity

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- Diethylene glycol : Repeated ingestion over two years produced liver and kidney damage and bladder stones in laboratory rats.
- Hydroquinone : Adverse kidney effects have been observed primarily in one strain of male rat (F-344) following chronic administration of oral doses. Nephropathy did not occur in two other strains of rats, mice, or dogs.

Other information

There is insufficient scientific evidence for classifying hydroquinone as a suspected carcinogenic or mutagenic substance in humans. Epidemiologic studies over a period of 48 years, wherein -during manufacturing and use of hydroquinone- more than 800 human individuals were daily exposed at significant airborne concentrations (greater than the occupational threshold of 2 mg/m³), demonstrated that such exposure is not associated with the induction of cancer in humans. Hazard labelling of this preparation: see section 15.

SECTION 12. ECOLOGICAL INFORMATION
Elimination information (persistence and degradability)
Biodegradation

- Hydroquinone : OECD 301D Assessment of biological degradability > 80 % after 28 d

Ecotoxicity effects

Ecotoxicity data specific for individual ingredients in their pure state:

Toxicity to fish

- Potassium sulphite : Species: Leuciscus idus (golden orfe)
LC50: > 220 mg/l/ 96 h
- Diethylene glycol : Species: Lepomis macrochirus (bluegill sunfish)
LC50: > 1,000 mg/l/ 96 h
- Hydroquinone : Species: Brachidanio rerio (zebra fish)
LC50: 0.1 mg/l/ 96 h
- Potassium carbonate : Species: Pimephales promelas (fathead minnow)
LC50: > 100 mg/l/ 96 h

Toxicity to daphnia

- Potassium sulphite : Species: Daphnia magna (water flea)
EC50: 89 mg/l/ 48 h
- Diethylene glycol : Species: Daphnia magna (water flea)
EC50: > 1,000 mg/l/ 24 h
- Hydroquinone : Species: Daphnia magna (water flea)
EC50: 0.3 mg/l/ 48 h
- Potassium carbonate : Species: Daphnia magna (water flea)
EC50: 100 mg/l/ 48 h

Toxicity to algae

- Diethylene glycol : Species: Scenedesmus quadricauda (algae)
EC0: 2,700 mg/l/ 7 d
- Hydroquinone : Species: Selenastrum capricornutum (algae)
EC50: 0.3 mg/l/ 72 h

Toxicity to bacteria

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- Potassium sulphite : Species: Pseudomonas putida (bacteria)
EC10: 250 mg/l/ 17 h
- Diethylene glycol : Species: Pseudomonas putida (bacteria)
EC10: 8,000 mg/l/ 72 h

Further information on ecology

Biochemical oxygen demand : 22,100 mg/l
within 5 days (BOD5)
Chemical Oxygen Demand : 63,700 mg/l
(COD)

SECTION 13. DISPOSAL CONSIDERATIONS**Waste disposal methods**

Waste disposal should be in accordance with existing federal, state and local environmental control laws. Discharge to sewer may require approval of permitting authority and may require pretreatment.

US. RCRA Hazardous Waste Classification (40 CFR 261)

If discarded in its purchased form, this product would not be a hazardous waste either by listing or by characteristic. However, under RCRA, it is the responsibility of the product user to determine at the time of disposal, whether a material containing the product or derived from the product should be classified as a hazardous waste.

SECTION 14. TRANSPORT INFORMATION

Not dangerous cargo. Keep separated from food- and drinkstuffs.

SECTION 15. REGULATORY INFORMATION**US. Toxic Substances Control Act (TSCA)**

All of the components of this product are listed on the TSCA Inventory.

US. OSHA Classification

This product is hazardous under the criteria of the Federal OSHA Hazard Communication Standard 29 CFR 1910.1200.

US. EPA Emergency Planning and Community Right-To-Know Act (EPCRA) SARA Title III Section 302 Extremely Hazardous Substance (40 CFR 355, Appendix A)

- Hydroquinone : Threshold planning quantity, lower value: 500 lbs
- : Threshold planning quantity, upper value: 10,000 lbs

US. SARA 311/312 Hazard Categories

Immediate Health Hazard. Delayed Health Hazard.

US. EPA Emergency Planning and Community Right-To-Know Act (EPCRA) SARA Title III Section 313 Toxic Chemicals (40 CFR 372.65) - Supplier Notification Required

- Hydroquinone : De minimis concentration: 1.0 %

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US. EPA CERCLA Hazardous Substances (40 CFR 302)

- Hydroquinone : Reportable quantity: 100 lbs

US. California Prop. 65

This product does not contain any chemicals known to State of California to cause cancer, birth defects or any other harm.

State Right-to-Know Information

The following chemicals are specifically listed by individual states. Other product specific health and safety data in other sections of the MSDS may also be applicable for state requirements. For details on your regulatory requirements you should contact the appropriate agency in your state.

US. Massachusetts Commonwealth's Right-to-Know Law (Appendix A to 105 Code of Massachusetts Regulations Section 670.000)

- | | <u>CAS-No.</u> | <u>Concentration [%]</u> | |
|----------------|----------------|--------------------------|--------|
| • Hydroquinone | 123-31-9 | >= 1.0 | <= 5.0 |

US. Pennsylvania Worker and Community Right-to-Know Law (34 Pa. Code Chap. 301-323)

- | | <u>CAS-No.</u> | <u>Concentration [%]</u> | |
|---------------------|----------------|--------------------------|--------|
| • Diethylene glycol | 111-46-6 | >= 1.0 | <= 5.0 |
| • Hydroquinone | 123-31-9 | >= 1.0 | <= 5.0 |

US. Rhode Island Hazardous Substances Right-to-Know Act (R.I. Gen. Laws Section 28-21-1 et. seq.)

- | | <u>CAS-No.</u> | <u>Concentration [%]</u> | |
|---------------------|----------------|--------------------------|--------|
| • Diethylene glycol | 111-46-6 | >= 1.0 | <= 5.0 |
| • Hydroquinone | 123-31-9 | >= 1.0 | <= 5.0 |

US. Massachusetts, New Jersey, Pennsylvania or Rhode Island Right to Know Substance Lists : See Section 2.
Canadian WHMIS Classification

- D1B : Toxic Material Causing Immediate and Serious Toxic Effects
D2B : Toxic Material Causing Other Toxic Effects

Canadian Environmental Protection Act (CEPA)

All components of this product are on the Canadian DSL list.

SECTION 16. OTHER INFORMATION
US. HMIS Rating

Health	:	2
Flammability	:	0
Reactivity	:	0

(0 = Minimal, 1 = Slight, 2 = Moderate, 3 = Serious, 4 = Severe)

US. NFPA 704M Rating

Health	:	2
Flammability	:	0
Reactivity	:	0

(0 = Insignificant, 1 = Slight, 2 = Moderate, 3 = High, 4 = Extreme)

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Agfa Corporation's method of hazard communication is comprised of Product Labels and Material Safety Data Sheets. HMIS and NFPA ratings are provided by Agfa Corporation as a customer service.

This MSDS is replacing Agfa MSDS number 265RFU.005

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