

Safety Data Sheet

according to 1907/2006/EC, Article 31

Printing date 13.03.2009

Version 6

Revision: 13.03.2009

1 Identification of substance:

- **Product details:**
- **Trade name: Polvofix-TC part 1**
- **Article number:** 00114
- **Application of the substance / the preparation**
 Photochemicals
 Fixing agent for X-ray films
 Reserved for industrial and professional use.
- **Manufacturer/Supplier:**
 ADEFO-CHEMIE GmbH
 Justus-von-Liebig-Str. 24-26
 D-63128 Dietzenbach
 Tel.: +49 6074 84239-0
 Fax: +49 6074 84239-63
 E-Mail: service@adefo-chemie.de
 www.adefo-chemie.de
- **Informing department:**
 Tel.: +49 6074 84239-0
 Fax: +49 6074 84239-63
 Competent person according to 1907/2006/EC, Annex II:
 E-Mail: kr@calbe-chemie.de
- **Emergency information:** Tel.: 0700-24112112 (CAL)

2 Hazards identification

- **Hazard designation:**



Xi Irritant

- **Information pertaining to particular dangers for man and environment**
 The product has to be labelled due to the calculation procedure of the "General Classification guideline for preparations of the EU" in the latest valid version.
 R 36 Irritating to eyes.
- **Classification system**
 The classification is in line with current EC lists. It is expanded, however, by information from technical literature and by information furnished by supplier companies.

3 Composition/information on ingredients

- **Chemical characterization**
- **Description:** Mixture of the substances listed below with harmless additions.

- **Dangerous components:**

CAS: 7681-57-4 EINECS: 231-673-0	disodium disulphite	Xn, Xi; R 22-31-41	5.0-10%
CAS: 7783-18-8 EINECS: 231-982-0	ammonium thiosulphate		75-100%

- **Additional information** For the wording of the listed risk phrases refer to section 16.



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4 First aid measures

- **General information** Instantly remove any clothing soiled by the product.
- **After inhalation** Supply fresh air; consult doctor in case of symptoms.
- **After skin contact**
Instantly rinse with water.
The product is not skin irritating.
- **After eye contact**
Rinse opened eye for several minutes under running water (> 15 min). Then consult doctor.
- **After swallowing**
Rinse out mouth and then drink plenty of water.
In case of persistent symptoms consult doctor.
- **Information for doctor**
- **The following symptoms may occur:** No known symptoms to date.

5 Fire fighting measures

- **Suitable extinguishing agents**
CO₂, extinguishing powder or water jet. Fight larger fires with water 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.
- **Special hazards caused by the material, its products of combustion or resulting gases:**
Can be released in case of fire
sulphur dioxide (SO₂)
- **Protective equipment:** Put on breathing apparatus.
- **Additional information** The product is not flammable

6 Accidental release measures

- **Person-related safety precautions:**
Wear protective clothing.
Avoid causing dust.
- **Measures for environmental protection:**
Do not allow to enter drainage system, surface or ground water.
- **Measures for cleaning/collecting:**
Collect mechanically.
Dispose of contaminated material as waste according to item 13.
- **Additional information:**
See Section 8 for information on personal protection equipment.
See Section 13 for information on disposal.

7 Handling and storage

- **Handling**
- **Information for safe handling:** Prevent formation of dust.

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- **Information about protection against explosions and fires:**
No special measures required.
The product is not flammable
- **Storage**
- **Requirements to be met by storerooms and containers:** No special requirements.
- **Information about storage in one common storage facility:** Not required.
- **Further information about storage conditions:** Keep container tightly sealed.
- **Storage class** LGK 13 (VCI-Concept)

8 Exposure controls and personal protection

- **Additional information about design of technical systems:** No further data; see item 7.

- **Components with limit values that require monitoring at the workplace:**

7681-57-4 disodium disulphiteWEL Long-term value: 5 mg/m³

- **Additional information:** The lists that were valid during the compilation were used as basis.
- **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.
Do not eat, drink or smoke while working.
Take off immediately all contaminated clothing
Wash hands during breaks and at the end of the work.
Avoid contact with the eyes and skin.
- **Breathing equipment:** Not necessary if room is well-ventilated.
- **Protection of hands:**
Protective gloves.
The protective gloves to be used must comply with the specifications of the EC directive 89/686/EEC 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**
Nitrile rubber, NBR
Butyl rubber, BR
Fluorocarbon rubber (Viton)
PVC gloves
Recommended thickness of the material: ≥ 0.5 mm
- **Penetration time of glove material**
Value for permeation: Level ≥ 6 (480 min)
The determined penetration times according to EN 374 part III are not performed under practical conditions. Therefore a maximum wearing time, which corresponds to 50% of the penetration time, is recommended.
- **For the permanent contact of a maximum of 15 minutes gloves made of the following materials are suitable:**
Synthetic gloves
Value for permeation: Level:
 ≥ 3 (60 min)

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- **Not suitable are gloves made of the following materials:** Natural rubber, NR
- **Eye protection:** Safety glasses

9 Physical and chemical properties:

· General Information

Form:	Solid.
Colour:	Colourless
Odour:	Pungent

· Change in condition

Melting point/Melting range:	> 150 °C
Boiling point/Boiling range:	Not determined

· **Flash point:** Not applicable

· **Ignition temperature:**

· **Decomposition temperature:** > 150 °C

· **Self-inflammability:** Product is not selfigniting.

· **Danger of explosion:** Product is not explosive.

· **Density** Not determined

· **Settled apparent density at 20 °C** 1000 kg/m³

· Solubility in / Miscibility with

Water:	Soluble
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· **pH-value (50 g/l) at 20 °C:** 5.6

· Solvent content:

Organic solvents:	0.0 %
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· **Solids content:** 100.0 %

10 Stability and reactivity

· **Thermal decomposition / conditions to be avoided:**

No decomposition if used according to specifications.

· **Dangerous reactions**

Reacts with strong acids and alkali
Reacts with acids releasing sulphur dioxide
Reacts with alkalis releasing ammonia

· **Dangerous products of decomposition:** No dangerous decomposition products known

11 Toxicological information

· **Acute toxicity:**

· **Primary irritant effect:**

· **on the skin:** No irritant effect.

· **on the eye:** Irritant effect.

· **Sensitization:** No sensitizing effect known.

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- **Subacute to chronic toxicity:** No known symptoms to date.
- **Additional toxicological information:**
The product shows the following dangers according to the calculation method of the General EC Classification Guidelines for Preparations as issued in the latest version:
Irritant
This statement was deduced from the properties of the single components.

12 Ecological information:

- **Information about elimination (persistence and degradability):** Not determined
- **Behaviour in environmental systems:** Not determined
- **Mobility and bioaccumulation potential:** Not determined
- **Ecotoxicological effects:** Not determined
- **Acquatic toxicity:** Not determined
- **Behaviour in sewage processing plants:** Not determined
- **General notes:**
Water hazard class 1 (German Regulation) (Self-assessment): slightly hazardous for water.
At present there are no ecotoxicological assessments.
The product does not contain organically bounded halogens (AOX-free).

13 Disposal considerations

- **Product:**
- **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.

- **European waste catalogue**

09 01 04	fixer solutions
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- **Uncleaned packagings:**
- **Recommendation:**
Non contaminated packagings can be used for recycling.
Empty contaminated packagings thoroughly. They can be recycled after thorough and proper cleaning.
Packagings that cannot be cleaned are to be disposed of in the same manner as the product.
EAK-No. 15 01 10
- **Recommended cleaning agent:** Water, if necessary with cleaning agent.

14 Transport information

- **Land transport ADR/RID (cross-border)**
- **ADR/RID-GGVS/E Class:** -
- **Maritime transport IMDG:**
- **IMDG Class:** -
- **Air transport ICAO-TI and IATA-DGR:**
- **ICAO/IATA Class:** -

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- **Transport/Additional information:** Not dangerous according to the above specifications.

15 Regulatory information

- **Designation according to EC guidelines:**

The product has been classified and labelled in accordance with EC Directives / Ordinance on Hazardous Materials (GefStoffV)

- **Code letter and hazard designation of product:**



Xi Irritant

- **Risk phrases:**

36 Irritating to eyes.

- **Safety phrases:**

26 In case of contact with eyes, rinse immediately with plenty of water and seek medical advice.

39 Wear eye/face protection.

- **National regulations**

- **Water hazard class:** Water hazard class 1 (Self-assessment): slightly hazardous for water.

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 R-phrases**

22 Harmful if swallowed.

31 Contact with acids liberates toxic gas.

41 Risk of serious damage to eyes.

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

- **Sources**

applicable EEC directives:

- 1999/45/EC last change 2006/8/EC

- 67/548/EC last change 2004/73/EC (29. ATP)

Internal physical tests, MSDS of the ingredients

- * **Data compared to the previous version altered.**

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1 Identification of substance:

- **Product details:**
- **Trade name: Polvofix-TC part 2**
- **Article number:** 00114
- **Application of the substance / the preparation**
 Photochemicals
 Fixing agent for X-ray films
 Reserved for industrial and professional use.
- **Manufacturer/Supplier:**
 ADEFO-CHEMIE GmbH
 Justus-von-Liebig-Str. 24-26
 D-63128 Dietzenbach
 Tel.: +49 6074 84239-0
 Fax: +49 6074 84239-63
 E-Mail: service@adefo-chemie.de
 www.adefo-chemie.de
- **Informing department:**
 Tel.: +49 6074 84239-0
 Fax: +49 6074 84239-63
 Competent person according to 1907/2006/EC, Annex II:
 E-Mail: kr@calbe-chemie.de
- **Emergency information:** Tel.: 0700-24112112 (CAL)

2 Hazards identification

- **Hazard designation:**



Xi Irritant

- **Information pertaining to particular dangers for man and environment**
 The product has to be labelled due to the calculation procedure of the "General Classification guideline for preparations of the EU" in the latest valid version.
 R 41 Risk of serious damage to eyes.
- **Classification system**
 The classification is in line with current EC lists. It is expanded, however, by information from technical literature and by information furnished by supplier companies.

3 Composition/information on ingredients

- **Chemical characterization**
- **Description:** Mixture of the substances listed below with harmless additions.

- **Dangerous components:**

CAS: 10043-01-3 EINECS: 233-135-0	aluminium sulphate	Xi; R 38-41	75-100%
CAS: 5329-14-6 EINECS: 226-218-8	sulphamic acid	Xi; R 36/38-52/53	15-20%
CAS: 77-92-9 EINECS: 201-069-1	citric acid	Xi; R 36	5.0-10%

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- **Additional information** For the wording of the listed risk phrases refer to section 16.

4 First aid measures

- **General information** Instantly remove any clothing soiled by the product.
- **After inhalation** Supply fresh air; consult doctor in case of symptoms.
- **After skin contact**
Instantly wash with water and soap and rinse thoroughly.
The product is not skin irritating.
- **After eye contact**
Rinse opened eye for several minutes under running water (> 15 min). Then consult doctor.
- **After swallowing**
Rinse out mouth and then drink plenty of water.
Do not induce vomiting; instantly call for medical help.
- **Information for doctor**
- **The following symptoms may occur:** No known symptoms to date.

5 Fire fighting measures

- **Suitable extinguishing agents**
CO₂, extinguishing powder or water jet. Fight larger fires with water 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.
- **Special hazards caused by the material, its products of combustion or resulting gases:**
Can be released in case of fire
Sulphur oxides (SO_x)
- **Protective equipment:** No special measures required.
- **Additional information** The product is not flammable

6 Accidental release measures

- **Person-related safety precautions:**
Wear protective clothing.
Avoid causing dust.
- **Measures for environmental protection:**
Do not allow to enter drainage system, surface or ground water.
- **Measures for cleaning/collecting:**
Collect mechanically.
Dispose of contaminated material as waste according to item 13.
- **Additional information:**
See Section 8 for information on personal protection equipment.
See Section 13 for information on disposal.

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Trade name: Polvofix-TC part 2

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7 Handling and storage

- **Handling**
- **Information for safe handling:** Prevent formation of dust.
- **Information about protection against explosions and fires:**
No special measures required.
The product is not flammable
- **Storage**
- **Requirements to be met by storerooms and containers:** No special requirements.
- **Information about storage in one common storage facility:** Not required.
- **Further information about storage conditions:**
Store in cool, dry conditions in well sealed containers.
- **Recommended storage temperature:** 5-30 °C
- **Storage class** LGK 13 (VCI-Concept)

8 Exposure controls and personal protection

- **Additional information about design of technical systems:** No further data; see item 7.
- **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.
- **Additional information:** The lists that were valid during the compilation were used as basis.
- **Personal protective equipment**
- **General protective and hygienic measures**
The usual precautionary measures should be adhered to general rules for handling chemicals.
Take off immediately all contaminated clothing
Keep away from foodstuffs, beverages and food.
Do not eat, drink or smoke while working.
Wash hands during breaks and at the end of the work.
Avoid contact with the eyes.
- **Breathing equipment:** Not required.
- **Protection of hands:**
Protective gloves.
The protective gloves to be used must comply with the specifications of the EC directive 89/686/EEC 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**
Nitrile rubber, NBR
Butyl rubber, BR
Recommended thickness of the material: ≥ 0.5 mm mm
- **Penetration time of glove material**
Value for permeation: Level ≥ 6 (480 min)
The determined penetration times according to EN 374 part III are not performed under practical conditions. Therefore a maximum wearing time, which corresponds to 50% of the penetration time, is recommended.
- **For the permanent contact of a maximum of 15 minutes gloves made of the following materials are suitable:**
Synthetic gloves

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Value for permeation: Level:
≥ 3 (60 min)

- **Eye protection:** Tightly sealed safety glasses.

9 Physical and chemical properties:

· General Information

Form:	Solid.
Colour:	Colourless
Odour:	Odourless

· Change in condition

Melting point/Melting range:	> 90 °C
Boiling point/Boiling range:	Not determined

· **Flash point:** Not applicable

· **Ignition temperature:**

· **Decomposition temperature:** > 190 °C

· **Self-inflammability:** Product is not selfigniting.

· **Danger of explosion:** Product is not explosive.

· **Density at 20 °C** 2.539 g/cm³

· **Settled apparent density at 20 °C** 1200 kg/m³

· **Solubility in / Miscibility with Water:**

Soluble

· **pH-value (100 g/l) at 20 °C:** 1.2

· **Solvent content:**

Organic solvents: 0.0 %

· **Solids content:** 100.0 %

10 Stability and reactivity

· **Thermal decomposition / conditions to be avoided:**

No decomposition if used according to specifications.

· **Dangerous reactions** No dangerous reactions known

· **Dangerous products of decomposition:** No dangerous decomposition products known

11 Toxicological information

· **Acute toxicity:**

· **Primary irritant effect:**

· **on the skin:** No irritant effect.

· **on the eye:** Strong irritant with the danger of severe eye injury.

· **Sensitization:** No sensitizing effect known.

· **Subacute to chronic toxicity:** No known symptoms to date.

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Additional toxicological information:

The product shows the following dangers according to the calculation method of the General EC Classification Guidelines for Preparations as issued in the latest version:

Irritant

This statement was deduced from the properties of the single components.

12 Ecological information:**Information about elimination (persistence and degradability):** Not determined**Behaviour in environmental systems:** Not determined**Mobility and bioaccumulation potential:** Not determined**Ecotoxicological effects:** Not determined**Acquatic toxicity:** Not determined**General notes:**

Water hazard class 1 (German Regulation) (Self-assessment): slightly hazardous for water.

At present there are no ecotoxicological assessments.

The product does not contain organically bounded halogens (AOX-free).

13 Disposal considerations**Product:****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.

European waste catalogue

09 01 04 | fixer solutions

Uncleaned packagings:**Recommendation:**

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.**14 Transport information****Land transport ADR/RID (cross-border)****ADR/RID-GGVS/E Class:** -**Maritime transport IMDG:****IMDG Class:** -**Marine pollutant:** No**Air transport ICAO-TI and IATA-DGR:****ICAO/IATA Class:** -**Transport/Additional information:** Not dangerous according to the above specifications.

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15 Regulatory information

- **Designation according to EC guidelines:**

The product has been classified and labelled in accordance with EC Directives / Ordinance on Hazardous Materials (GefStoffV)

- **Code letter and hazard designation of product:**



Xi Irritant

- **Risk phrases:**

41 Risk of serious damage to eyes.

- **Safety phrases:**

26 In case of contact with eyes, rinse immediately with plenty of water and seek medical advice.

39 Wear eye/face protection.

- **National regulations**

- **Water hazard class:** Water hazard class 1 (Self-assessment): slightly hazardous for water.

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 R-phrases**

36 Irritating to eyes.

36/38 Irritating to eyes and skin.

38 Irritating to skin.

41 Risk of serious damage to eyes.

52/53 Harmful to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

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

- **Sources**

applicable EEC directives:

- 1999/45/EC last change 2006/8/EC

- 67/548/EC last change 2004/73/EC (29. ATP)

Internal physical tests, MSDS of the ingredients

- * **Data compared to the previous version altered.**