

B&W FILM / PAPER FIXER

FIX AG

Art.No.**APX12** | 125ml | EAN 4 260163 981240Art.No.**APX11** | 1.000ml | EAN 4 260163 981066Art.No.**APX35** | 5.000ml | EAN 4 260163 981325

Highly concentrated, liquid ammonium thiosulfate-based fixing agent with optimum composition in terms of fixing speed, yield and shelf life. Depending on the dilution, FIX Ag can be used as a normal or rapid fixer.

Preparation**Mixing instructions**

The concentrate is diluted with water (at approx. 30 °C) at a ratio of 1 + 7 or 1 + 5. The fixer is ready for use after thorough stirring.

Standard fixer: 1 part concentrate + 7 parts water

Rapid fixer: 1 part concentrate + 5 parts water

Developing Time | Mixing:

DILUTION VERDÜNNUNG	RC-PAPER PE-PAPIER	CAPACITY ERGIEBIGKEIT
	20°C 35°C	m2
1+5	30-60 sec.	2,6
1+7	60-90 sec.	2,6

DILUTION VERDÜNNUNG	FIBER BASE PAPER BARYT PAPIER	CAPACITY ERGIEBIGKEIT
	20°C 35°C	m2
1+5	1-3 min.	1,5
1+7	3-5 min.	1,5

DILUTION VERDÜNNUNG	FILMS FILME	CAPACITY ERGIEBIGKEIT
	20°C 35°C	Litre • Liter • Litro
1+4	3-5 min.	15-30
1+7	6-8 min.	15-30

Safety data sheet according to 1907/2006/EC, Article 31

Printing date 09.02.2024

Version 9.0 (replaces version 8.1)

Revision: 09.02.2024

SECTION 1: Identification of the substance/mixture and of the company/undertaking

· 1.1 Product identifier

· Trade name: **FixAg**

· Article number: APX12 APX35

· 1.2 Relevant identified uses of the substance or mixture and uses advised against
No further relevant information available.

· Application of the substance / the mixture

Photo chemicals
Photographic fixer
Reserved for industrial and professional use.

· 1.3 Details of the supplier of the safety data sheet

· Manufacturer/Supplier:

Hans O. Mahn GmbH & Co KG
Brookstieg 4
22145 Stapelfeld
Deutschland
+49 (0)40 23 70 08 88
info@maco-photo.de
www.maco-photo.de

Informing department:

+49 (0)40 23 70 08 88
info@maco-photo.de

1.4 Emergency telephone number:

Tel.: +49 (0) 700-24112112 (CAL)
Tel.: +1 872 5888271(CAL)

SECTION 2: Hazards identification

· 2.1 Classification of the substance or mixture

· Classification according to Regulation (EC) No 1272/2008

The product is not classified, according to the CLP regulation.

· 2.2 Label elements

· Labelling according to Regulation (EC) No 1272/2008 Void

· Hazard pictograms Void

· Signal word Void

· Hazard-determining components of labelling:

boric acid

· Hazard statements Void

· Additional information:

EUH031 Contact with acids liberates toxic gas.

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Restricted to professional users.

2.3 Other hazards

No special hazards known if the regulations/instructions for storage and handling are observed. Where applicable, this section provides information on other hazards that do not result in classification but may contribute to the overall hazards of the substance or mixture.

The product does not contain any substance above legal limits that fulfils the criteria for PBT (persistent, bioaccumulative and toxic) or vPvB (very persistent and very bioaccumulative). The product does not contain any substance above the legal limits that has been included in the list drawn up in accordance with Article 59(1) of Regulation (EC) No 1907/2006 due to endocrine disrupting properties or that has endocrine disrupting or endocrine disrupting properties in accordance with Commission Delegated Regulation (EU) 2017/2100 or Commission Regulation (EU) 2018/605.

Results of PBT and vPvB assessment

• **PBT:** Not applicable.

• **vPvB:** Not applicable.

SECTION 3: Composition/information on ingredients

3.2 Mixtures

• **Description:** Mixture of the substances listed below with harmless additions.

Dangerous components:

CAS: 64-19-7 EINECS: 200-580-7	acetic acid ----- ⚠ Flam. Liq. 3, H226 ⚠ Skin Corr. 1A, H314 ⚠ Acute Tox. 4, H312 Specific concentration limits: Skin Corr. 1A; H314: C ≥ 90 % Skin Corr. 1B; H314: 25 % ≤ C < 90 % Skin Irrit. 2; H315: 10 % ≤ C < 25 % Eye Irrit. 2; H319: 10 % ≤ C < 25 %	≥ 5 - < 10%
CAS: 10043-35-3 EINECS: 233-139-2	boric acid ----- ⚠ Repr. 1B, H360FD	≥ 0.3 - < 0.5%
CAS: 62-56-6 EINECS: 200-543-5	thiourea ----- ⚠ Carc. 2, H351; Repr. 2, H361d ⚠ Aquatic Chronic 2, H411 ⚠ Acute Tox. 4, H302	< 0.25%

SVHC

10043-35-3	boric acid	≥ 0.3 - < 0.5%
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· **Additional information** For the wording of the listed hazard phrases refer to section 16.

SECTION 4: First aid measures

· **4.1 Description of first aid measures**

· **General information**

Instantly remove any clothing soiled by the product.
Personal protection for the First Aider.

· **After skin contact** The product is not skin irritating.

· **After eye contact**

Rinse opened eye for several minutes under running water (> 15 min). Then consult doctor.

Rinse opened eye for several minutes under running water (at least 15 minutes).

Remove contact lenses, if present and easy to do.

Protect uninjured eye.

Call a doctor immediately.

· **After swallowing** Rinse out mouth and then drink plenty of water.

· **4.2 Most important symptoms and effects, both acute and delayed**

No known symptoms to date.

· **4.3 Indication of any immediate medical attention and special treatment needed**

Basic relief, decontamination, symptomatic treatment.

SECTION 5: Firefighting measures

· **5.1 Extinguishing media**

· **Suitable extinguishing agents**

CO₂, extinguishing powder or water jet. Fight larger fires with water spray jet or alcohol-resistant foam.

Use fire fighting measures that suit the environment.

· **For safety reasons unsuitable extinguishing agents** Water with a full water jet.

· **5.2 Special hazards arising from the substance or mixture**

Can be released in case of fire

sulphur dioxide (SO₂)

Nitrogen oxides (NO_x)

· **5.3 Advice for firefighters**

· **Protective equipment:**

At formation of toxic gases:

Put on breathing apparatus.

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Do not inhale explosion gases or combustion gases.

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SECTION 6: Accidental release measures

- **6.1 Personal precautions, protective equipment and emergency procedures**
Put on breathing apparatus.
- **6.2 Environmental precautions:**
Do not allow to enter drainage system, surface or ground water.
- **6.3 Methods and material for containment and cleaning up:**
Absorb with liquid-binding material (sand, diatomite, acid binders, universal binders, sawdust).
- **6.4 Reference to other sections**
See Section 7 for information on safe handling
See Section 8 for information on personal protection equipment.
See Section 13 for information on disposal.

SECTION 7: Handling and storage

- **7.1 Precautions for safe handling** No special precautions necessary if used correctly.
- **Information about protection against explosions and fires:**
The product is not flammable
- **7.2 Conditions for safe storage, including any incompatibilities**
- **Storage**
- **Requirements to be met by storerooms and containers:** No special requirements.
- **Information about storage in one common storage facility:**
Do not store together with acids.
Keep away from foodstuffs, beverages and food.
- **Further information about storage conditions:** Store in a cool place.
- **Recommended storage temperature:** 5-25 °C
- **Storage class**
(German Technical Rule for Hazardous Substance – TRGS 510)
12
- **7.3 Specific end use(s)** No further relevant information available.

SECTION 8: Exposure controls/personal protection

- **8.1 Control parameters**
- **Components with limit values that require monitoring at the workplace:**
The product does not contain any relevant quantities of materials with critical values that have to be monitored at the workplace.

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64-19-7 acetic acid

OEL (Ireland)	Short-term value: 50 mg/m ³ , 20 ppm Long-term value: 25 mg/m ³ , 10 ppm IOELV
IOELV (European Union)	Short-term value: 50 mg/m ³ , 20 ppm Long-term value: 25 mg/m ³ , 10 ppm

10043-35-3 boric acid

OEL (Ireland)	Long-term value: 2 mg/m ³ Repr. 1B
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· Additional information:

The lists that were valid during the compilation were used as basis.

· 8.2 Exposure controls

· **Appropriate engineering controls** No further data; see section 7.

· **Individual protection measures, such as personal protective equipment**

· **General protective and hygienic measures**

The usual precautionary measures should be adhered to general rules for handling chemicals.

Keep away from foodstuffs, beverages and food.

Take off immediately all contaminated clothing.

Wash hands during breaks and at the end of the work.

Avoid contact with the eyes.

Avoid contact with the eyes and skin.

Do not eat, drink or smoke while working.

· **Breathing equipment:** Not required.

· **Hand protection**

Protective gloves.

The protective gloves to be used must comply with the specifications of the (EU) 2016/425 and the resultant standard EN 374.

This recommendation applies only to the product stated in the Safety Data Sheet and supplied by us as well as to the purpose specified by us.

Only use chemical-protective gloves with CE-labelling of category III.

Selection of the glove material on consideration of the penetration times, rates of diffusion and the degradation

· **Material of gloves**

Thickness	Breakthrough time	
	(mm)	(min)
Nitril rubber	0,38	> 480
Neoprene	0,65	> 240
Butyl rubber	0,36	> 480
Avoid natural rubber gloves.		

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· **As protection from splashes gloves made of the following materials are suitable:**

Synthetic gloves

Value for the permeation: Level:

 ≥ 3 (60 min)

· **Eye/face protection** Safety glasses

SECTION 9: Physical and chemical properties

· **9.1 Information on basic physical and chemical properties**

· **General Information**

· **Physical state**

Fluid

· **Colour:**

Colourless

· **Odour:**

Not characteristic

· **Odour threshold:**

Not determined.

· **Melting point/freezing point:**

 $< 5\text{ }^{\circ}\text{C}$

· **Boiling point or initial boiling point and boiling range**

 $> 100\text{ }^{\circ}\text{C}$

· **Flammability**

Not applicable.

· **Lower and upper explosion limit**

· **Lower:**

Not determined.

· **Upper:**

Not determined.

· **Flash point:**

Not applicable

· **Decomposition temperature:**

Not determined.

· **pH at 20 °C**

4.6

· **Viscosity:**

· **Kinematic viscosity**

Not determined

· **dynamic:**

Not determined

· **Solubility**

· **Water:**

miscible

· **Partition coefficient n-octanol/water (log value)**

Not determined.

· **Vapour pressure at 20 °C:**

23 hPa

· **Density and/or relative density**

· **Density at 20 °C**

 1.353 g/cm^3

· **Relative density**

Not determined.

· **Vapour density**

Not determined.

· **9.2 Other information**

· **Appearance:**

· **Form:**

Fluid

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- **Important information on protection of health and environment, and on safety.**
- **Self-inflammability:** Product is not selfigniting.
- **Explosive properties:** Product is not explosive.
- **Solvent content:**
- **Organic solvents:** 5.4 %
- **Water:** 36.5 %
- **Solids content:** 58.1 %
- **Change in condition**
- **Evaporation rate** Not determined.

- **Information with regard to physical hazard classes**
- **Explosives** Void
- **Flammable gases** Void
- **Aerosols** Void
- **Oxidising gases** Void
- **Gases under pressure** Void
- **Flammable liquids** Void
- **Flammable solids** Void
- **Self-reactive substances and mixtures** Void
- **Pyrophoric liquids** Void
- **Pyrophoric solids** Void
- **Self-heating substances and mixtures** Void
- **Substances and mixtures, which emit flammable gases in contact with water** Void
- **Oxidising liquids** Void
- **Oxidising solids** Void
- **Organic peroxides** Void
- **Corrosive to metals** Void
- **Desensitised explosives** Void

SECTION 10: Stability and reactivity

- **10.1 Reactivity** No further relevant information available.
- **10.2 Chemical stability**
- **Thermal decomposition / conditions to be avoided:**
No decomposition if used according to specifications.
- **10.3 Possibility of hazardous reactions**
Reacts with strong acids and alkali
Reacts with acids releasing sulphur dioxide

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- Reacts with alkalis releasing ammonia
- **10.4 Conditions to avoid** No further relevant information available.
- **10.5 Incompatible materials:** No further relevant information available.
- **10.6 Hazardous decomposition products:**
No dangerous decomposition products known

SECTION 11: Toxicological information

· 11.1 Information on hazard classes as defined in Regulation (EC) No 1272/2008

- **Acute toxicity** Based on available data, the classification criteria are not met.

· **LD/LC50 values that are relevant for classification:**

ATE (Acute Toxicity Estimates)

Dermal	LD50	19,677 mg/kg (rabbit)
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- **Skin corrosion/irritation**
Based on available data, the classification criteria are not met.
Based on available data, the classification criteria are not met.
- **Serious eye damage/irritation**
mild irritant
Based on available data, the classification criteria are not met.
- **Respiratory or skin sensitisation**
Based on available data, the classification criteria are not met.
- **Germ cell mutagenicity** Based on available data, the classification criteria are not met.
- **Carcinogenicity** Based on available data, the classification criteria are not met.
- **Reproductive toxicity** Based on available data, the classification criteria are not met.
- **STOT-single exposure** Based on available data, the classification criteria are not met.
- **STOT-repeated exposure**
Based on available data, the classification criteria are not met.
- **Aspiration hazard** Based on available data, the classification criteria are not met.
- **Subacute to chronic toxicity:** No symptoms known so far.
- **Additional toxicological information:**
This statement was deduced from the properties of the single components.
- **CMR effects (carcinogenicity, mutagenicity and toxicity for reproduction)**
No known symptoms to date.
- **11.2 Information on other hazards**

· **Endocrine disrupting properties**

None of the ingredients is listed.

- IRL -

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SECTION 12: Ecological information

- **12.1 Toxicity**
- **Aquatic toxicity:** No further relevant information available.
- **12.2 Persistence and degradability** Not determined
- **Behaviour in environmental systems:** Not determined
- **12.3 Bioaccumulative potential** Not determined
- **12.4 Mobility in soil** No further relevant information available.
- **12.5 Results of PBT and vPvB assessment**
- **PBT:** Not applicable.
- **vPvB:** Not applicable.
- **12.6 Endocrine disrupting properties**
The product does not contain substances with endocrine disrupting properties.
- **12.7 Other adverse effects**
- **Ecotoxicological effects:** No further relevant information available.
- **Behaviour in sewage processing plants:** Not determined
- **Additional ecological information:**
- **General notes:**
Water hazard class 2 (German Regulation) (Self-assessment): Water-endangering.
Do not allow product to reach ground water, water bodies or sewage system.
Do not allow undiluted product or large quantities of it to reach ground water, water bodies or sewage system.
At present there are no ecotoxicological assessments.
This statement was deduced from the properties of the single components.
The product does not contain organically bounded halogens (AOX-free).

SECTION 13: Disposal considerations

- **13.1 Waste treatment methods**
- **Recommendation**
Must not be disposed of together with household garbage. Do not allow product to reach sewage system.
Must be specially treated under adherence to official regulations.
Small amounts may be diluted with plenty of water and washed away. Dispose of bigger amounts in accordance with Local Authority requirements.

· European waste catalogue

16 00 00	WASTES NOT OTHERWISE SPECIFIED IN THE LIST
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16 05 00	gases in pressure containers and discarded chemicals
16 05 08*	discarded organic chemicals consisting of or containing hazardous substances
HP8	Corrosive
HP10	Toxic for reproduction
HP12	Release of an acute toxic gas

- **Uncleaned packagings:**

- **Recommendation:**

Packagings that cannot be cleaned are to be disposed of in the same manner as the product.

EAK-No. 15 01 10

Non contaminated packagings can be used for recycling.

Empty contaminated packagings thoroughly. They can be recycled after thorough and proper cleaning.

- **Recommended cleaning agent:** Water, if necessary with cleaning agent.

SECTION 14: Transport information

- **14.1 UN number or ID number**

- **ADR/RID, ADN, IMDG, IATA** Void

- **14.2 UN proper shipping name**

- **ADR/RID, ADN, IMDG, IATA** Void

- **14.3 Transport hazard class(es)**

- **ADR/RID, ADN, IMDG, IATA**

- **Class** Void

- **14.4 Packing group**

- **ADR/RID, IMDG, IATA** Void

- **14.5 Environmental hazards:** Not applicable.

- **14.6 Special precautions for user** Not applicable.

- **14.7 Maritime transport in bulk**

according to IMO instruments Not applicable.

- **UN "Model Regulation":**

Void

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SECTION 15: Regulatory information

- **15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture**
- **Labelling according to Regulation (EC) No 1272/2008** Void
- **Hazard pictograms** Void
- **Signal word** Void
- **Hazard-determining components of labelling:**
boric acid
- **Hazard statements** Void
- **Directive 2012/18/EU**
- **Named dangerous substances - ANNEX I** None of the ingredients is listed.
- **REGULATION (EC) No 1907/2006 ANNEX XVII** Conditions of restriction: 65

· **DIRECTIVE 2011/65/EU on the restriction of the use of certain hazardous substances in electrical and electronic equipment – Annex II**

None of the ingredients is listed.

· **REGULATION (EU) 2019/1148**

· **Annex I - RESTRICTED EXPLOSIVES PRECURSORS (Upper limit value for the purpose of licensing under Article 5(3))**

None of the ingredients is listed.

· **Annex II - REPORTABLE EXPLOSIVES PRECURSORS**

None of the ingredients is listed.

· **Regulation (EC) No 273/2004 on drug precursors**

None of the ingredients is listed.

· **Regulation (EC) No 111/2005 laying down rules for the monitoring of trade between the Community and third countries in drug precursors**

None of the ingredients is listed.

· **National regulations**

· **Decree to be applied in case of technical fault:**

Class	Share in %
I	0.2
II	5.4

· **Water hazard class:** Water hazard class 2 (Self-assessment): water-endangering.

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· **Other regulations, limitations and prohibitive regulations**

· **Substances of very high concern (SVHC) according to REACH, Article 57**

10043-35-3	boric acid	≥ 0.3 - < 0.5%
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· **15.2 Chemical safety assessment:**

A Chemical Safety Assessment has not been carried out.

SECTION 16: Other information

These data are based on our present knowledge. However, they shall not constitute a guarantee for any specific product features and shall not establish a legally valid contractual relationship.

· **Relevant phrases**

- H226 Flammable liquid and vapour.
- H302 Harmful if swallowed.
- H312 Harmful in contact with skin.
- H314 Causes severe skin burns and eye damage.
- H351 Suspected of causing cancer.
- H360FD May damage fertility. May damage the unborn child.
- H361d Suspected of damaging the unborn child.
- H411 Toxic to aquatic life with long lasting effects.

· **Recommended restriction of use** No public product, only for commercial use

· **Version number of previous version: 8.1**

· **Abbreviations and acronyms:**

RID: Règlement international concernant le transport des marchandises dangereuses par chemin de fer (Regulations Concerning the International Transport of Dangerous Goods by Rail)
 ICAO: International Civil Aviation Organisation
 ADR: Accord relatif au transport international des marchandises dangereuses par route (European Agreement Concerning the International Carriage of Dangerous Goods by Road)
 IMDG: International Maritime Code for Dangerous Goods
 IATA: International Air Transport Association
 GHS: Globally Harmonised System of Classification and Labelling of Chemicals
 EINECS: European Inventory of Existing Commercial Chemical Substances
 ELINCS: European List of Notified Chemical Substances
 CAS: Chemical Abstracts Service (division of the American Chemical Society)
 LC50: Lethal concentration, 50 percent
 LD50: Lethal dose, 50 percent
 PBT: Persistent, Bioaccumulative and Toxic
 SVHC: Substances of Very High Concern
 vPvB: very Persistent and very Bioaccumulative
 Flam. Liq. 3: Flammable liquids – Category 3
 Acute Tox. 4: Acute toxicity – Category 4
 Skin Corr. 1A: Skin corrosion/irritation – Category 1A
 Carc. 2: Carcinogenicity – Category 2
 Repr. 1B: Reproductive toxicity – Category 1B
 Repr. 2: Reproductive toxicity – Category 2

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Aquatic Chronic 2: Hazardous to the aquatic environment - long-term aquatic hazard – Category 2

Sources

applicable EEC directives:

- 1907/2006

- 1272/2008

Internal physical tests, MSDS of the ingredients,

Information system on hazardous substances of the German Social Accident Insurance (GESTIS-database on hazardous substances), <http://www.dguv.de/ifa/en/gestis/stoffdb/index.jsp>

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