1. Identification

Product identifier used on the label

Irgacure® 1173 (old Darocur® 1173)

Recommended use of the chemical and restriction on use
Recommended use*: photoinitiator

* The “Recommended use” identified for this product is provided solely to comply with a US Federal requirement and is not part of the seller's published specification. The terms of this Safety Data Sheet (SDS) do not create or infer any warranty, express or implied, including by incorporation into or reference in the seller's sales agreement.

Details of the supplier of the safety data sheet

Company: BASF CORPORATION
100 Park Avenue
Florham Park, NJ 07932, USA

Telephone: +1 973 245-6000

Emergency telephone number

CHEMTREC: 1-800-424-9300
BASF HOTLINE: 1-800-832-HELP (4357)

Other means of identification
Chemical family: photoinitiator

2. Hazards Identification


Classification of the product

Acute Tox. 4 (oral)  Acute toxicity
Aquatic Acute 2  Hazardous to the aquatic environment - acute

Label elements

Pictogram:
Signal Word:
Warning

Hazard Statement:
H302 Harmful if swallowed.
H401 Toxic to aquatic life.

Precautionary Statements (Prevention):
P273 Avoid release to the environment.
P270 Do not eat, drink or smoke when using this product.
P264 Wash with plenty of water and soap thoroughly after handling.

Precautionary Statements (Response):
P312 Call a POISON CENTER or doctor/physician if you feel unwell.
P301 + P330 IF SWALLOWED: rinse mouth.

Precautionary Statements (Disposal):
P501 Dispose of contents/container to hazardous or special waste collection point.

Hazards not otherwise classified
No specific dangers known, if the regulations/notes for storage and handling are considered.

Labeling of special preparations (GHS):
The following percentage of the mixture consists of component(s) with unknown hazards regarding the acute toxicity: 100 %


Emergency overview
CAUTION:
May be harmful if swallowed.
May cause damage to organs (liver) through prolonged or repeated exposure.

3. Composition / Information on Ingredients


<table>
<thead>
<tr>
<th>CAS Number</th>
<th>Content (W/W)</th>
<th>Chemical name</th>
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4. First-Aid Measures

Description of first aid measures

General advice:
Immediately remove contaminated clothing.

If inhaled:
Remove the affected individual into fresh air and keep the person calm. Seek medical attention.

If on skin:
Wash affected areas thoroughly with soap and water. Seek medical attention.

If in eyes:
Wash affected eyes for at least 15 minutes under running water with eyelids held open.
Seek medical attention.

If swallowed:
Immediately rinse mouth and then drink plenty of water, do not induce vomiting, seek medical attention. Never induce vomiting or give anything by mouth if the victim is unconscious or having convulsions.

Most important symptoms and effects, both acute and delayed

Symptoms: The most important known symptoms and effects are described in the labelling (see section 2) and/or in section 11., Further important symptoms and effects are so far not known.

Indication of any immediate medical attention and special treatment needed

Note to physician
Treatment: Treat according to symptoms (decontamination, vital functions), no known specific antidote.

5. Fire-Fighting Measures

Extinguishing media

Suitable extinguishing media:
water spray, dry powder, foam

Unsuitable extinguishing media for safety reasons:
water jet

Special hazards arising from the substance or mixture
Hazards during fire-fighting:
harmful vapours
Evolution of fumes/fog. The substances/groups of substances mentioned can be released in case of fire.

Advice for fire-fighters
Protective equipment for fire-fighting:
Firefighters should be equipped with self-contained breathing apparatus and turn-out gear.
Further information:
The degree of risk is governed by the burning substance and the fire conditions. Contaminated extinguishing water must be disposed of in accordance with official regulations.

Impact Sensitivity:
Remarks: Based on the chemical structure there is no shock-sensitivity.

6. Accidental release measures

Personal precautions, protective equipment and emergency procedures
Use personal protective clothing. Keep people away and stay on the upwind side.

Environmental precautions
Do not discharge into drains/surface waters/groundwater.

Methods and material for containment and cleaning up
Spills should be contained, solidified, and placed in suitable containers for disposal.

7. Handling and Storage

Precautions for safe handling
Keep away from sources of ignition - No smoking.

Protection against fire and explosion:
Take precautionary measures against static discharges.

Conditions for safe storage, including any incompatibilities
Further information on storage conditions: Keep container tightly closed and dry; store in a cool place. Avoid direct sunlight.

8. Exposure Controls/Personal Protection

Personal protective equipment

Respiratory protection:
Wear respiratory protection if ventilation is inadequate. Respiratory protection in case of vapour/aerosol release.

Hand protection:
Chemical resistant protective gloves

Eye protection:
Safety glasses with side-shields. Wear face shield if splashing hazard exists.

Body protection:
Impermeable protective clothing

General safety and hygiene measures:
Handle in accordance with good industrial hygiene and safety practice.
9. Physical and Chemical Properties

Form: liquid
Odour: characteristic
Colour: colourless to yellowish
Glass transition temperature: -60 °C (OECD Guideline 102) none
Melting point: < -100 °C (OECD Guideline 102)
Boiling point: 252 °C
Flash point: 122 °C (Directive 92/69/EEC, A.9, open cup)
Flammability: not highly flammable

Lower explosion limit: For liquids not relevant for classification and labelling. The lower explosion point may be 5 - 15 °C below the flash point.
Upper explosion limit: For liquids not relevant for classification and labelling.
Autoignition: 446 °C (Directive 92/69/EEC, A.15)
Vapour pressure: 0.0057 hPa (20 °C) (OECD Guideline 104)
Density: 1.077 g/cm3 (20 °C) (OECD Guideline 109)
Relative density: 1.077 (OECD Guideline 109)
Partitioning coefficient n-octanol/water (log Pow): 1.62 (25 °C) (OECD Guideline 107)
Self-ignition temperature: Based on its structural properties the product is not classified as self-igniting.
Thermal decomposition: > 250 °C
Viscosity, dynamic: 25.0 mPa.s (20 °C) (OECD 114)
Viscosity, kinematic: 23.3 mm2/s (20 °C) (OECD 114)
Particle size: The substance / product is marketed or used in a non solid or granular form.
% volatiles: 0.5 % VOC concentration >0, <=3%
Solubility in water: 13.3 g/l (20 °C)
Molar mass: 164.20 g/mol

10. Stability and Reactivity

Reactivity
No hazardous reactions if stored and handled as prescribed/indicated.

Oxidizing properties:
Based on its structural properties the product is not classified as oxidizing.

Chemical stability
The product is stable if stored and handled as prescribed/indicated.

Possibility of hazardous reactions
No hazardous reactions when stored and handled according to instructions. The product is chemically stable.

Conditions to avoid
See MSDS section 7 - Handling and storage. Avoid direct sunlight.

Incompatible materials
strong acids, strong bases, strong oxidizing agents

Hazardous decomposition products
11. Toxicological information

Primary routes of exposure

Routes of entry for solids and liquids are ingestion and inhalation, but may include eye or skin contact. Routes of entry for gases include inhalation and eye contact. Skin contact may be a route of entry for liquefied gases.

Acute Toxicity/Effects

Acute toxicity
Assessment of acute toxicity: Of moderate toxicity after single ingestion. Virtually nontoxic after a single skin contact.

Oral
Type of value: LD50
Species: rat
Value: 1,694 mg/kg (OECD Guideline 423)

Inhalation
No data available.

Dermal
Type of value: LD50
Species: rat
Value: 6,929 mg/kg (OECD Guideline 402)

Assessment other acute effects
Assessment of STOT single:
Based on the available information there is no specific target organ toxicity to be expected after a single exposure.

Irritation / corrosion
Assessment of irritating effects: Not irritating to the skin. May cause slight irritation to the eyes.

Skin
Species: rabbit
Result: non-irritant
Method: OECD Guideline 404

Eye
Species: rabbit
Result: non-irritant
Method: OECD Guideline 405

Species: rabbit
Result: Slightly irritating.
Method: similar to OECD guideline 405

Sensitization
Assessment of sensitization: Skin sensitizing effects were not observed in animal studies.

Guinea pig maximization test
Species: guinea pig
Result: Non-sensitizing.
Method: OECD Guideline 406

Aspiration Hazard
No aspiration hazard expected.

Chronic Toxicity/Effects

Repeated dose toxicity
Assessment of repeated dose toxicity: May affect the liver as indicated in animal studies.

Information on: 1-Propanone, 2-hydroxy-2-methyl-1-phenyl-
Assessment of repeated dose toxicity: May affect the liver as indicated in animal studies.

Genetic toxicity
Assessment of mutagenicity: The substance was not mutagenic in bacteria. The substance was not
mutagenic in mammalian cell culture.
The substance was not genotoxic in mammalian cell culture.

Genetic toxicity in vitro: Modified OECD Guideline 471 Ames-test negative
OECD Guideline 476 Mammalian cell gene mutation assay CHO cells:with and without metabolic
activation negative
OECD Guideline 473 Chromosomal Aberration Test V79 cells:with and without metabolic activation
negative

Carcinogenicity
Assessment of carcinogenicity: No data available concerning carcinogenic effects.

Reproductive toxicity
Assessment of reproduction toxicity: No data available.

Teratogenicity
Assessment of teratogenicity: No data available.

Symptoms of Exposure
The most important known symptoms and effects are described in the labelling (see section 2)
and/or in section 11., Further important symptoms and effects are so far not known.

12. Ecological Information

Toxicity

Aquatic toxicity
Assessment of aquatic toxicity:
Acutely toxic for aquatic organisms. The inhibition of the degradation activity of activated sludge is
not anticipated when introduced to biological treatment plants in appropriate low concentrations.
Very toxic (acute effect) to aquatic organisms.

**Toxicity to fish**
LC50 (48 h) 160 mg/l, Leuciscus idus (DIN 38412 Part 15, static)  
The details of the toxic effect relate to the nominal concentration.

**Aquatic invertebrates**
EC50 (48 h) > 119 mg/l, Daphnia magna (OECD Guideline 202, part 1, static)  
The statement of the toxic effect relates to the analytically determined concentration.

**Aquatic plants**
EC50 (72 h) 1.95 mg/l (growth rate), Desmodesmus subspicatus (OECD Guideline 201, static)  
The statement of the toxic effect relates to the analytically determined concentration.

EC50 (72 h) 0.64 mg/l, Scenedesmus subspicatus (OECD Guideline 201, static)

**Chronic toxicity to fish**
Study scientifically not justified.

**Chronic toxicity to aquatic invertebrates**
Study scientifically not justified.

**Assessment of terrestrial toxicity**
Study scientifically not justified.

**Microorganisms/Effect on activated sludge**

**Toxicity to microorganisms**
OECD Guideline 209 aerobic  
activated sludge/EC10 (180 min): 450 mg/l

OECD Guideline 209 aerobic  
activated sludge/EC50 (180 min): > 1,000 mg/l

**Persistence and degradability**

**Assessment biodegradation and elimination (H2O)**
Readily biodegradable (according to OECD criteria).

**Elimination information**

90 - 100 % CO2 formation relative to the theoretical value (28 d) (OECD 301B; ISO 9439; 92/69/EEC, C.4-C) (aerobic)

**Assessment photodegradation**
After evaporation or exposure to the air, the product will be slowly degraded by photochemical processes.

**Bioaccumulative potential**

**Assessment bioaccumulation potential**
Because of the n-octanol/water distribution coefficient (log Pow) accumulation in organisms is not to be expected.

**Mobility in soil**

**Assessment transport between environmental compartments**
The substance will not evaporate into the atmosphere from the water surface.
Adsorption to solid soil phase is not expected.

Additional information

Other ecotoxicological advice:
Do not discharge product into the environment without control.

13. Disposal considerations

Waste disposal of substance:
Dispose of in accordance with national, state and local regulations. Do not discharge into drains/surface waters/groundwater.

Container disposal:
Recommend crushing, puncturing or other means to prevent unauthorized use of used containers. Dispose of in accordance with national, state and local regulations.

RCRA:
Not a hazardous waste under RCRA (40 CFR 261).

14. Transport Information

Land transport
USDOT
Not classified as a dangerous good under transport regulations

Sea transport
IMDG
Not classified as a dangerous good under transport regulations

Air transport
IATA/ICAO
Not classified as a dangerous good under transport regulations

15. Regulatory Information

VOC content:
VOC concentration >0, <=3%

Federal Regulations

Registration status:
Chemical TSCA, US released / listed

EPCRA 311/312 (Hazard categories): Acute; Chronic

State regulations

CA Prop. 65:
There are no listed chemicals in this product.
16. Other Information

SDS Prepared by:
BASF NA Product Regulations
SDS Prepared on: 2014/07/08

We support worldwide Responsible Care® initiatives. We value the health and safety of our employees, customers, suppliers and neighbors, and the protection of the environment. Our commitment to Responsible Care is integral to conducting our business and operating our facilities in a safe and environmentally responsible fashion, supporting our customers and suppliers in ensuring the safe and environmentally sound handling of our products, and minimizing the impact of our operations on society and the environment during production, storage, transport, use and disposal of our products.

Irgacure® 1173 (old Darocur® 1173) is a registered trademark of BASF Corporation or BASF SE

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