

G135, Industrial X-Ray Developer/Replenisher Part A

SUBID:000001007366

Version 1
Revision Date 10-08-2007

Print Date 10-09-2007

SECTION 1. PRODUCT AND COMPANY IDENTIFICATION

Identification of the substance/preparation

Product name : G135, Industrial X-Ray Developer/Replenisher Part A
 MSDS Number : 000001007366
 Use of the Substance/Preparation : Photographic developer concentrate
 Product code : FXQV2, LCWVD, LJR2L
 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 concentrate, mainly consisting of:

	<u>CAS-No.</u>	<u>Concentration [%]</u>	
• Potassium sulphite	10117-38-1	>= 10.0	<= 20.0
• Potassium tetraborate	1332-77-0	>= 5.0	<= 10.0
• Hydroquinone	123-31-9	>= 5.0	<= 10.0
• N-(Hydroxyethyl)ethylenedia minetriacetic acid trisodium salt	139-89-9	>= 1.0	<= 5.0
• Potassium bromide	7758-02-3	>= 1.0	<= 5.0
• Water	7732-18-5	>= 60.0	<= 80.0

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 : Yellowish
 Odour : Nearly odourless

WARNING !

Causes respiratory tract irritation. May cause allergic respiratory reaction. Causes skin irritation.
 May cause allergic skin reaction. Causes eye irritation.

Potential Health Effects

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- Primary Routes of Entry : Eye contact. Skin contact. Inhalation of vapours or mists. Accidental ingestion.
- Aggravated Medical Condition : Persons with preexisting eye, skin or respiratory tract disorders 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.
- Potassium tetraborate : May cause respiratory tract irritation with symptoms of coughing, sore throat and runny nose.
- Hydroquinone : Is expected to be irritating to the respiratory tract with symptoms of coughing, sore throat, and runny nose.
- N-(Hydroxyethyl)ethylenedia minetriacetic acid trisodium salt : May cause respiratory tract irritation with symptoms of coughing, sore throat and runny nose.
- Potassium bromide : Overexposure can cause irritation to the respiratory tract resulting in coughing, runny nose and sore throat.

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.
- N-(Hydroxyethyl)ethylenedia minetriacetic acid trisodium salt : May cause irritation resulting in reddening, drying and itching.
- Potassium bromide : 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.
- N-(Hydroxyethyl)ethylenedia minetriacetic acid trisodium salt : Can be irritating to the eyes with symptoms of tearing, stinging, reddening, and swelling.
- Potassium bromide : Can be irritating to the eyes with symptoms of reddening, itching, stinging, 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.

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- Hydroquinone : May be harmful if swallowed with symptoms including nausea, vomiting, drowsiness, dizziness, disorientation, bluish skin color, and stomach pain.

Chronic health hazards
Inhalation

- 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

- Suitable extinguishing media : All extinguishing media are suitable.
- 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 : Firefighters should be equipped with self-contained breathing apparatus to protect against potentially toxic and irritating fumes.
- 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.

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- 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

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
Potassium tetraborate	1332-77-0	2 mg/m3	TWA	01 2005	ACGIH
		6 mg/m3	STEL	01 2005	ACGIH
		2 mg/m3	TWA	01 2005	ACGIH
		6 mg/m3	STEL	01 2005	ACGIH
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 : Employees should wash their hands and face before eating, drinking, or using tobacco products. Educate and train employees in the safe use and handling of this product. Emergency showers and eye wash stations should be available.
- 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 \geq 0.36 mm, breakthrough time > 480 min), nitrile rubber (thickness \geq 0.38 mm, breakthrough time > 480 min) or neoprene (thickness \geq 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 : Yellowish

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Odour	: Nearly odourless
Vapour pressure	: 23.00 hPa at 20 °C (68 °F)
Relative density	: 1.302 at 20 °C (68 °F)
pH (25 °C, 77 °F)	: 11.9
Melting point/range	: < 0 °C (< 32 °F)
Boiling point/range	: > 100 °C (> 212 °F)
Relative vapour density	: Not applicable
Flash point	: Not combustible.
VOC content	: 6.2 %
	VOC content excluding water

SECTION 10. STABILITY AND REACTIVITY

Stability	: The product is stable under normal conditions of storage and use.
Hazardous decomposition products	: Hazardous decomposition products Sulphur dioxide
Thermal decomposition	: Not applicable
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
• Hydroquinone	: LD50 rat	320 mg/kg
• Potassium bromide	: LD50 rat	3,070 mg/kg

Acute dermal toxicity

• Hydroquinone	: LD50 cat	5,970 mg/kg
• N-(Hydroxyethyl)ethylenediaminetriacetic acid trisodium salt	: LD50 rat	> 2,000 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.
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Toxicity to reproduction

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- 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

- 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 carcino- 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
- N-(Hydroxyethyl)ethylenediami
netriacetic acid trisodium salt : OECD 302B Inherent biodegradability
< 20 % 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
- Hydroquinone : Species: Brachidanio rerio (zebra fish)
LC50: 0.1 mg/l/ 96 h
- N-(Hydroxyethyl)ethylenediami
netriacetic acid trisodium salt : Species: Leuciscus idus (golden orfe)
LC50: > 100 mg/l/ 96 h
- Potassium bromide : Species: Salmo gairdneri (rainbow trout)
LC50: 3,200 mg/l/ 5 d

Toxicity to daphnia

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- Potassium sulphite : Species: Daphnia magna (water flea)
EC50: 89 mg/l/ 48 h
- Hydroquinone : Species: Daphnia magna (water flea)
EC50: 0.3 mg/l/ 48 h
- N-(Hydroxyethyl)ethylenediami
netriacetic acid trisodium salt : Species: Daphnia magna (water flea)
EC50: > 100 mg/l/ 48 h
- Potassium bromide : Species: Daphnia magna (water flea)
EC50: > 100 mg/l/ 48 h

Toxicity to algae

- Hydroquinone : Species: Selenastrum capricornutum (algae)
EC50: 0.3 mg/l/ 72 h

Toxicity to bacteria

- Potassium sulphite : Species: Pseudomonas putida (bacteria)
EC10: 250 mg/l/ 17 h

Further information on ecology

Chemical Oxygen Demand : 194,000 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.

Empty containers.

Recondition or dispose of empty container in accordance with governmental regulations.

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 classified as dangerous in the meaning of transport regulations.

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.

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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

Acute Health Hazard. Chronic 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 %
- : De minimis concentration: 1.0 %

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 | >= 5.0 - <= 10.0 |

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

- | | <u>CAS-No.</u> | <u>Concentration [%]</u> |
|----------------|----------------|--------------------------|
| • Hydroquinone | 123-31-9 | >= 5.0 - <= 10.0 |

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> |
|----------------|----------------|--------------------------|
| • Hydroquinone | 123-31-9 | >= 5.0 - <= 10.0 |

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
E : Corrosive Material

Canadian Environmental Protection Act (CEPA)

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

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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)

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 073TA.005

Section(s) changed compared to the previous issue: 8, 13

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