ILFORD PHOTO
HARMAN technology Ltd

SAFETY DATA SHEET
Ilfotec DD Film Developer/Replenisher

According to Appendix D, OSHA Hazard Communication Standard 29 CFR §1910.1200

1. Identification

Product identifier

Product name Ilfotec DD Film Developer/Replenisher

Product number 1177880

Internal identification 10122

Container size 5 Liter

Recommended use of the chemical and restrictions on use

Application Developer Solution

Details of the supplier of the safety data sheet

Supplier

Distributor
USA: Robert Distributors, 220 East Saint Clair St, Indianapolis, IN 46204
Tel:877-281-6405

Contact Person Contact Distributor: sales@robertsdistributors.com

Emergency telephone number

Emergency telephone USA/Canada: For medical emergency, call 1 800 842 9660 (Product Misuse).

2. Hazard(s) identification

Classification of the substance or mixture

Physical hazards Not Classified

Health hazards Eye Dam. 1 - H318 Skin Sens. 1 - H317 Muta. 2 - H341 Carc. 2 - H351 Repr. 1B - H360FD

Environmental hazards Aquatic Acute 1 - H400

Label elements

Pictogram

Signal word Danger

Hazard statements

H317 May cause an allergic skin reaction.
H318 Causes serious eye damage.
H341 Suspected of causing genetic defects.
H351 Suspected of causing cancer.
H360FD May damage fertility. May damage the unborn child.
H400 Very toxic to aquatic life.

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Precautionary statements

P273 Avoid release to the environment.
P302+P352 If on skin: Wash with plenty of water.
P305+P351+P338 If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P405 Store locked up.
P280 Wear protective clothing, gloves, eye and face protection.
P501 Dispose of contents/ container in accordance with local regulations.

Contains

HYDROQUINONE, Disodium Tetraborate decahydrate, Boric Acid, pentasodium (carboxylatomethyl)iminobis(ethylenenitrilo)tetraacetate

Other hazards

No information available.

3. Composition/information on ingredients

Mixtures

2,2'-OXYBISETHANOL **1-5%**

CAS number: 111-46-6

Classification
Acute Tox. 4 - H302

HYDROQUINONE **1-5%**

CAS number: 123-31-9

M factor (Acute) = 10

Classification
Acute Tox. 4 - H302
Eye Dam. 1 - H318
Skin Sens. 1 - H317
Muta. 2 - H341
Carc. 2 - H351
Aquatic Acute 1 - H400

Disodium Tetraborate decahydrate **1-5%**

CAS number: 1303-96-4

Classification
Eye Irrit. 2A - H319
Repr. 1B - H360FD

Boric Acid **1-5%**

CAS number: 10043-35-3

Classification
Repr. 1B - H360FD

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pentasodium (carboxylatomethyl)iminobis(ethylenenitrilo)tetraacetate CAS number: 140-01-2	**<1%**
Classification Acute Tox. 4 - H332 Repr. 2 - H361fd STOT RE 2 - H373	

1-Phenyl-4-methyl-4-hydroxymethyl-3-pyrazolidone CAS number: 13047-13-7	**<1%**
Classification Acute Tox. 4 - H302 Skin Sens. 1 - H317 Aquatic Chronic 2 - H411	

The full text for all hazard statements is displayed in Section 16.

4. First-aid measures

Description of first aid measures

Inhalation Move affected person to fresh air at once. Get medical attention if any discomfort continues.

Ingestion Rinse mouth thoroughly with water. Get medical attention if any discomfort continues.

Skin Contact Remove affected person from source of contamination. Remove contaminated clothing. Wash skin thoroughly with soap and water. Get medical attention if irritation persists after washing.

Eye contact Remove affected person from source of contamination. Remove any contact lenses and open eyelids wide apart. Continue to rinse for at least 15 minutes. Continue to rinse for at least 15 minutes. Get medical attention if irritation persists after washing.

Most important symptoms and effects, both acute and delayed

Inhalation No specific symptoms known.

Ingestion No specific symptoms known.

Skin contact May cause sensitisation by skin contact.

Eye contact Irritation of eyes and mucous membranes.

Indication of immediate medical attention and special treatment needed

Notes for the doctor No specific recommendations.

5. Fire-fighting measures

Extinguishing media

Suitable extinguishing media The product is non-combustible. Use extinguishing media appropriate for surrounding fire.

Special hazards arising from the substance or mixture

Specific hazards The product is non-combustible. No unusual fire or explosion hazards noted.

Hazardous combustion products Thermal decomposition or combustion products may include the following substances: Oxides of: Carbon. Sulfur. Nitrogen. Sodium. Potassium.

Advice for firefighters

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Protective actions during firefighting Avoid breathing fire gases or vapors.

Special protective equipment for firefighters Use protective equipment appropriate for surrounding materials. Selection of respiratory protection for fire fighting: follow the general fire precautions indicated in the workplace.

6. Accidental release measures

Personal precautions, protective equipment and emergency procedures

Personal precautions Avoid contact with skin and eyes. Provide adequate ventilation. For personal protection, see Section 8.

Environmental precautions

Environmental precautions Do not discharge into drains or watercourses or onto the ground. Collect and dispose of spillage as indicated in Section 13.

Methods and material for containment and cleaning up

Methods for cleaning up Wear protective clothing, gloves, eye and face protection.
Small Spillages: Flush away spillage with plenty of water.
Large Spillages: Absorb in vermiculite, dry sand or earth and place into containers. Flush contaminated area with plenty of water. Avoid the spillage or runoff entering drains, sewers or watercourses.

Reference to other sections For personal protection, see Section 8. For waste disposal, see Section 13.

7. Handling and storage

Precautions for safe handling

Usage precautions Provide adequate ventilation. Avoid spilling. Avoid contact with skin and eyes. Do not eat, drink or smoke when using this product. Read and follow manufacturer's recommendations.

Conditions for safe storage, including any incompatibilities

Storage precautions Store in tightly-closed, original container. Storage advice to ensure the product remains in a useable condition throughout its specified shelf life: Store at temperatures above 0°C. Store at temperatures not exceeding 30°C.

Storage class Chemical storage.

Specific end uses(s)

Specific end use(s) The identified uses for this product are detailed in Section 1.

8. Exposure Controls/personal protection

Control parameters

Occupational exposure limits

HYDROQUINONE

Long-term exposure limit (8-hour TWA): OSHA 2 mg/m³
Long-term exposure limit (8-hour TWA): ACGIH 1 mg/m³
A3, DSens

Disodium Tetraborate decahydrate

Long-term exposure limit (8-hour TWA): ACGIH 2 mg/m³ inhalable fraction
Short-term exposure limit (15-minute): ACGIH 6 mg/m³ inhalable fraction
A4

Boric Acid

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Long-term exposure limit (8-hour TWA): ACGIH 2 mg/m³ inhalable fraction
Short-term exposure limit (15-minute): ACGIH 6 mg/m³ inhalable fraction
A4

OSHA = Occupational Safety and Health Administration.
ACGIH = American Conference of Governmental Industrial Hygienists.
A3 = Confirmed Animal Carcinogen with Unknown Relevance to Humans.
A4 = Not Classifiable as a Human Carcinogen.
DSens = Dermal sensitizer.

Exposure controls

Protective equipment

Appropriate engineering controls	Provide adequate ventilation. This product must not be handled in a confined space without adequate ventilation.
Eye/face protection	Eyewear complying with an approved standard should be worn if a risk assessment indicates eye contact is possible.
Hand protection	Use protective gloves.
Other skin and body protection	Wear suitable protective clothing as protection against splashing or contamination.
Respiratory protection	If ventilation is inadequate, suitable respiratory protection must be worn.

9. Physical and Chemical Properties

Information on basic physical and chemical properties

Appearance	Clear liquid.
Color	Colorless.
Odor	No characteristic odor.
pH	pH (concentrated solution): 8.7
Initial boiling point and range	>100°C @ 760 mm Hg
Relative density	1.30 @ 20°C
Solubility(ies)	100% Soluble in water.
Other information	Not available.

10. Stability and reactivity

Reactivity	See the other subsections of this section for further details.
Stability	Stable under the prescribed storage conditions. No particular stability concerns.
Possibility of hazardous reactions	Under normal conditions of storage and use, no hazardous reactions will occur.
Conditions to avoid	Avoid excessive heat for prolonged periods of time. Avoid contact with acids.
Materials to avoid	Strong acids. Avoid contact with other photographic solutions and/or cleaning compounds.

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Hazardous decomposition products	Thermal decomposition or combustion products may include the following substances: Oxides of: Carbon. Sulfur. Nitrogen. Potassium. Sodium.

11. Toxicological information

Information on toxicological effects

Toxicological effects	This chemical formulation has not been tested for health effects. Exposure effects listed are based on existing health data for the individual components that comprise the mixture.
Other health effects	Hydroquinone: Carcinogen Category 3. Mutagen Category 3. ACGIH A3 IARC 3 IARC Animal Carcinogen List. IARC Int. Agency for Cancer Research.

Acute toxicity - oral

ATE oral (mg/kg)	7,804.72

Germ cell mutagenicity

Genotoxicity - in vitro	The product contains a substance that is classified as: Suspected of causing genetic defects.

Carcinogenicity

Carcinogenicity	The product contains a substance that is classified as: Suspected of causing cancer.

Reproductive toxicity

Reproductive toxicity - fertility	The product contains a substance that is classified as: May damage fertility or the unborn child.
Reproductive toxicity - development	The product contains a substance that is classified as: May damage fertility or the unborn child.

Specific target organ toxicity - repeated exposure

STOT - repeated exposure	The product contains a substance that is classified as: May cause damage to organs through prolonged or repeated exposure if inhaled.

Inhalation	May cause respiratory system irritation.
Ingestion	May cause discomfort if swallowed.
Skin Contact	Irritating to skin. May cause sensitisation by skin contact. May cause allergic contact eczema.
Eye contact	Irritation of eyes and mucous membranes. Repeated exposure may cause chronic eye irritation.
Acute and chronic health hazards	Prolonged or repeated exposure may cause severe irritation. May cause skin irritation/eczema. May cause sensitisation by skin contact. Irritating to eyes. Vapor or spray in the eyes may cause irritation and smarting. May cause allergy. May cause hypersensitivity.
Route of entry	Skin and/or eye contact Ingestion.
Medical considerations	May aggravate existing: Skin disorders and allergies. Pre-existing eye problems.

2,2'-OXYBISETHANOL

Acute toxicity - oral

Acute toxicity oral (LD_{50} mg/kg)	1,000.0
Species	Human
ATE oral (mg/kg)	1,000.0

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HYDROQUINONE

Acute toxicity - oral

Acute toxicity oral (LD_{50} mg/kg)	375.0
Species	Rat
ATE oral (mg/kg)	375.0

Carcinogenicity

IARC carcinogenicity	IARC Group 3 Not classifiable as to its carcinogenicity to humans.

pentasodium (carboxylatomethyl)iminobis(ethylenenitrilo)tetraacetate

Acute toxicity - inhalation

ATE inhalation (gases ppm)	4,500.0
ATE inhalation (vapours mg/l)	11.0
ATE inhalation (dusts/mists mg/l)	1.5

12. Ecological Information

Toxicity The product contains a substance which is very toxic to aquatic organisms.

2,2'-OXYBISETHANOL

Acute toxicity - fish	LC_{50}, 96 hours: >100 mg/l, Fish
Acute toxicity - aquatic invertebrates	EC_{50}, 48 hours: 0.3 - 1 mg/l, Daphnia magna

HYDROQUINONE

Acute aquatic toxicity

$LE(C)_{50}$	0.01 < L(E)C50 ≤ 0.1
M factor (Acute)	10
Acute toxicity - fish	LC_{50}, 96 hours: 0.10-0.18 (Fathead Minnow) mg/l, Fish
Acute toxicity - aquatic invertebrates	EC_{50}, 48 hours: 0.05 mg/l, Daphnia magna
Acute toxicity - aquatic plants	IC_{50}, 72 hours: 1.0 mg/l, Algae

Boric Acid

Acute toxicity - fish	LC_{50}, 96 hours: 600 mg/l, Fish
Acute toxicity - aquatic invertebrates	EC_{50}, 48 hours: 115-153 mg/l, Daphnia magna

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pentasodium (carboxylatomethyl)iminobis(ethylenenitrilo)tetraacetate

Acute toxicity - fish	LC_{50}, 96 hours: >1000 (lepomis macrochirus) mg/l, Fish
Acute toxicity - aquatic invertebrates	EC_{50}, 48 hours: >500 (daphnia magna) mg/l, Daphnia magna

Persistence and degradability

Persistence and degradability	There are no data on the degradability of this product.

Bioaccumulative potential

Bio-Accumulative Potential	No data available on bioaccumulation.

Mobility in soil

Mobility	The product is soluble in water.

Other adverse effects

Other adverse effects	None known.

13. Disposal considerations

Waste treatment methods

Disposal methods	Used, diluted, and spent solutions may be allowed to be discharged to sanitary sewer by permit IF allowed by local regulations. Consult your local authority for advice. Waste may have to be pre-treated before discharge. Consult local authorities before discharging any waste to sewer. Do not discharge to septic system. Waste that cannot be discharged to sewer may have to handled by a licensed hazardous waste contractor.

14. Transport information

General	Exceptions relating to marine pollutants in small packages apply to this product, so that it is not required to be labelled or transported in accordance with dangerous goods regulations. See 49CFR 171.4 (c), IATA SP A197, and IMDG 2.10.2.7.

UN Number

UN No. (TDG)	3082
UN No. (IMDG)	3082
UN No. (ICAO)	3082
UN No. (DOT)	UN3082

UN proper shipping name

Proper shipping name (TDG)	UN3082, Environmentally hazardous substance, liquid, n.o.s. (contains hydroquinone).
Proper shipping name (IMDG)	UN3082, Environmentally hazardous substance, liquid, n.o.s. (contains hydroquinone).
Proper shipping name (ICAO)	UN3082, Environmentally hazardous substance, liquid, n.o.s. (contains hydroquinone).
Proper shipping name (DOT)	ENVIRONMENTALLY HAZARDOUS SUBSTANCES, LIQUID, N.O.S. (CONTAINS HYDROQUINONE, 1-Phenyl-4-methyl-4-hydroxymethyl-3-pyrazolidone)

Transport hazard class(es)

DOT hazard class	9
DOT hazard label	9
TDG class	9 (M6)

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TDG label(s)	9
IMDG Class	9
ICAO class/division	9

Transport labels

DOT transport labels

Packing group

TDG Packing Group	III
IMDG packing group	III
ICAO packing group	III
DOT packing group	III

Environmental hazards

Environmentally Hazardous Substance

Special precautions for user

EmS	F-A, S-F
DOT reportable quantity	RQ: Hydroquinone (2968.1517 lbs)
Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code	Not applicable.

15. Regulatory information

US State Regulations

State Regulations Comments	No information available.

Inventories

US - TSCA

Boric Acid

pentasodium (carboxylatomethyl)iminobis(ethylenenitrilo)tetraacetate

1-Phenyl-4-methyl-4-hydroxymethyl-3-pyrazolidone

Potassium Sulphite

2,2'-OXYBISETHANOL

Disodium Tetraborate decahydrate

Water

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HYDROQUINONE

16. Other information

General information	HARMAN technology Ltd believe the information and recommendations contained herein are based on correct and factual data. However, no express or implied guarantee or warranty of any kind is made with respect to this information. Use this information only to supplement other information you have gathered and then make an independent determination about the completeness and suitability of all information to ensure the proper use and disposal of this product and the health and safety of employees and customers.
Key literature references and sources for data	European Photographic Chemical Industry Code of Practice For Classification And Labelling Material Safety Data Sheet, Misc. manufacturers. Dangerous Properties of Industrial Chemicals, 6.edition, N.Sax, 1984.
Issued by	SHE.Team@harmantechnology.com
Revision date	3/13/2018
Revision	2
Supersedes date	14/05/2015
SDS No.	20367
Hazard statements in full	H302 Harmful if swallowed. H317 May cause an allergic skin reaction. H318 Causes serious eye damage. H319 Causes serious eye irritation. H332 Harmful if inhaled. H341 Suspected of causing genetic defects. H351 Suspected of causing cancer. H360FD May damage fertility. May damage the unborn child. H361fd Suspected of damaging fertility. Suspected of damaging the unborn child. H373 May cause damage to organs through prolonged or repeated exposure. H400 Very toxic to aquatic life. H411 Toxic to aquatic life with long lasting effects.