Material Safety Data Sheet

According to Regulation No 1907/2006/EC – REACH, No. 2015/830 and No 1272/2008/EC - CLP

Date of revision : 01/28/2019 Version No: 3.3

Replaced version 3.2

SECTION 1	Identification of the substance/mixture and of the company/undertaking	
1.1	Product identifier	**PHOTOGRAPHIC EMULSION**
	Other name or labelling of product:	**RBM23, RBM25, RBM28**
1.2	Relevant identified uses of the substance or mixture and uses advised against	
	The photographic for universal using, the emulsion can be spread on the most different bases	
1.3	Details of the supplier of the safety data sheet	
	Supplier : Downstream User (Producer Mixture)	**Hans O. Mahn GmbH & Co. KG | MACO PHOTO PRODUCTS** **Brookstieg 4 | 22145 Stapelfeld | Germany** **Phone: +49(0)40 23 7008 80**
	Address electronic mail and telephone number	**info@maco-photo.de** **+49 40 237 008-88**
1.4	Emergency telephone number	EU Poison Information Centres – see section 16

SECTION 2	Hazards identification
2.1	**Classification (according to Regulation No 1272/2008 – CLP)**
	Aquatic Acute1;H400 Aquatic Chronic1;H410
	The most important adverse physicochemical, human health and environmental effects: Very toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment

2.2	Label elements (according to Regulation No 1272/2008/EC– CLP)	
hazard pictogram		
signal word		Warning
hazard statement(s) (H-, phrases)	H410	Very toxic to aquatic life with long lasting effects.

precautionary statement (P- phrases)	P273 P501	Avoid release to the environment Dispose of contents/container to collecting place for dangerous waste in accordance with national regulations.

2.3	Other hazards
	The substance does not belong to the category of PBT, vPvB

SECTION 3	Composition/information on ingredients
3.2	Mixtures

Folder name	Registration number	Index number	CAS number	ES number	Content % in the solution	Classification
Silver chloride	Not available	Not available	7783-90-6	232-033-3	< 5	Met.Corr1;H290 Aquatic Acute1;H400 Aquatic Chronic1;H410 M=1000, M(chronic)=100
Silver bromide	Not available	Not available	7785-23-1	232-076-8	< 5	Aquatic Acute1;H400 Aquatic Chronic1;H410 M=1000, M(chronic)=100

Emulsion

(Full text H-phrases… section 16)

SECTION 4	First aid measures
4.1	Description of first aid measures
	Consult a physician. Show this safety data sheet to doctor in attendance.
	After contact with skin: Wash off with soap and plenty water.
	Eye Contact: Flush eyes with water as a precaution.
	Exposure by inhalation: Remove patient to fresh air, rinse eyes, mouth and nasal cavity with lukewarm water.
	Ingestion: Calm affected person, rinse his mouth with clean water. Force the affected person to drink a glass of cold water (about 0,4 dl). Do not induce vomiting. If affected person vomit spontaneously, control to prevent inhalation of vomit. Do not administer either activated charcoal or neutralizing agent. Call a physician or transport the affected person to a doctor.
4.2	Most important symptoms and effects, both acute and delayed
	Not known
4.3	Indication of any immediate medical attention and special treatment needed
	In the workplace, running water and soap.

SECTION 5	Firefighting measures
5.1	Extinguishing media

	The product (liquid) is not flammable. Extinguishing agents must be adapted to burning substances in surrounding.
	Inappropriate extinguishing media: N.a.
5.2	Special hazards arising from the substance or mixture
	Hydrogen chloride gas, hydrogen bromide gas, silver/ silver oxides
5.3	Advice for firefighters: Breathing apparatus, workwear

SECTION 6	Accidental release measures
6.1	Personal precautions, protective equipment and emergency procedures
	Take persons not participating in removing the consequences of the accident out of reach. Ventilate enclosed spaces. Use the prescribed personal protective equipment when removing the consequences of the accident. Use breathing apparatus and complete protective suit when working on the disposal of the accident. Smoking and manipulation with open fire is prohibited. For personal protection see section 8.
6.2	Environmental precautions
	Do not allow substance to enter soil, sewage system, surface and groundwater.
6.3	Methods and material for containment and cleaning up
	Let soak it to inert absorption products. Keep in suitable, closed containers for disposal.
6.4	Reference to other sections
	See section 13

SECTION 7	Handling and storage
7.1	Precautions for safe handling
	Follow the safety rules while working. Wear recommended personal protective equipment. Avoid contact with eyes. Eating, drinking, smoking, working with burning materials and open fire is prohibited while working. Equipment must contain fire extinguishers in enclosed areas, ventilation must be ensured naturally or mechanically in enclosed spaces. Workplaces must be kept clean and escape routes must remain free.
7.2	Conditions for safe storage, including any incompatibilities
	Store in original containers in a cool, dry and well ventilated place. Light sensitive- Storage temperature 4-10 °C. Containers should be stored separately from food. The working solution prepare according to the instructions.
7.3	Specific end use(s)
	See in 1.2. , Other uses – not available

SECTION 8	Exposure controls/personal protection
8.1	Control parameters

International limit values for chemical agents (Occupational exposure limits, OELs):

EU limit values (Commision Directive 2006/15/EC)
Indicative Occupational Exposure Limit Values and Limit Values for Occupational Exposure Binding Occupational Exposure Limit Value-BOELV:
Silver – as Ag (CAS: 7440-22-4): Limit value, eight hours = 0,01 mg/m^3

Silver bromide, Silver bromide (Silver compounds CAS 7440-22-4– as Ag)
International limit values for chemical agents (Occupational exposure limits, OELs)

	Limit value - Eight hours		Limit value - Short term	
	ppm	mg/m³	ppm	mg/m³
Austria		0,01 inhalable aerosol		0,1 inhalable aerosol
Belgium		0,01		
Canada - Ontario		0,1 (1)		
Denmark		0,01		0,02
Germany (AGS)		0,01 inhalable aerosol		0,02 inhalable aerosol (1)
Germany (DFG)		0,01 inhalable aerosol		0,02 inhalable aerosol
Japan - JSOH		0,01		
Latvia		0,1		
New Zealand		0,01		
Poland		0,05		
Spain		0,01		
Switzerland		0,01 inhalable aerosol		0,02 inhalable aerosol
USA - OSHA		0,01		

	Remarks
Canada - Ontario	(1) Dust and fume
Germany (AGS)	(1) 15 minutes average value
Germany (DFG)	STV 15 minutes aqverage value
Poland	Insoluble compounds

Laying down limit values of biological exposure tests: not available

Silver bromide, Silver chloride
DNELs -Not available
PNECs*

Environmental protection target	PNEC
Fresh water	40 ng/L
Marine water	860 ng/L
Microorganisms in sewage treatment	25 µg/L
Freshwater sediments	438.13 mg/kg sediment dw
Marine sediments	438.13 mg/kg sediment dw
Soil (agricultural)	794 µg/kg sediment dw

*source : substance Brief Profile: *http://echa.europa.eu/*

8.2 Exposure controls

Individual protection measures, incl. protective equipment

Technical measures: Working place must be equipped with a local suction and a source of running water if the eyes irrigation and washing of hands or affected parts of skin is needed. Tightly closed containers and equipment, natural and mechanical ventilation. Avoid contact with eyes and mouth, avoid inhalation and skin staining. Eating, drinking and smoking is prohibited while working. Avoid contact with food substances and drinks. After work wash hands with soap and water. Take off polluted clothes if needed.

Respiratory protection: During normal handling is not required.

Hand protection: During normal handling is not required.

Eye protection: Safety glasses

	Skin protection: Workwear
	Environmental exposure: Secure the spaces against the leakage into watercourses, soil and sewage system.

SECTION 9	Physical and chemical properties	
9.1	Information on basic physical and chemical properties	
	Appearance	Grey emulsion
	Odour	no
	pH	6,7-7,3
	Melting point/freezing point	Not available
	Initial boiling point and boiling range	Not available
	Flash point	Fireproof
	Evaporation rate	Not available
	Flammability	Incombustible
	Upper/lower flammability or explosive limits	Irrelevant
	Vapour pressure	Not available
	Vapour density	Not available
	Oxidising properties	Not available
	Relative density	Not available
	Solubility – water	Not available
	Partition coefficient: n-octanol/water	Not available
	Auto-ignition temperature	Irrelevant
	Decomposition temperature	Not available
	Viscosity;	Not available.
	Explosive properties	No
9.2	Other information	
	Fat solubility	No
	Conductivity	Not available

SECTION 10	Stability and reactivity
10.1	Reactivity
	Under normal conditions the product is stable
10.2	Chemical stability
	Under normal conditions the product is stable
10.3	Possibility of hazardous reactions

	Not available
10.4	Conditions to avoid
	Light, intensive heating.
10.5	Incompatible materials
	Strong oxidation agents
10.6	Hazardous Decomposition Products
	In the event of fire: see section 5

SECTION 11	Toxicological information

11.1	Information on toxicological effects
Acute toxicity	Based on available data, the criteria for this classification are not match up
Skin corrosion/irritation	Based on available data, the criteria for this classification are not match up
Serious eye damage/eye irritation	Based on available data, the criteria for this classification are not match up
Respiratory or skin sensitisation	Based on available data, the criteria for this classification are not match up
Germ cell mutagenicity	Based on available data, the criteria for this classification are not match up
Carcinogenicity	Based on available data, the criteria for this classification are not match up
Reproductive toxicity	Based on available data, the criteria for this classification are not match up
Specific target organ toxicity — single exposure	Based on available data, the criteria for this classification are not match up
Specific target organ toxicity — repeated exposure	Based on available data, the criteria for this classification are not match up **Silver bromide** *Repeated exposure : NOAEL/ oral/rat: 30 mg/kg bw/day *source : substance Brief Profile: *http://echa.europa.eu/*
Aspiration hazard	Based on available data, the criteria for this classification are not match up

Likely routes of exposure and symptoms related to the physical, chemical and toxicological characteristics:

Toxicity oral. (ingestion / swallowing):

The product is not dangerous.

Toxicity inhal. (inhalation):

The product is not dangerous.

Toxicity dermal.

The product is not dangerous.

Eye Contact:

May cause moderate irritation

Immediate, delayed and chronic effects of short and long term exposure:
Not available

SECTION 12	Ecological information

12.1	Toxicity
	Mixture is very toxic to aquatic life with long lasting effects **Silver chloride*, silver bromide*** LC50/fish/96 hr: 1.2µg Ag/L LC50/invertebrates/48 hr.: 0.22µg Ag /L EC10/invertebrates/21 d: 1.68-2.4µg Ag/L (NOEC/ 21d: 2.6µg Ag/L) EC10/algae/24hr: 0.41-0.54µg Ag/L (NOEC/14 d: 1.2 µg Ag/L) *source : substance Brief Profile: *http://echa.europa.eu/*
12.2	Persistence and degradability
	Inorganic substances , irrelevant.
12.3	Bioaccumulative potential
	Not available
12.4	Mobility in soil
	Not available
12.5	Results of PBT and vPvB assessment
	Not available. Substance is not identified as a PBT or vPvB
12.6	Other adverse effects
	Very toxic to aquatic life with long lasting effects.

SECTION 13	Disposal considerations	
13.1	Waste treatment methods	
	Code and type of waste	20 01 17*- Photochemicals 15 01 10 * - packaging containing residues of hazardous substances
	The recommended method of disposal of the substance/ preparation:	Spilled product let absorb in inert absorbent material and pass it on to a person who is in charge of its removal. The product cannot be removed together with local or other waste. Do not wash away into sewers.
	The recommended method of disposal of contaminated product packaging:	Emptied containers (after thorough flushing) can be reused, or put away into a container, designated for separate collection (plastics).
	Waste legislation	Directive No. 2008/98/ES

SECTION 14	Transport information

14.1	UN number	3082
14.2	UN proper shipping name	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID,N.O.S. (SILVER CHLORIDE, SILVER BROMIDE EMULSION)
14.3	Transport hazard class(es)	9
14.4	Packing group	III

	Labels	9 
14.5	Environmental hazard	Product contains environmentally hazardous substances: (Silver chloride, Silver bromide). Mixture is environmentally hazardous according to the criteria of the UN Model Regulations- see to section 12
	Marine pollutant	Yes
14.6	Special precautions for user	See to section 8- Avoid release to the environment
14.7	Transport in bulk according to Annex II of Marpol and the IBC Code	Not expected
Special provisions, remarks:		**ADR:** The product is carried in single or combination packaging containing a net quantity per single or inner packaging of 5 litres or less and is not subject to any other provisions of ADR provided packaging meet the general provisions of 4.1.1.1., 4.1.1.2 and 4.1.1.4 to 4.1.1.8 (according to chapter 3.3 ADR, special provisions 375) **IMDG**: The product is packaged in single or combination packaging containing a net quantity per single or inner packaging of 5 litres or less and is not subject to any other provisions of IMDG Code relevant to marine pollutants provided the packaging meet the general provisions of 4.1.1.1, 4.1.1.2 and 4.1.1.4 to 4.1.1.8. (according to Chapter 2.10, paragraphs 2.10.2.7 and 2.10.2.3) **ICAO/IATA**: The product is transported in single or combination packaging containing a net quantity per single or inner packaging of 5 litres or less and is not subject to any other provisions of the IATA Dangerous Goods Regulations provided the packaging used defined standards. (according to part 4.4 , Special provisions A197)

SECTION 15	Regulatory information
15.1	Safety, health and environmental regulations/legislation specific for the substance or mixture
	Regulation (EC) No 1907/2006, registration, evaluation, authorisation, restriction chemicals (REACH) Regulation (EC) No 2015/830**,** Commission Regulation (EU) 2015/830 of 28 May 2015 amending Regulation (EC) No 1907/2006 Regulation (EC) No 1272/2008 of the European Parliament and of the Council on classification, labelling and packaging of substances and mixtures Commission Decision 2014/955/EU amending Decision 2000/532/EC on the list of waste pursuant to Directive 2008/98/EC of the European Parliament and of the Council European Agreement concerning the international carriage of dangerous goods (ADR) International Maritime Dangerous Goods Code (IMDG Code) IATA Dangerous Goods Regulations (DGR)
15.2	Chemical safety assessment
	The chemical safety assessment for the product was not made.

SECTION 16	Other information
Abbreviations, symbols	

Met.Corr.1	Corrosive to metals, Category 1
Aquatic Acute1	Hazardous to the aquatic environment – Acute Hazard, Category 1
Aquatic Chronic1	Hazardous to the aquatic environment – Chronic Hazard, Category 1

CLP : Regulation (EC) č.1272/2008
REACH: Registration, Evaluation, Authorisation and Restriction of Chemicals
SVHC: Substance of very high concerns
PBT: Persistent, bioaccumulative and toxic
vPvB **:**(very) Persistent, (very) Bioaccumulative
RID: Regulations Concerning the International Transport of Dangerous Goods by Rail
ICAO: International Civil Aviation Organisation
ADR: European Agreement concerning the International Carriage of Dangerous Goods by Road
IMDG: International Maritime Code for Dangerous Goods
IATA: International Air Transport Association
EINECS: European Inventory of Existing Commercial Chemical Substances
CAS: Chemical Abstracts Service (division of the American Chemical Society)
DNEL: Derived No-Effect Level
PNEC: Predicted No-Effect Concentration
LC50: Lethal concentration, 50 percent
LD50: Lethal dose, 50 percent
EC50: Median Effective Concentration
LOAEL: Lowest observed adverse effect level
NOAEL: No Observed Adverse Effect Level
NOEC: No Observed Effect Concentration
M: multiplier factor
N.a.: not available
Bw: body weight

Materials used for the processing of safety data sheet

Material Safety Data Sheets (MSDS) for chemical substances on google.cz, GESTIS database (www.gduv.de), European Chemicals Agency http://echa.europa.eu/ (Brief Profile, List K&O; registration dossier)

Classification (according to Regulation No 1272/2008 – CLP): calculation method

H-phrases **:**

H290	May be corrosive to metals.
H400	Very toxic to aquatic life.
H410	Very toxic to aquatic life with long lasting effects.

Guidance regarding the training of workers:

Workers coming into contact with hazardous chemicals or products must have access to data which are presented in this MSDS and be familiar with them clearly.
Person transporting hazardous chemicals and preparations must be familiar with guidelines for emergency response in accordance with regulations on hazardous goods within the meaning of ADR / RID, IMDG, IATA.
The information contained in this MSDS are currently valid data and best practices for use and handling of this substance under normal conditions. Any other use or handling of this mixture which is not consistent with those of MSDS excludes the responsibility for defects, more precisely for damage for which the producer, importer or retailer would be otherwise responsible.

EU Poison Information Centres

Country	Poison Centre	Tel number 24hour every day/ other time
Austria	Poison Information Center/Vergiftungsinformationszentrale	+ 43 1 406 43 43
Belgium	Cente Antipoisons-Antigifcentrum center	+32 70 245 245
Bulgaria	National Toxicology Information center- Hospital for Active Medical Treatment and Emergency Medicine 'N.I.Pirigov', Sofia	+359 2 9154 409

Country	Poison Centre	Tel number 24hour every day/ other time
Croatia	Poison Information Center/ Centar za kontrolu otrovanja	+385 1 2348 342
Denmark	Poison Center Hotline	+45 82 12 12 12
Estonia	Poisoning centre Hotline Mürgistusinfo	+372 16662
Finland	Poison Information Centre	+358 9 471977
France	Centre Antipoison et de Toxicovigilance de Paris	+33 1 40 05 48 48
Germany	Poison Information Centre in Berlin	+49 30 192 40
Greece	Poison Information Centre	+30 2107793777
Iceland	Poisons Information Center (Eitrunarmiðstöð)	+354 543 2222
Ireland	National Poisons Information Centre	+353 1 809 2566
Hungary	Poison Information Service (National Institute for chemical safety) Információszolgáltatás akut mérgezés eseén)	+36 80 201 199
Italy	Poisons Center CAV-Centro Antiveleni Roma	+39 06 68593726, +39 06 3054343, +39 06 49978000
Latvia	Toksikoloģijas un sepses klīnikas Saindēšanās un zāļu informācijas centrs	+371 67042473
Lithuania	Poison Information Bureau -PIB	+370 8-5 236 20 52
Luxembourg	Belgian Poison Center	+352 8002 5500
Netherlands	National Poisons Information Center (nationaal vergiftigingen Informatie centrum,NVIC)	+031 (0) 30 274 8888
Norway	Poison center (Giftinformasjonen)	+47 22 59 13 00
Poland	National Poisons Information Centre Lodz	+48 42 63 14 724
Portugal	Centro de Informação Antivenenos	+351 808 250 143
Romania	National iIstitute for Public Health (Centrum National de Informare Toxicologica)	+40 21 318 36 06
Slovakia	National Toxicological Information Centre (Národné toxikologické informačné centrum	+421 2 54 774 166
Spain	Toxicological Information Service (Servicio de Información toxicologica)	+34 91 562 04 20
Sweden	Giftinformationscentralen (Swedish poisons Information Centre)	112/ mon-fri 9.00-17.00 +46 10 456 6700
Switzerland	The Swiss Toxicological Information Centre (STIC)	145
United Kingdom	National Poisons Information Service -NPIS(Birmingham)	England, Wales, Scotland 111
Turkey	Toxicolog Department and Poisons Centre	+ 90 0312 433 7001,+90 0800 314 7900

Revised safety data sheet:

Version 3.3: changed sections 1.4,2.2, 8.1, 11.1, 12.1, 16 (added contact information- EU Poison Information Centres)