

SAFETY DATA SHEET

according to Regulation (EC) No. 1907/2006

MERCK

Version: 1.0

Product number: 212094

Date of first issue: 25.01.2018

Print Date: 05.02.2018

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

1.1 Product identifier

Product number 212094

Product name AZ ECI 3007 Photoresist

1.2 Relevant identified uses of the substance or mixture and uses advised against

Identified uses Materials for use in technical applications

1.3 Details of the supplier of the safety data sheet

Company Merck KGaA * 64271 Darmstadt * Germany * Phone:+49 6151 72-0
Responsible Department PM-OQR * e-mail: PM_SDS_Supply@merckgroup.com

1.4 Emergency telephone number

Please contact the regional company representation in your country.

SECTION 2: Hazards identification

2.1 Classification of the substance or mixture

Classification (REGULATION (EC) No 1272/2008)


Flammable liquids, Category 3 H226: Flammable liquid and vapour.

Serious eye damage, Category 1 H318: Causes serious eye damage.
Calculation method

Specific target organ toxicity - single exposure, Category 3, Respiratory system H335: May cause respiratory irritation.
Calculation method

2.2 Label elements

Labelling (REGULATION (EC) No 1272/2008)

Hazard pictograms : 

Signal word : Danger

Hazard statements : H226 Flammable liquid and vapour.
H318 Causes serious eye damage.
H335 May cause respiratory irritation.

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Precautionary statements :

Prevention:

P210 Keep away from heat.

P280 Wear eye protection/ face protection.

Response:

P305 + P351 + P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

P313 Get medical advice/ attention.

Hazardous components which must be listed on the label:

ethyl-(S)-2-hydroxypropionate

2.3 Other hazards

None known.

SECTION 3: Composition/information on ingredients

Chemical nature : Organic mixture in:
Solvent

3.1 Substance

Not applicable

3.2 Mixtures

Hazardous components

Chemical name	CAS-No. Registration number	Classification	Concentration (% w/w)
ethyl-(S)-2-hydroxypropionate	687-47-8 01-2119516234-49- xxxx	Flam. Liq. 3; H226 Eye Dam. 1; H318 STOT SE 3; H335	>= 50 - <= 100
6-Diazo-5,6-dihydro-5-oxo-1-naphthalenesulfonic acid ester with (4-hydroxyphenyl)(2,3,4-trihydroxyphenyl)methanone	107761-81-9	Self-react. D; H242 Aquatic Chronic 4; H413	>= 1 - < 2,5

SECTION 4: First aid measures

4.1 Description of first aid measures

If inhaled : fresh air.

In case of skin contact : rinse out with polyethylene glycol 400 or a mixture of polyethylene glycol 300/ethanol 2:1 and wash with plenty of water. If neither is available wash with plenty of water. Immediately take off contaminated clothing. Seek medical advice immediately.

In case of eye contact : rinse out with plenty of water.
Immediately call in ophthalmologist.

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Remove contact lenses.

If swallowed : immediately make victim drink water (two glasses at most).
Consult a physician.

4.2 Most important symptoms and effects, both acute and delayed

Symptoms : Irritation and corrosion
Cough
Shortness of breath
Risk of serious damage to eyes.

4.3 Indication of any immediate medical attention and special treatment needed

Treatment : No information available.

SECTION 5: Firefighting measures

5.1 Extinguishing media

Suitable extinguishing media : Water
Foam
Carbon dioxide (CO₂)
Dry powder

Unsuitable extinguishing media : For this substance/mixture no limitations of extinguishing agents are given.

5.2 Special hazards arising from the substance or mixture

Specific hazards during firefighting : Fire may cause evolution of:
Nitrogen oxides (NO_x)
Sulphur oxides

Combustible.

Vapours are heavier than air and may spread along floors.
Forms explosive mixtures with air at elevated temperatures.
Development of hazardous combustion gases or vapours possible in the event of fire.

5.3 Advice for firefighters

Special protective equipment for firefighters : In the event of fire, wear self-contained breathing apparatus.

Further information : Cool closed containers exposed to fire with water spray.
Prevent fire extinguishing water from contaminating surface water or the ground water system.

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SECTION 6: Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures

Personal precautions : Advice for non-emergency personnel:
Do not breathe vapours, aerosols.
Avoid substance contact.
Ensure adequate ventilation.
Keep away from heat and sources of ignition.
Evacuate the danger area, observe emergency procedures, consult an expert.
Advice for emergency responders:
Protective equipment see section 8.

6.2 Environmental precautions

Environmental precautions : Do not flush into surface water or sanitary sewer system.
Risk of explosion.

6.3 Methods and material for containment and cleaning up

Methods for cleaning up : Cover drains. Collect, bind, and pump off spills.
Observe possible material restrictions (see sections 7 and 10).
Take up with liquid-absorbent material (e.g. Chemisorb®).
Dispose of properly. Clean up affected area.

6.4 Reference to other sections

Indications about waste treatment see section 13.

SECTION 7: Handling and storage

7.1 Precautions for safe handling

Advice on safe handling : Observe label precautions.

Advice on protection against fire and explosion : Keep away from open flames, hot surfaces and sources of ignition. Take precautionary measures against static discharge.

Hygiene measures : Immediately change contaminated clothing. Apply preventive skin protection. Wash hands and face after working with substance.

7.2 Conditions for safe storage, including any incompatibilities

Requirements for storage areas and containers : Store in original container.

Further information on storage conditions : Keep container tightly closed in a dry and well-ventilated place. Keep away from heat and sources of ignition.

Protected from light.

Risks from decomposition products: see section 10.3

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Recommended storage temperature : Recommended storage temperature see product label.

7.3 Specific end use(s)

Apart from the uses mentioned in section 1.2 no other specific uses are stipulated.

SECTION 8: Exposure controls/personal protection

8.1 Control parameters

8.2 Exposure controls

Engineering measures

Technical measures and appropriate working operations should be given priority over the use of personal protective equipment.

See section 7.1.

Personal protective equipment

Protective clothing needs to be selected specifically for the workplace, depending on concentrations and quantities of the hazardous substances handled and must meet the specifications of a standard EN/ISO/DIN. The chemical resistance of the protective equipment should be enquired at the respective supplier.

Eye protection : Tightly fitting safety goggles

Hand protection :

splash contact

Glove material : Nitrile rubber

Glove thickness : 0,4 mm

Break through time : 10 min

The protective gloves to be used must comply with the specifications of EC Directive 89/686/EEC and the related standard EN374, for example:KCL 730 Camatril® -Velours(splash contact);.

This recommendation applies only to the product stated in the safety data sheet, supplied by us and for the designated use. When dissolving in or mixing with other substances and under conditions deviating from those stated in EN374 please contact the supplier of CE-approved gloves (e.g. KCL GmbH, D-36124 Eichenzell, Internet: www.kcl.de).

Protective measures : Flame retardant antistatic protective clothing.

Respiratory protection : required when vapours/aerosols are generated.

Recommended Filter type: : ABEK-filter

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The entrepreneur has to ensure that maintenance, cleaning and testing of respiratory protective devices are carried out according to the instructions of the producer. These measures have to be properly documented.

Environmental exposure controls

General advice : Do not flush into surface water or sanitary sewer system.
Risk of explosion.

SECTION 9: Physical and chemical properties

9.1 Information on basic physical and chemical properties

Form	liquid
Colour	red brown
Odour	characteristic
Odour Threshold	No information available.
pH	Not applicable
Melting point	No information available.
Boiling point/boiling range	131 °C at 1.013 hPa
Flash point	38 °C Method: closed cup
Evaporation rate	No information available.
Flammability (solid, gas)	No information available.
Lower explosion limit	No information available.
Upper explosion limit	No information available.
Vapour pressure	No information available.
Relative vapour density	No information available.
Density	1,045 g/cm ³ at 25 °C
Solubility(ies)	No information available.
Water solubility	partly soluble - phase separation
Partition coefficient: n-octanol/water	No information available.
Auto-ignition temperature	No information available.
Decomposition temperature	No information available.

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Viscosity, kinematic	No information available.
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Explosive properties	No information available.
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Oxidizing properties	No information available.
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9.2 Other data

Viscosity, dynamic	7,3 - 11,5 mPas at 25 °C
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SECTION 10: Stability and reactivity

10.1 Reactivity

Vapour/air-mixtures are explosive at intense warming.

10.2 Chemical stability

The product is chemically stable under standard ambient conditions (room temperature) .

10.3 Possibility of hazardous reactions

Hazardous reactions	: Risk of explosion with: Alkali metals alkali hydroxides Strong oxidizing agents
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10.4 Conditions to avoid

Conditions to avoid	: Heating. Exposure to light.
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10.5 Incompatible materials

Materials to avoid	: no information available
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10.6 Hazardous decomposition products

no information available

SECTION 11: Toxicological information

11.1 Information on toxicological effects

Acute toxicity

Product:

Acute oral toxicity	: No data available
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Acute inhalation toxicity	: Symptoms: mucosal irritations, Cough, Shortness of breath, Possible damages:, damage of respiratory tract
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Acute dermal toxicity	: No data available
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Components:

ethyl-(S)-2-hydroxypropionate:

Acute oral toxicity : LD50 (Rat): > 2.000 mg/kg
Acute inhalation toxicity : LC50 (Rat): > 5,4 mg/l
Exposure time: 4 h
Method: OECD Test Guideline 403
Acute dermal toxicity : No data available

6-Diazo-5,6-dihydro-5-oxo-1-naphthalenesulfonic acid ester with (4-hydroxyphenyl)(2,3,4--trihydroxyphenyl)methanone:

Acute oral toxicity : LD50 (Rat): > 2.000 mg/kg
Method: OECD Test Guideline 401
Acute inhalation toxicity : No data available
Acute dermal toxicity : No data available

Skin corrosion/irritation

Product:

No data available

Components:

ethyl-(S)-2-hydroxypropionate:

Result: Mild skin irritation

6-Diazo-5,6-dihydro-5-oxo-1-naphthalenesulfonic acid ester with (4-hydroxyphenyl)(2,3,4--trihydroxyphenyl)methanone:

Species: Rabbit
Method: OECD Test Guideline 404
Result: No skin irritation

Serious eye damage/eye irritation

Product:

Remarks: Risk of blindness!

Components:

ethyl-(S)-2-hydroxypropionate:

Result: Severe eye irritation

6-Diazo-5,6-dihydro-5-oxo-1-naphthalenesulfonic acid ester with (4-hydroxyphenyl)(2,3,4--trihydroxyphenyl)methanone:

Species: Rabbit
Method: OECD Test Guideline 405
Result: No eye irritation
Remarks: slight irritation

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Respiratory or skin sensitisation

Product:

No data available

Components:

ethyl-(S)-2-hydroxypropionate:

Result: Did not cause sensitisation on laboratory animals.

6-Diazo-5,6-dihydro-5-oxo-1-naphthalenesulfonic acid ester with (4-hydroxyphenyl)(2,3,4--trihydroxyphenyl)methanone:

Test Type: Maximisation Test

Species: Guinea pig

Method: OECD Test Guideline 406

Result: Did not cause sensitisation on laboratory animals.

Germ cell mutagenicity

Product:

No data available

Components:

6-Diazo-5,6-dihydro-5-oxo-1-naphthalenesulfonic acid ester with (4-hydroxyphenyl)(2,3,4--trihydroxyphenyl)methanone:

Genotoxicity in vitro : Test Type: Ames test
Method: Mutagenicity (Escherichia coli - reverse mutation assay)
Result: negative

Carcinogenicity

Product:

This information is not available.

Components:

This information is not available.

STOT - single exposure

Product:

No data available

Components:

ethyl-(S)-2-hydroxypropionate:

Assessment: May cause respiratory irritation.

STOT - repeated exposure

Product:

No data available

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Components:

No data available

Repeated dose toxicity

Product:

No data available

Components:

No data available

Aspiration toxicity

Product:

No data available

Components:

No data available

11.2 Other information

Product:

No data available

Other dangerous properties can not be excluded.

Handle in accordance with good industrial hygiene and safety practice.

SECTION 12: Ecological information

12.1 Toxicity

Product:

No data available

Components:

ethyl-(S)-2-hydroxypropionate:

Toxicity to fish : LC50 (Danio rerio (zebra fish)): 320 mg/l
Exposure time: 96 h
Method: OECD Test Guideline 203
Remarks: (External MSDS)

Toxicity to daphnia and other : EC50 (Daphnia magna (Water flea)): 683 mg/l
aquatic invertebrates : Exposure time: 48 h
Method: OECD Test Guideline 202

Toxicity to algae : IC50 (Pseudokirchneriella subcapitata (green algae)): 2.200 mg/l
Exposure time: 70 h
Remarks: (External MSDS)

6-Diazo-5,6-dihydro-5-oxo-1-naphthalenesulfonic acid ester with (4-hydroxyphenyl)(2,3,4--trihydroxyphenyl)methanone:

Toxicity to fish : LC50 (Danio rerio (zebra fish)): > 500 mg/l
Exposure time: 96 h
Method: OECD Test Guideline 203

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12.2 Persistence and degradability

Product:

No data available

Components:

ethyl-(S)-2-hydroxypropionate:

Biodegradability : Result: Readily biodegradable.
Biodegradation: 86 %
Exposure time: 28 d

Chemical Oxygen Demand : 1.620 mg/g
(COD)

6-Diazo-5,6-dihydro-5-oxo-1-naphthalenesulfonic acid ester with (4-hydroxyphenyl)(2,3,4--trihydroxyphenyl)methanone:

Biodegradability : Result: Not readily biodegradable.
Biodegradation: < 20 %
Exposure time: 28 d
Method: Modified Sturm Test

12.3 Bioaccumulative potential

Product:

No data available

Components:

ethyl-(S)-2-hydroxypropionate:

Partition coefficient: n- : log Pow: 0,06
octanol/water

6-Diazo-5,6-dihydro-5-oxo-1-naphthalenesulfonic acid ester with (4-hydroxyphenyl)(2,3,4--trihydroxyphenyl)methanone:

Partition coefficient: n- : log Pow: 4
octanol/water Method: OECD Test Guideline 107

12.4 Mobility in soil

Product:

No data available

Components:

ethyl-(S)-2-hydroxypropionate:

No data available

6-Diazo-5,6-dihydro-5-oxo-1-naphthalenesulfonic acid ester with (4-hydroxyphenyl)(2,3,4--trihydroxyphenyl)methanone:

No data available

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12.5 Results of PBT and vPvB assessment

Product:

Assessment : This substance/mixture contains no components considered to be either persistent, bioaccumulative and toxic (PBT), or very persistent and very bioaccumulative (vPvB) at levels of 0.1% or higher..

Components:

ethyl-(S)-2-hydroxypropionate:

No data available

6-Diazo-5,6-dihydro-5-oxo-1-naphthalenesulfonic acid ester with (4-hydroxyphenyl)(2,3,4--trihydroxyphenyl)methanone:

No data available

12.6 Other adverse effects

Product:

Additional ecological information : No data available

Discharge into the environment must be avoided.

Components:

ethyl-(S)-2-hydroxypropionate:

No data available

6-Diazo-5,6-dihydro-5-oxo-1-naphthalenesulfonic acid ester with (4-hydroxyphenyl)(2,3,4--trihydroxyphenyl)methanone:

No data available

SECTION 13: Disposal considerations

13.1 Waste treatment methods

Product : See www.retrologistik.com for processes regarding the return of chemicals and containers, or contact us there if you have further questions.

SECTION 14: Transport information

Air transport(IATA)

14.1. UN/ID No. : UN 1993

14.2. Proper shipping name : Flammable liquid, n.o.s.

(Ethyl lactate,n-Butyl acetate)

14.3. Class : 3

14.4. Packing group : III

14.5 Environmentally : --

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hazardous

14.6 Special precautions for user : no

Sea transport(IMDG)

14.1. UN number : UN 1993

14.2. Proper shipping name : FLAMMABLE LIQUID, N.O.S.
(Ethyl lactate, n-Butyl acetate)

14.3. Class : 3

14.4. Packing group : III

14.5 Environmentally : --

hazardous

14.6 Special precautions for user : yes

EmS Code : F-E, S-E

14.7 Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code

Not relevant

Land transport(ADR/RID)

14.1. UN number : UN 1993

14.2. Proper shipping name : FLAMMABLE LIQUID, N.O.S.
(Ethyl lactate, n-Butyl acetate)

14.3. Class : 3

14.4. Packing group : III

14.5 Environmentally : --

hazardous

SECTION 15: Regulatory information

15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture

Regulation (EC) No 850/2004 on persistent organic pollutants : Not applicable

REACH - List of substances subject to authorisation (Annex XIV) : Not applicable

Regulation (EC) No 1005/2009 on substances that deplete the ozone layer : Not applicable

REACH - Candidate List of Substances of Very High Concern for Authorisation (Article 59). : Not applicable

Regulation (EC) No 649/2012 of the European Parliament and the Council concerning the export and import of dangerous chemicals : Not applicable

REACH - Restrictions on the manufacture, placing on the market and use of certain dangerous substances, preparations and articles (Annex XVII) : Not applicable

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Seveso III: Directive 2012/18/EU of the European Parliament and of the Council on the control of major-accident hazards involving dangerous substances.

P5c	FLAMMABLE LIQUIDS	Quantity 1 5.000 t	Quantity 2 50.000 t
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Storage class : 3

Other regulations : Take note of Dir 94/33/EC on the protection of young people at work.

15.2 Chemical safety assessment

For this product a chemical safety assessment was not carried out.

SECTION 16: Other information

Training advice

Provide adequate information, instruction and training for operators.

Full text of H-Statements

H226	: Flammable liquid and vapour.
H242	: Heating may cause a fire.
H318	: Causes serious eye damage.
H335	: May cause respiratory irritation.
H413	: May cause long lasting harmful effects to aquatic life.

Key or legend to abbreviations and acronyms used in the safety data sheet

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AICS - Australian Inventory of Chemical Substances; ASTM - American Society for the Testing of Materials; bw - Body weight; CERCLA - Comprehensive Environmental Response, Compensation, and Liability Act; CMR - Carcinogen, Mutagen or Reproductive Toxicant; DIN - Standard of the German Institute for Standardisation; DOT - Department of Transportation; DSL - Domestic Substances List (Canada); ECx - Concentration associated with x% response; EHS - Extremely Hazardous Substance; ELx - Loading rate associated with x% response; EmS - Emergency Schedule; ENCS - Existing and New Chemical Substances (Japan); ErCx - Concentration associated with x% growth rate response; ERG - Emergency Response Guide; GHS - Globally Harmonized System; GLP - Good Laboratory Practice; HMIS - Hazardous Materials Identification System; IARC - International Agency for Research on Cancer; IATA - International Air Transport Association; IBC - International Code for the Construction and Equipment of Ships carrying Dangerous Chemicals in Bulk; IC50 - Half maximal inhibitory concentration; ICAO - International Civil Aviation Organization; IECSC - Inventory of Existing Chemical Substances in China; IMDG - International Maritime Dangerous Goods; IMO - International Maritime Organization; ISHL - Industrial Safety and Health Law (Japan); ISO - International Organisation for Standardization; KECI - Korea Existing Chemicals Inventory; LC50 - Lethal Concentration to 50 % of a test population; LD50 - Lethal Dose to 50% of a test population (Median Lethal Dose); MARPOL - International Convention for the Prevention of Pollution from Ships; MSHA - Mine Safety and Health Administration; n.o.s. - Not Otherwise Specified; NFPA - National Fire Protection Association; NO(A)EC - No Observed (Adverse) Effect Concentration; NO(A)EL - No Observed (Adverse) Effect Level; NOELR - No Observable Effect Loading Rate; NTP - National Toxicology Program; NZIoC - New Zealand Inventory of Chemicals; OECD - Organization for Economic Co-operation and Development; OPPTS - Office of Chemical Safety and Pollution Prevention; PBT - Persistent, Bioaccumulative and Toxic substance; PICCS - Philippines Inventory of Chemicals and Chemical Substances; (Q)SAR - (Quantitative) Structure Activity Relationship; RCRA - Resource Conservation and Recovery Act; REACH - Regulation (EC) No 1907/2006 of the European Parliament and of the Council concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals; RQ - Reportable Quantity; SADT - Self-Accelerating Decomposition Temperature; SARA - Superfund Amendments and Reauthorization Act; SDS - Safety Data Sheet; TCSI - Taiwan Chemical Substance Inventory; TSCA - Toxic Substances Control Act (United States); UN - United Nations; UNRTDG - United Nations Recommendations on the Transport of Dangerous Goods; vPvB - Very Persistent and Very Bioaccumulative

Disclaimer

The information contained herein is based on the present state of our knowledge. It characterises the product with regard to the appropriate safety precautions. It does not represent a guarantee of any properties of the product.