

SAFETY DATA SHEET

Kodak Polychrome Graphics
A Subsidiary of Kodak

KODAK RA 2000 Developer and Replenisher

1. Identification of the substance/preparation and of the company/undertaking

Identification of the substance or preparation

Product name : KODAK RA 2000 Developer and Replenisher **Nr. SDS** : 11242

Synonyms : KAN 966154; PCD 5874; C-0112.501 **Date of issue** : 2006-08-17.

Catalogue number : 3754629; 3730637; 3661717; 3584430; 3568870 **Version** : 4.2

Area of application : Industrial applications. Graphic Arts product. Photographic developer

Company/undertaking identification

Supplier : Kodak Polychrome Graphics Europe S.A.
8, Avenue François Arago
Zone Industrielle BP 116
92164 Antony Cedex
France

Emergency telephone number : **Emergency telephone number: Int. + 31.30.2748888.**
(Dutch National Poison Information Centre) Only for physicians and medical specialists in case of an accidental poisoning.

For other EHS Information : Kodak Polychrome Graphics EHS-Affairs EU/AF/AS/AU
P.O. Box 56, 3750 GB Bunschoten, The Netherlands
Phone: Int. +31 33 299 88 80
Fax: Int. +31 33 299 88 89
E-mail: EHS-EU@kpgraphics.com

Sale Rep :
Kodak Polychrome Graphics Ltd.
Axis 1, Rhodes Way,
Watford Herts, WD2 4FD, Great Britain
Phone: +44 1923 23 66 66
Fax: +44 1923 24 47 14

2. Composition/information on ingredients

Substance/preparation : Preparation

Ingredient name	CAS number	%	EC number	Symbol / R-Phrases
Water	7732-18-5	40-70	231-791-2	Not classified.
Potassium sulfite	10117-38-1	10-15	233-321-1	Not classified.
Diethylene glycol	111-46-6	5-10	203-872-2	Xn; R22
Hydroquinone	123-31-9	5-10	204-617-8	Carc. Cat. 3; R40 Muta. Cat. 3; R68 Xn; R22 Xi; R41 R43 N; R50
Potassium carbonate	584-08-7	1-5	209-529-3	Xi; R36/38
Sodium sulfite	7757-83-7	1-5	231-821-4	Xi; R36/37/38 R31

See section 16 for the full text of the R Phrases declared above

Within the present knowledge of the supplier, this product does not contain any other hazardous ingredients in quantities requiring reporting in this section, in accordance with EU regulations or National regulations.

* Occupational Exposure Limit(s), if available, are listed in section 8

3. Hazards identification

Main hazards	: Harmful
Human health hazards	: Irritating to eyes. Limited evidence of a carcinogenic effect. Possible risk of irreversible effects. May cause sensitization by skin contact.
Environmental hazards	: Not applicable.
Physical/chemical hazards	: Not applicable.
Classification	: Carc. Cat. 3; R40 Muta. Cat. 3; R68 Xi; R36 R43

4. First aid measures

First aid measures

Inhalation	: Allow the victim to rest in a well-ventilated area. If irritation persists, get medical attention.
Ingestion	: Induce vomiting by sticking finger in throat. Have conscious person drink several glasses of water or milk. Get medical attention immediately.
Skin contact	: In case of contact, immediately flush skin with plenty of water. If irritation persists, get medical attention.
Eye contact	: Check for and remove any contact lenses. In case of contact, immediately flush eyes with plenty of water for at least 15 minutes. Get medical attention.

See section 11 for more detailed information on health effects and symptoms.

5. Fire-fighting measures

Extinguishing media

Suitable	: Use dry chemical, CO ₂ , water spray (fog) or foam.
Not suitable	: None.
Special exposure hazards	: No specific hazard.
Hazardous thermal decomposition products	: These products are carbon oxides (CO, CO ₂), sulfur oxides (SO ₂ , SO ₃ ...).
Special protective equipment for fire-fighters	: Be sure to use an approved/certified respirator or equivalent.

6. Accidental release measures

Personal precautions	: Splash goggles. Lab coat. Nitrile gloves. In case of insufficient ventilation, wear suitable respiratory equipment.
Environmental precautions	: Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers.
Methods for cleaning up	: Absorb with an inert material and place in an appropriate waste disposal container. Neutralize the residue with a dilute solution of acetic acid. Finish cleaning by spreading water on the contaminated surface and dispose of according to local and regional authority requirements.

7. Handling and storage

Handling	: Do not ingest. Avoid contact with eyes, skin and clothing. Use with adequate ventilation. Wash thoroughly after handling.
Storage	: Keep container tightly closed. Keep container in a cool, well-ventilated area. Prevent from freezing.
<u>Packaging materials</u>	
Recommended	: Use original container.

8. Exposure controls/personal protection

<u>Ingredient name</u>	<u>Occupational exposure limits</u>
Europe Hydroquinone	ACGIH TLV (United States, 1/2006). TWA: 2 mg/m ³ 8 hour/hours.
United Kingdom (UK) Diethylene glycol	EH40-WEL (United Kingdom (UK), 1/2005). TWA: 101 mg/m ³ 8 hour/hours.
Hydroquinone	EH40-WEL (United Kingdom (UK), 1/2005). TWA: 0.5 mg/m ³ 8 hour/hours.

Exposure controls

- Occupational exposure controls** : Ventilation is normally required when handling or using this product. Ensure that eyewash stations and safety showers are close to the workstation location.
- Hygiene measures** : Wash hands after handling compounds and before eating, smoking and using the lavatory and at the end of the day.
- Respiratory protection** : A respirator is not needed under normal and intended conditions of product use.
- 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 rubber.
- Eye protection** : Splash goggles.
- Skin protection** : Lab coat.

9. Physical and chemical properties

- Physical state** : Liquid.
- Color** : Yellow. (Light.)
- Odor** : Slight.
- pH** : 10.8 [Basic.]
- Boiling point** : >100°C
- Melting point** : <0°C
- Specific gravity** : 1.26 (Water = 1)
- Vapor pressure** : 2.4 kPa (18 mm Hg) (at 20°C)
- Vapor density** : 0.6 (Air = 1)
- Flammability** : Non-flammable.
- Solubility** : Easily soluble in cold water.
- VOC** : 201.6 (g/l).

10. Stability and reactivity

- Stability** : The product is stable.
- Conditions to avoid** : Not available.
- Materials to avoid** : Incompatible with strong oxidizing agents. Incompatible with some strong acids.
- Hazardous decomposition products** : These products are carbon oxides (CO, CO₂), sulfur oxides (SO₂, SO₃...).

11. Toxicological information**Potential acute health effects**

- Inhalation** : No known significant effects or critical hazards.
- Ingestion** : No known significant effects or critical hazards.
- Skin contact** : May cause sensitization by skin contact. Skin inflammation is characterized by itching, scaling, reddening or, occasionally, blistering.
- Eye contact** : Irritating to eyes. Inflammation of the eye is characterized by redness, watering and itching.

Acute toxicity

<u>Ingredient name</u>	<u>Test</u>	<u>Result</u>	<u>Route</u>	<u>Species</u>
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KODAK RA 2000 Developer and Replenisher

Diethylene glycol	LD50	12565 mg/kg	Oral	Rat
	LD50	11890 mg/kg	Dermal	Rabbit
Hydroquinone	LD50	320 mg/kg	Oral	Rat
	LD50	900 mg/kg	Dermal	Rabbit
Potassium carbonate	LD50	1870 mg/kg	Oral	Rat
Sodium sulfite	LD50	2610 mg/kg	Oral	Rat

Potential chronic health effects

<u>Ingredient name</u>	<u>Carcinogenic effects</u>	<u>Mutagenic effects</u>	<u>Developmental toxicity</u>	<u>Impairs fertility effects</u>
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Hydroquinone	Carc. Cat. 3; R40	Muta. Cat. 3; R68	-	-
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Carcinogenicity : May cause cancer, based on animal data. Risk of cancer depends on duration and level of exposure.

Mutagenicity : May cause heritable genetic effects, based on animal data.

Reproductive toxicity : No known significant effects or critical hazards.

Over-exposure signs/symptoms

Inhalation : No known significant effects or critical hazards.

Ingestion : No known significant effects or critical hazards.

Skin : May cause sensitization by skin contact. Skin inflammation is characterized by itching, scaling, reddening or, occasionally, blistering.

Other adverse effects : Not available.

Hydroquinone has been classified as a Category 3 mutagen and carcinogen by the European Union based on testing of rats and mice given hydroquinone by stomach tube or at high dietary levels. The International Agency for Research on Cancer (IARC) under ranking for cancer potential has classified hydroquinone in Group 3, i.e. "not classifiable" as a carcinogen. In the European Union a Category 3 mutagen or carcinogen attracts the risk phrase R40 "Limited evidence of a carcinogenic effect." and R68 "Possible risk of irreversible effects" at concentrations above 1%. Exposure to products containing such substances should be controlled to below established control limits and special care should be taken with pregnant or breast-feeding women to ensure appropriate controls are in place to control the risk.

12. Ecological information**Ecotoxicity data**

<u>Ingredient name</u>	<u>Species</u>	<u>Period</u>	<u>Result</u>
Diethylene glycol	Fathead minnow (Pimephales promelas) (LC50)	96 hour/hours	>10000 mg/l
Hydroquinone	Fish (LC50)	96 hour/hours	0.1 mg/l
Sodium sulfite	Algae (IC50)	72 hour/hours	1 mg/l
	Fish (LC50)	96 hour/hours	2600 mg/l
	Daphnia (EC50)	48 hour/hours	69 mg/l

Other ecological information**Persistence/degradability**

<u>Ingredient name</u>	<u>BOD₅</u>	<u>COD</u>	<u>ThOD</u>
Diethylene glycol			1.29 g O ₂ /g
Hydroquinone	1 g O ₂ /g	1.83 g O ₂ /g	1.89 g O ₂ /g
Sodium sulfite			0.127 g O ₂ /g

<u>Ingredient name</u>	<u>Aquatic half-life</u>	<u>Photolysis</u>	<u>Biodegradability</u>
Diethylene glycol			
Hydroquinone			Readily
Sodium sulfite			

Bioaccumulative potential

<u>Ingredient name</u>	<u>LogP_{ow}</u>	<u>BCF</u>	<u>Potential</u>
Diethylene glycol	-2		low
Hydroquinone	0.5		low
Sodium sulfite	-4		low

BOD and COD : BOD = 140 g/l (5 day(s))
COD = 370 g/l

Mobility : Not available.

Other adverse effects : No known significant effects or critical hazards.

13. Disposal considerations

- Methods of disposal** : Waste must be disposed of in accordance with federal, state and local environmental control regulations.
- Waste classification** : This product is listed as Hazardous by the EU Directive on hazardous waste. Dispose of according to all national and local applicable regulations.
- European waste catalogue (EWC)** : 09 01 01* + 15 01 10*

14. Transport information

International transport regulations

Regulatory information	UN number	Proper shipping name	Class	Packing group	Label	Additional information
ADR/RID Class	Not regulated.			-		-
IMDG Class	Not regulated.			-		-
IATA-DGR Class	Not regulated.			-		-

15. Regulatory information

EU Regulations

Hazard symbol/symbols :



Harmful

R-Phrases

- : R40- Limited evidence of a carcinogenic effect.
 R68- Possible risk of irreversible effects.
 R36- Irritating to eyes.
 R43- May cause sensitization by skin contact.

S-Phrases

- : S24- Avoid contact with skin.
 S26- In case of contact with eyes, rinse immediately with plenty of water and seek medical advice.
 S37- Wear suitable gloves.

Contains

- : Hydroquinone

16. Other information

Full text of R-phrases referred to in sections 2 and 3 - United Kingdom (UK)

- : R40- Limited evidence of a carcinogenic effect.
 R68- Possible risk of irreversible effects.
 R22- Harmful if swallowed.
 R48/22- Harmful: danger of serious damage to health by prolonged exposure if swallowed.
 R36- Irritating to eyes.
 R36/37/38- Irritating to eyes, respiratory system and skin.
 R36/38- Irritating to eyes and skin.
 R41- Risk of serious damage to eyes.
 R31- Contact with acids liberates toxic gas.
 R43- May cause sensitization by skin contact.
 R50- Very toxic to aquatic organisms.

Full text of classifications referred to in sections 2 and 3 - United Kingdom (UK)

- : Carc. Cat.3 - Carcinogen Category 3
 Muta. Cat.3 - Mutagen Category 3
 Xn - Harmful
 Xi - Irritant
 N - Dangerous for the environment.

Revision comments

- : Section : 7; 8; 16

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: 2006-02-02.

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Notice to reader

To the best of our knowledge, the information contained herein is accurate. However, neither the above named supplier nor any of its subsidiaries assumes any liability whatsoever for the accuracy or completeness of the information contained herein.

Final determination of suitability of any material is the sole responsibility of the user. All materials may present unknown hazards and should be used with caution. Although certain hazards are described herein, we cannot guarantee that these are the only hazards that exist.

Version 4.2

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