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1 Commercial product name and supplier

1.1 Commercial product name / designation **RD20 DEVELOPER 4 X 7 I**

1.2 Application / use Photographic B&W Developer

1.3 Producer

1.4 Supplier

1.5 TOX emergency number

1.6 BAG T No. (CH)

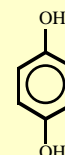
1.7 Product No. 954073

2 Composition

2.1 Chemical characterisation Aqueous solution containing organic and inorganic salts.

Active ingredient:

CAS No.: 123-31-9
hydroquinone



2.2 Components

CAS Nr. : 10117-38-1
EINECS: 233-321-1

tributylamine

CAS Nr. : 123-31-9
EINECS: 204-617-8

5 - 10 % 1,4-dihydroxybenzene (hydroquinone) ; quinol

Xn: Harmful. N: Dangerous for the environment. Limited evidence of a carcinogenic effect. May cause sensitisation by skin contact. Possible risk of irreversible effects.

R22: Harmful if swallowed. R40: Risk of serious damage to eyes. R43: May cause allergic skin reactions. R68: May be toxic to aquatic organisms.

CAS Nr. : 7757-83-7
EINECS: 231-821-4

5 - 10 % sodium sulfite

N/Ap

CAS Nr. :
EINECS:

CAS Nr. : 111-46-6
EINECS: 203-872-2

1 - 5 % 2,2'-oxybisethanol
diethylene glycol

Xn: Harmful. R22: Harmful if swallowed.

CAS Nr. : 584-08-7
EINECS: 209-529-3

1 - 5 % potassium carbonate

Xi: Irritant. R36/38: Irritating to eyes and skin.

2.3 Further information None.

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3 Hazards identification Irritating to eyes. Limited evidence of a carcinogenic effect. May cause sensitisation by skin contact. Possible risk of irreversible effects.

4 First aid measures

4.1 Eye contact Irrigate with flowing water immediately and continuously for 15 minutes. Consult medical personnel.

4.2 Skin contact Immediately flush with plenty of water for at least 15 minutes while removing contaminated clothing.

4.3 Ingestion Consult a physician.

4.4 Inhalation Remove to fresh air. Consult a physician.

4.5 Further information Overexposure may lead to allergic skin reactions with sensitized people. In this case, seek medical advice.

5 Fire-fighting measures

5.1 Suitable extinguishing media Water.
Water fog, carbon dioxide, foam, dry chemicals.

5.2 Extinguishing media to avoid None under normal conditions.

5.3 Further information

6 Accidental release measures

Wear adequate personal protective equipment, see Section 8 (Exposure Controls/Personal Protection)
 Prevent from entering into soil, waterways and groundwater.
 Spills should be contained by, and covered with suitable absorbent material and removed for disposal.
 Dispose of according to local and national regulations.

7 Handling and storage

7.1 Handling Avoid eye and skin contact.
Wash hands and exposed skin before eating, drinking or smoking and after work.
Use only in well ventilated area.

7.2 Industrial hygiene Avoid eye and skin contact.
Wear suitable protective clothing, gloves and eye/face protection.
Follow normal industrial hygiene standards.

7.3 Storage Do not consume or store food in the work area.
Keep containers tightly closed.
Store in a well ventilated, cool, dry area.

7.4 Fire- and explosion protection Not combustible.

8 Exposure controls / personal protection

8.1	Technical equipment	Good general ventilation should be sufficient for most processing operations. Vent work area to ensure airborne concentrations are below the current occupational exposure limits. 10 or more room air changes per hour containing a minimum of 15% fresh air, will meet these requirements.
8.2	Control of threshold limits	None established.
8.3 Personal protective equipment		
8.3.1	Respiratory protection	No respiratory protection needed under normal conditions. Good general ventilation should be sufficient.
8.3.2	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.
8.3.3	Eye protection	Use chemical safety goggles. Eye wash fountain should be located in immediate work area.
8.3.4	Other	Appropriate protective clothing.

9 Physical and chemical properties

9.1	Appearance	liquid
9.2	Color	colourless
9.3	Odour	practically odourless
9.4	Change in physical state	
	Melting point	N/Av °C
	Boiling point	N/Av °C
9.5	Density	1.256 g/cm ³ (20 °C)
9.6	Vapour pressure	----- mm Hg (21 °C)
9.7	Viscosity	----- cP
9.8	Solubility in water	----- g/l (20 °C)
		completely soluble
9.9	pH-value	(25 °C) alkaline
9.10	Flash point	----- °C
9.11	Ignition temperature	----- °C
9.12	Explosion limits	Lower: ----- vol.% Upper: ----- vol.%
	remark(s)	None.
9.13	Further information	None.

10 Stability and reactivity

10.1	Thermal decomposition	Is stable under normal storage conditions.
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10.2 Hazardous decomposition products
 In case of thermal decomposition poisonous and irritant gases/fumes can be released.
 Hazardous Decomposition Products:
 CO₂, SO₂

10.3 Hazardous reactions
 With strong acids.
 With strong oxidisers.

10.4 Further information
 None.

11 Toxicological information

Product Information:

LD50, oral: > 5000 mg/kg Test Animal: Rats

LD50, dermal: N/Av Test Animal: N/Av

11.1 Acute Overexposure:
 Primary Skin Irritation Index: N/Av N/Av

Primary Eye Irritation Index: N/Av N/Av

11.2 Further information
 Li carcinogenic effect. May cause risk of irreversible effects.

Ingredients information

CAS No.	Component	LD50 (mg/kg)	Test Animal:
10117-38-1	potassium sulfite	N/Av	
123-31-9	1,4-dihydroxybenzene ; hydroquinone ; quinol	320	Rats
7757-83-7	sodium sulfite	820	Mice
20786-60-1	potassium borate	N/Av	
	2,2'-oxybisethanol	12565	Rats
	diethylene glycol		
	potassium carbonate	> 2000	Rats

Further information
 None.

12 Ecological information

Ecotox Data: N/Av

Chemical Fate Data:

Ingredients information

CAS No.	Component	Fish Toxicity	Fish Organism
10117-38-1	potassium sulfite	LC50 130 mg/L	Not identified
	1,4-dihydroxybenzene ; hydroquinone ; quinol	LC50 0.15 - 0.16 mg/L	Golden orfe
	sodium sulfite	LC50 N/Av	
	potassium borate		
	2,2'-oxybisethanol		Golden orfe
	diethylene glycol		
	potassium carbonate		

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13	Disposal considerations	Dispose of according to local and national regulations. Containers must be disposed of in accordance with local regulations.	
13.1	EC-Waste Code	090101	
13.2	Origin	Photographic Industry	
14	Transport information		
14.1	Road transport		
	UN-Number	----	
	Name and description (PSN)		
	GGVSE class	Classification code	----
	RID / ADR class	Classification code	----
	Packing group	Labels	----
	Special provisions	Limited quantities	----
	Packing instructions	Special pack. prov.	----
		Mixed pack. prov.	
	Tremcard		
	Further information		nd (road,
14.2	Marine transport		
	UN-Number	----	
	Proper Shipping Name (PSN)		
	Class or division	GGVSee: ----	ADNR: ----
	Subsidiary risk(s)	Packing group	----
	Special provisions	Limited quantities	----
	Packing instructions	Packing provisions	----
	IBC instructions	IBC provisions	----
	EmS	MFAG	----
	Marine pollutant		
	Further information		ea.
14.3	Air transport		
	ICAO / IATA-GDR	----	
	UN-No.	----	
	PSN	----	
	Subsidiary risk	----	
	Labels	----	
	Packing group		
	Passenger aircraft		
	Cargo aircraft only		
	Further information	Material not classified for air transport.	

15 **Regulatory information** This product requires classification according to the criteria of the EC.

15.1	UN-No.	-----
15.2	Swiss toxicity class	-----
15.3	EC-No.	-----
15.4	Hazard symbols	Xn
15.5	Hazard designation	Xn: Harmful. Contains hydroquinone.
15.6	Risk phrases	R: 36-40-43-68 Irritating to eyes. Limited evidence of a carcinogenic effect. 68 Possible risk of irreversible effects.
15.7	Safety phrases	S: 26-36/37/39 In case of contact with eyes, rinse immediately with plenty of water and seek medical advise. Wear suitable protective clothing, gloves and eye/face protection.
15.8	TLV / MAK/...	SO2: MAK 0.5 ppm, 1.3 mg/m3, TLV 2 ppm
15.9	BVD classification	-----
15.10	VbF	-----
15.11	Further information	None.

16 **Other information** The use of the preparation is restricted to professional users!

16.1	Safety Data Sheet new / changed in section:	15.8 (TLV/MAK): Values updated
16.2	R-phrases mentioned in point 2.2 (components):	see section 2 of the Safety Data Sheet

The above mentioned data correspond to our present state of knowledge and experience. The safety data sheet serves as description of the products in regard to necessary safety measures. The indications have not the meaning of guarantees on properties.

N/Av = Not available N/Ap = Not applicable