

Safety data sheet

Date of issue: December 6, 2005

1. Identification of the substance/preparation and of the company/undertaking*Identification of the product:*

Trade name: "Benzoflavone iodine fixative", article number B-74500 (100 ml)

Use of substance/preparation:

Fixative for latent fingerprints developed with iodine (Iodine fuming kit)

Company/undertaking identification:

Supplier: BVDA International b.v., Postbus 2323, 2002 CH HAARLEM, The Netherlands

Telephone: +31-23-5424708 Fax: +31-23-5322358 e-mail: info@bvda.nl

2. Composition/information on ingredients

This product is a preparation.

	CAS-Number	% w/w	Symbol	R-phrases	EC-Index-No.
Cyclohexane	110-82-7	84	F, N, Xn	11-38-50/53-65-67	601-017-00-1
Dichloromethane	75-09-2	16	Xn	40	602-004-00-3
7,8-Benzoflavone	604-59-1	<0.5	-	-	-

(Full text of R-phrases in heading 16)

3. Hazard identification

Highly flammable. Irritating to skin. Limited evidence of a carcinogenic effect. Very toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment. Harmful: may cause lung damage if swallowed. Vapours may cause drowsiness and dizziness.

4. First aid measures

After inhalation: fresh air. Apply mouth-to-mouth resuscitation or mechanical ventilation if necessary.

After skin contact: wash off with plenty of water. Remove contaminated clothing.

After eye contact: rinse out with plenty of water for at least 10 minutes with the eyelid held wide open. Call in ophthalmologist.

After swallowing: Immediately call in physician. Avoid vomiting (risk of aspiration!). Keep airways free.

Subsequently administer: paraffin oil (3 mg/kg, laxative), activated charcoal (20 – 40 g in 10% slurry).

Directions for physician: do not administer edible oils, milk or alcohol.

5. Fire fighting measuresSuitable extinguishing media: Water, CO₂, foam, powder.

Special risks: Combustible. Vapours heavier than air. Forms explosive mixtures with air at ambient temperatures.

Development of hazardous combustion gases or vapours possible in the event of fire. The following may develop in the event of fire: hydrogen chloride, phosgene.

Special protective equipment for fire fighting: Do not stay in dangerous zone without self-contained breathing apparatus.

Other information: Contain escaping vapours with water. Prevent fire-fighting water from entering surface water or groundwater.

6. Accidental release measures

Personal precautions: Do not inhale vapours/aerosols. Avoid substance contact. Ensure supply of fresh air in enclosed rooms.

Environmental precautions: Do not allow to enter sewerage system: risk of explosion!, surface water or groundwater.

Methods for cleaning up: Take up with liquid-absorbent material. Forward for disposal. Clean up affected area.

7. Handling and storage*Handling:*

Information for safe handling: Avoid generation of vapours/aerosols. Do not inhale substance. Use with adequate ventilation.

Information for prevention of fire and explosion: Take measures to prevent electrostatic charging. Keep away from sources of ignition - No smoking.

Storage: Tightly closed in a well-ventilated place, away from sources of ignition and heat. At +15 to +25° C.

8. Exposure controls/personal protection

Specific control parameter:

MAK Germany: Cyclohexane: 200 ml/m³ (700 mg/m³)
Dichloromethane: 100 ml/m³ (350 mg/m³)

Personal protective equipment:

Protective clothing should be selected specifically for the working place, depending on concentration and quantity of the hazardous substances handled. The resistance of the protective clothing to chemicals should be ascertained with the respective supplier.

Respiratory protection: required when vapours/aerosols are generated. Filter A (acc. To DIN 3181) for vapours of organic compounds.

Eye protection: required (safety goggles)

Hand protection: required (glove material: nitrile rubber, layer thickness: 0.40 mm, breakthrough time: > 480 min.)

Industrial hygiene: Change contaminated clothing. Application of skin-protective barrier cream recommended. Wash hands and face after working with the substance. Work under hood.

9. Physical and chemical properties

Form: liquid

Colour: colourless

Odour: characteristic

pH value (20° C): neutral

Melting point/range: not available

Boiling point/range: 40-81° C

Ignition temperature: not available

Flash point: not available

Explosion limits: lower: not available
upper: not available

Vapour pressure (20° C): not available

Density (20° C): 0.8 - 1.3 g/cm³

Solubility in water (dichloromethane, 20° C): 20 g/l

Solubility in organic solvents: soluble.

10. Stability and reactivity

Conditions to be avoided: strong heating

Substances to be avoided: alkali metals, alkaline earth metals, metals in powder form, alcoholates, alkali amides, oxidizing agent (i.a. perchlorates, CrO₃, nitric acid, nitrogen oxides, hydrogen peroxide), acids (i.a. concentrated sulfuric acid).

Hazardous decomposition products: hydrogen chloride, phosgene.

Further information: heat sensitive; light sensitive; explosible with air in a vaporous/gaseous state.

Unsuitable working materials: various plastics, rubber, light metals, metals, steel

11. Toxicological information

Acute toxicity:

Dichloromethane: LD₅₀ (oral, rat): 1600 mg/kg; LD₅₀ (inhalation, rat): 52 g/m³; LDLo (oral, human): 357 mg/kg.

Cyclohexane: LC₅₀ (inhalation, rat): 14 mg/l/4 h; LD₅₀ (dermal, rat): >2000 mg/kg, LD₅₀ (oral, rat): >5000 mg/kg.

Subacute to chronic toxicity:

The carcinogenic potential requires further clarification.

No impairment of reproductive performance in animal experiments.

No teratogenic effect in animal experiments.

Further toxicological information:

After inhalation: mucosal irritations; dizziness, drowsiness, nausea, coughing, vomiting.

In high concentrations: respiratory paralysis, unconsciousness collapse. Inhalation may lead to the formation of oedemas in the respiratory tract.

After skin contact: strong irritations. Degreasing effect on the skin, possibly followed by secondary inflammation.
 After eye contact: strong irritations. Risk of corneal clouding!
 After swallowing: gastric pain, gastrointestinal complaints. Risk of aspiration after vomiting. Damage of lungs.
 After absorption of large quantities: CNS disorders, drowsiness, dizziness, drop in blood pressure, cardiac dysrhythmia, respiratory paralysis, depressed respiration, inebriation, narcosis.

Further data:

Further hazardous properties cannot be excluded. The product should be handled with the care usual when dealing with chemicals

12. Ecological information

Behavior in environmental compartments:

An appreciable bioaccumulation potential is to be expected.

Ecotoxic effects:

Biological effects: Highly toxic for aquatic organisms. May cause long-term adverse effects in the aquatic environment. Endangers drinking-water supplies if allowed to enter soil and/or waters in large quantities. Change in flavour characteristics of fish protein.

Cyclohexane:

Fish toxicity: *L. macrochirus* LC₅₀: 34 mg/l/96 h;

Daphnia toxicity: *Daphnia magna* EC₅₀: 3.78 mg/l/48 h;

Algal toxicity: *Desmodesmus subspicatus* IC₅₀: >500 mg/l/72 h;

Bacterial toxicity: *Photobacterium phosphoreum* EC₅₀: 200 mg/l/5 min microtox test.

Dichloromethane:

Fish toxicity: *P. promelas* LC₅₀: 310 mg/l/96 h; *L. macrochirus* LC₅₀: 220 mg/l/96 h;

Daphnia toxicity: *Daphnia magna* EC₅₀: 1682 mg/l/48 h;

Algal toxicity: *Selenastrum capricornutum* IC₅₀: >660 mg/l/96 h;

Bacterial toxicity: *Photobacterium phosphoreum* EC₅₀: 1000-2880 mg/l/15 min microtox test.

Further ecologic data:

Do not allow to enter waters, waste water, or soil!

13. Disposal considerations

Product:

There are no uniform EC Regulations for the disposal of chemicals or residues. Chemical residues generally count as special waste. The disposal of the latter is regulated in the EC member countries through corresponding laws and regulations. We recommend that you contact either the authorities in charge or approved waste disposal companies which will advise you on how to dispose of special waste.

Packaging:

Disposal in compliance with official regulations. Handle contaminated packaging in the same way as the substance itself. If not officially specified differently, non-contaminated packaging may be treated like household waste or recycled.

14. Transport information

Land transport ADR, RID

UN 1992 FLAMMABLE LIQUID, TOXIC, N.O.S. (Contains cyclohexane, dichloromethane), 3, II

Transport by river ADN, ADNR not tested

Transport by sea IMDG, GGVSee

UN 1992 FLAMMABLE LIQUID, TOXIC, N.O.S. (Contains cyclohexane, dichloromethane), 3, II

Transport by air CAO, PAX

FLAMMABLE LIQUID, TOXIC, N.O.S. (Contains cyclohexane, dichloromethane), 3, UN 1992, II

15. Regulatory information

Labelling according to EC Directives:

Symbols: F, Xn, N

Description: Highly flammable, harmful, dangerous for the environment.

Contains: Cyclohexane (EC-No:203-806-2)
 Dichloromethane (EC-No:200-838-9)
 7,8-Benzoflavone (EC-No:210-071-1)

R-phrases: R 11-38-40-50/53-65-67 "Highly flammable. Irritating to skin. Limited evidence of a carcinogenic effect. Very toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment. Harmful: may cause lung damage if swallowed. Vapours may cause drowsiness and dizziness."

S-phrases: S 9-16-23-51-61-62 "Keep container in a well-ventilated place. Keep away from sources of ignition - No smoking. Do not breathe vapour. Use only in well-ventilated areas. Avoid release to the environment. Refer to special instructions/safety data sheets. If swallowed, do not induce vomiting: seek medical advice immediately and show this container or label."

16. Other information

Text of any R-phrases referred to under heading 2:

11	Highly flammable.
38	Irritating to skin.
40	Limited evidence of a carcinogenic effect.
50/53	Very toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.
65	Harmful: may cause lung damage if swallowed.
67	Vapours may cause drowsiness and dizziness.

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