

# I U C L I D

# D a t a s e t

Existing Chemical	Substance ID: 95-16-9
CAS No.	95-16-9
EINECS Name	benzothiazole
EINECS No.	202-396-2
Molecular Weight	135.2
Molecular Formula	C7H5NS

Dataset created by: EUROPEAN COMMISSION - European Chemicals Bureau

This dossier is a compilation based on data reported by the European Chemicals Industry following 'Council Regulation (EEC) No. 793/93 on the Evaluation and Control of the Risks of Existing Substances'. All (non-confidential) information from the single datasets, submitted in the IUCLID/HEDSET format by individual companies, was integrated to create this document.

The data have not undergone any evaluation by the European Commission.

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**1.0.1 OECD and Company Information**

**Name:** Bayer Antwerpen N.V.  
**Street:** Haven 507, Scheldelaan 420  
**Town:** Antwerpen  
**Country:** Belgium

**Name:** Flexsys S.A.  
**Street:** Woluwe Garden, Woluwedal 24  
**Town:** B-1932 St.-Stevens-Woluwe  
**Country:** Netherlands  
**Phone:** +32 (2) 714 32 25  
**Telefax:** +32 (2) 714 32 35

**Name:** GENERAL QUIMICA, S.A.  
**Street:** Km.4 Ctra. de Miranda a PuenteIarrá  
**Town:** 01213 LANTARON COMUNION (ALAVA)  
**Country:** Spain  
**Phone:** 947-31 01 45  
**Telefax:** 947-31 38 88  
**Telex:** 39531

**1.0.2 Location of Production Site**

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**1.0.3 Identity of Recipients**

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**1.1 General Substance Information**

**Substance type:** organic  
**Physical status:** liquid

**1.1.1 Spectra**

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**1.2 Synonyms**

1-Thia-3-azaindene

**Source:** Flexsys S.A. St.-Stevens-Woluwe  
Bayer Antwerpen N.V. Antwerpen

Benzosulfonazole

**Source:** Flexsys S.A. St.-Stevens-Woluwe  
Bayer Antwerpen N.V. Antwerpen  
GENERAL QUIMICA, S.A. LANTARON COMUNION (ALAVA)

Benzothiazole (6CI, 8CI, 9CI)

**Source:** Flexsys S.A. St.-Stevens-Woluwe

BTH

**Source:** Flexsys S.A. St.-Stevens-Woluwe

Rubator BT

**Source:** GENERAL QUIMICA, S.A. LANTARON COMUNION (ALAVA)**1.3 Impurities**

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**1.4 Additives**

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**1.5 Quantity**

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**1.6.1 Labelling**

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**1.6.2 Classification**

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**1.7 Use Pattern**

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**1.7.1 Technology Production/Use**

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**1.8 Occupational Exposure Limit Values****Type of limit:** other: Bayer Antwerpen N.V.**Limit value:** .9 ml/m3**Remark:** 5 mg/m3**Source:** Bayer Antwerpen N.V. Antwerpen**Type of limit:****Limit value:****Remark:** No occupational exposure limit values have been established for this compound.**Source:** Flexsys S.A. St.-Stevens-Woluwe**1.9 Source of Exposure**

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**1.10.1 Recommendations/Precautionary Measures**

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**1.10.2 Emergency Measures**

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**1.11 Packaging**

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**1.12 Possib. of Rendering Subst. Harmless**

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**1.13 Statements Concerning Waste**

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**1.14.1 Water Pollution**

Classified by: KBWS (DE)  
Labelled by: KBWS (DE)  
Class of danger: 2 (water polluting)  
Remark: id.no.: 1376  
Source: Flexsys S.A. St.-Stevens-Woluwe

**1.14.2 Major Accident Hazards**

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**1.14.3 Air Pollution**

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**1.15 Additional Remarks**

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**1.16 Last Literature Search**

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**1.17 Reviews**

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**1.18 Listings e.g. Chemical Inventories**

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**2.1 Melting Point**

**Value:** ca. 2 degree C  
**Source:** Bayer Antwerpen N.V. Antwerpen (1)

**2.2 Boiling Point**

**Value:** ca. 230 degree C  
**Source:** Bayer Antwerpen N.V. Antwerpen (1)

**2.3 Density**

**Type:** density  
**Value:** ca. 1.246 at 20 degree C  
**Source:** Bayer Antwerpen N.V. Antwerpen (1)

**2.3.1 Granulometry**

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**2.4 Vapour Pressure**

**Value:** ca. .13 hPa at 20 degree C  
**Source:** Bayer Antwerpen N.V. Antwerpen (1)

**Value:** ca. .95 hPa at 50 degree C  
**Source:** Bayer Antwerpen N.V. Antwerpen (1)

**2.5 Partition Coefficient**

**log Pow:** 2  
**Method:** other (calculated): Leo, Hansch: Leo, A. CLOGP-3.63 (1991)  
Daylight, Chemical Information Systems Inc. Irvine, CA, USA  
**Year:**  
**Source:** Bayer Antwerpen N.V. Antwerpen (2)

**log Pow:** 2.01  
**Method:** other (measured)  
**Year:**  
**Source:** Bayer Antwerpen N.V. Antwerpen (3)

### **2.6.1 Water Solubility**

**Value:** ca. 3 g/l at 20 degree C  
**Source:** Bayer Antwerpen N.V. Antwerpen

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### **2.6.2 Surface Tension**

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### **2.7 Flash Point**

**Value:** ca. 107 degree C  
**Type:**  
**Method:** other: DIN 51758  
**Year:**  
**Source:** Bayer Antwerpen N.V. Antwerpen

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### **2.8 Auto Flammability**

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### **2.9 Flammability**

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### **2.10 Explosive Properties**

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### **2.11 Oxidizing Properties**

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### **2.12 Additional Remarks**

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### 3.1.1 Photodegradation

**Type:** air  
**Method:** other (calculated): acc. to Atkinson: SRC-AOP for Microsoft Windows  
**Year:** **GLP:**  
**Test substance:**  
**Remark:** Sensitizer: OH  
Conc. of Sensitizer: 0.5E6 OH/cm3  
Rate Constant: 7.0E-12 cm3/molecule x sec  
Half life time: 4.584 d  
**Source:** Bayer Antwerpen N.V. Antwerpen

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### 3.1.2 Stability in Water

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### 3.1.3 Stability in Soil

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### 3.2 Monitoring Data (Environment)

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### 3.3.1 Transport between Environmental Compartments

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### 3.3.2 Distribution

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### 3.4 Mode of Degradation in Actual Use

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### 3.5 Biodegradation

**Type:** aerobic  
**Inoculum:** predominantly domestic sewage  
**Concentration:** .8 mg/l  
**Degradation:** > 65 % after 21 day  
**Method:** OECD Guide-line 301 D "Ready Biodegradability: Closed Bottle Test"  
**Year:** 1984 **GLP:** no  
**Test substance:**  
**Source:** Bayer Antwerpen N.V. Antwerpen

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**Type:** aerobic  
**Inoculum:** other: sludge samplings from different sewage plants, rivers, bays and a lake  
**Concentration:** 100 mg/l related to Test substance  
**Degradation:** 0 % after 28 day  
**Method:** other: see remarks  
**Year:** **GLP:** no data  
**Test substance:**  
**Remark:** related to BOD  
sludge conc.: 30 mg/l  
Method:  
"Biodegradation test of chemical substance by microorganisms etc." stipulated in the Order Prescribing the Items of the Test Relating to the New Chemical Substance (1974, Order of the Prime Minister, Minister of Health and Welfare, the MITI No. 1). This guideline corresponds to "301C, Ready Biodegradability: Modified MITI Test I" stipulated in the OECD Guidelines for Testing of Chemicals (May 12, 1981).  
**Source:** Bayer Antwerpen N.V. Antwerpen

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### 3.6 BOD5, COD or BOD5/COD Ratio

**Remark:** ThOD: 2553 mg/g  
COD: 2157 mg/g  
**Source:** Bayer Antwerpen N.V. Antwerpen

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### 3.7 Bioaccumulation

**Species:** Cyprinus carpio (Fish, fresh water)  
**Exposure period:** 42 day  
**Concentration:**  
**BCF:**  
**Elimination:**  
**Method:**  
**Year:** **GLP:** no data  
**Test substance:**

**Remark:**

Conc. (mg/l)	BCF
0.2	2.1-5.1
0.02	< 4.1-7.5
% lipid, average 4.0	

Method:

"Bioaccumulation test of chemical substance in fish and shellfish" stipulated in the Order Prescribing the Items of the Test Relating to the New Chemical Substance (1974, Order of the Prime Minister, the Minister of Health and Welfare, the MITI No. 1). This guideline corresponds to "305C, Bioaccumulation: Degree of Bioconcentration in Fish" stipulated in the OECD Guidelines for Testing of Chemicals (May 12, 1981).

**Source:** Bayer Antwerpen N.V. Antwerpen

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**3.8 Additional Remarks**

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**AQUATIC ORGANISMS****4.1 Acute/Prolonged Toxicity to Fish**

**Type:** flow through  
**Species:** Pimephales promelas (Fish, fresh water)  
**Exposure period:** 96 hour(s)  
**Unit:** mg/l **Analytical monitoring:** yes  
**LC50:** 64  
**Method:**  
**Year:** 1989 **GLP:**  
**Test substance:** other TS: > 96 %  
**Remark:** 96h-EC50: 60.7 mg/l  
 Analytical monitoring: GLC  
**Source:** Bayer Antwerpen N.V. Antwerpen (7)

**Type:** static  
**Species:** Brachydanio rerio (Fish, fresh water)  
**Exposure period:** 96 hour(s)  
**Unit:** mg/l **Analytical monitoring:** no  
**LC0:** 65.5  
**LC100:** 66  
**Method:** other: DIN 38 412, Teil 15: Bestimmung der Wirkung von  
 Wasserinhaltsstoffen auf Fische, Fischtest (L 15) (Juni 1982)  
**Year:** 1984 **GLP:** no  
**Test substance:**  
**Source:** Bayer Antwerpen N.V. Antwerpen (5)

**Type:**  
**Species:** Oryzias latipes (Fish, fresh water)  
**Exposure period:** 48 hour(s)  
**Unit:** mg/l **Analytical monitoring:**  
**LC50:** 87.2  
**Method:** other: Japanese Industrial Standard (JIS K 0102-1986-71)  
 "Testing methods for industrial waste water"  
**Year:** **GLP:** no data  
**Test substance:**  
**Source:** Bayer Antwerpen N.V. Antwerpen (6)

**Type:**  
**Species:** Oryzias latipes (Fish, fresh water)  
**Exposure period:** 48 hour(s)  
**Unit:** mg/l **Analytical monitoring:**  
**LC50:** 110  
**Method:**  
**Year:** **GLP:** no  
**Test substance:**  
**Remark:** QSAR calculation  
**Source:** Bayer Antwerpen N.V. Antwerpen (8)

**4.2 Acute Toxicity to Aquatic Invertebrates**

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**4.3 Toxicity to Aquatic Plants e.g. Algae**

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**4.4 Toxicity to Microorganisms e.g. Bacteria**

**Type:** aquatic  
**Species:** activated sludge  
**Exposure period:** 3 hour(s)  
**Unit:** mg/l **Analytical monitoring:** no  
**EC50:** 635  
**EC05 :** 216  
**Method:** ISO 8192 "Test for inhibition of oxygen consumption by activated sludge"  
**Year:** 1990 **GLP:** no  
**Test substance:**  
**Source:** Bayer Antwerpen N.V. Antwerpen

(5)

**Type:** aquatic  
**Species:** Pseudomonas putida (Bacteria)  
**Exposure period:** 30 minute(s)  
**Unit:** mg/l **Analytical monitoring:** no  
**LC0 :** 250  
**Method:** other: Bewertung toxischer Wasserinhaltsstoffe aus ihrer Inhibitorwirkung auf die Substratoxydation von Pseudomonas Stamm Berlin mit Hilfe polarographischer Sauerstoffmessungen. Robra, K.H.: gwf wasser/abwasser 117(2), 80-86 (1976)  
**Year:** 1984 **GLP:** no  
**Test substance:**  
**Source:** Bayer Antwerpen N.V. Antwerpen

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**Type:** aquatic  
**Species:** Pseudomonas putida (Bacteria)  
**Exposure period:** 18 hour(s)  
**Unit:** mg/l **Analytical monitoring:** no  
**LC0 :** 50  
**Method:**  
**Year:** 1990 **GLP:** no  
**Test substance:**  
**Remark:** Method:  
 Grenzwerte der Schadwirkung wassergefaehrdender Stoffe gegen Bakterien (Pseudomonas putida) und Gruenalgen (Scenedesmus quadricauda) im Zellvermehrungshemmtest. Bringmann, G.; Kuehn, R.: Z. f. Wasser- und Abwasser-Forschung 10 (3/4), 87-98 (1977)  
**Source:** Bayer Antwerpen N.V. Antwerpen

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**Type:** aquatic  
**Species:** Tetrahymena pyriformis (Protozoa)  
**Exposure period:** 24 hour(s)  
**Unit:** mg/l **Analytical monitoring:** no data  
**EC50:** 160  
**Method:** other: static at 30 degrees C  
**Year:** **GLP:** no data  
**Test substance:** other TS: analytical grade  
**Source:** Bayer Antwerpen N.V. Antwerpen

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**Type:**  
**Species:** activated sludge  
**Exposure period:** 3 hour(s)  
**Unit:** mg/l **Analytical monitoring:**  
**EC50:** 650  
**Method:** OECD Guide-line 209 "Activated Sludge, Respiration Inhibition Test"  
**Year:** **GLP:**  
**Test substance:**  
**Source:** Bayer Antwerpen N.V. Antwerpen

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#### **4.5 Chronic Toxicity to Aquatic Organisms**

##### **4.5.1 Chronic Toxicity to Fish**

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##### **4.5.2 Chronic Toxicity to Aquatic Invertebrates**

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#### **TERRESTRIAL ORGANISMS**

##### **4.6.1 Toxicity to Soil Dwelling Organisms**

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##### **4.6.2 Toxicity to Terrestrial Plants**

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##### **4.6.3 Toxicity to other Non-Mamm. Terrestrial Species**

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##### **4.7 Biological Effects Monitoring**

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##### **4.8 Biotransformation and Kinetics**

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**4.9 Additional Remarks**

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**5.1 Acute Toxicity****5.1.1 Acute Oral Toxicity**

**Type:** LD50  
**Species:** rat  
**Sex:**  
**Number of Animals:**  
**Vehicle:**  
**Value:** = 479 mg/kg bw  
**Method:** other  
**Year:** 1986 **GLP:** yes  
**Test substance:** other TS  
**Remark:** value = 493.3 mg/kg (m), 465.6 mg/kg (f)  
**Source:** Bayer Antwerpen N.V. Antwerpen  
**Test substance:** purity: 99 %

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**Type:** LD50  
**Species:** rat  
**Sex:**  
**Number of Animals:**  
**Vehicle:**  
**Value:** = 257 mg/kg bw  
**Method:** other  
**Year:** 1982 **GLP:** no  
**Test substance:** no data  
**Remark:** value = 0.206 ml/kg; density: 1.246 g/l; male rat  
**Source:** Bayer Antwerpen N.V. Antwerpen

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**Type:** LD50  
**Species:** rat  
**Sex:**  
**Number of Animals:**  
**Vehicle:**  
**Value:** = 177 mg/kg bw  
**Method:** other  
**Year:** 1982 **GLP:** no  
**Test substance:** no data  
**Remark:** value = 0.142 ml/kg; density: 1.246 g/l; female rat  
**Source:** Bayer Antwerpen N.V. Antwerpen

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**Type:** LD50  
**Species:** rat  
**Sex:**  
**Number of Animals:**  
**Vehicle:**  
**Value:**  
**Method:** other  
**Year:** **GLP:** no data  
**Test substance:** no data  
**Remark:** dependent on the number of animals in each dose group LD50 values from 180 (1 rat/dose) to 375 mg/kg (5 rats/dose) were calculated  
**Source:** Bayer Antwerpen N.V. Antwerpen (13)

**Type:** LD50  
**Species:** mouse  
**Sex:**  
**Number of Animals:**  
**Vehicle:**  
**Value:** = 900 mg/kg bw  
**Method:** other  
**Year:** **GLP:** no data  
**Test substance:** no data  
**Source:** Bayer Antwerpen N.V. Antwerpen (14)

**Type:** other  
**Species:** cat  
**Sex:**  
**Number of Animals:**  
**Vehicle:**  
**Value:**  
**Method:** other  
**Year:** 1985 **GLP:** no  
**Test substance:** other TS  
**Remark:** 2 cats, 25 mg/kg with gavage: slightly elevated MetHb concentration (up to ca. 10 % after 3 hours), no effect after 7 hours; up to 100 % of the erythrocytes with Heinz bodies  
**Source:** Bayer Antwerpen N.V. Antwerpen  
**Test substance:** purity: ca. 98 % (15)

### 5.1.2 Acute Inhalation Toxicity

**Type:** LC50  
**Species:** rat  
**Sex:**  
**Number of Animals:**  
**Vehicle:**  
**Exposure time:** 4 hour(s)  
**Value:** ca. 5 mg/l  
**Method:** OECD Guide-line 403 "Acute Inhalation Toxicity"  
**Year:** 1992 **GLP:** yes  
**Test substance:** other TS  
**Remark:** the following analytical concentrations were tested: 0.377 mg/l (vapour); 2.36 mg/l (aerosol) and 6.154 mg/l (aerosol) (analytical aerosol concentration)  
**Source:** Bayer Antwerpen N.V. Antwerpen  
**Test substance:** purity: 97.4 %

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**Type:** other: LC  
**Species:** rat  
**Sex:**  
**Number of Animals:**  
**Vehicle:**  
**Exposure time:** 6 hour(s)  
**Value:** > 1.5 mg/l  
**Method:** other: no data  
**Year:** **GLP:** no data  
**Test substance:** no data  
**Source:** Bayer Antwerpen N.V. Antwerpen

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### 5.1.3 Acute Dermal Toxicity

**Type:** LD50  
**Species:** rat  
**Sex:**  
**Number of Animals:**  
**Vehicle:**  
**Value:**  
**Method:** other: Directive 84/449EEC, B.3.  
**Year:** 1992 **GLP:** yes  
**Test substance:** other TS  
**Remark:** value: 1231 mg/kg (m), 933 mg/kg (f)  
NOEL = 500 mg/kg  
**Source:** Bayer Antwerpen N.V. Antwerpen  
**Test substance:** purity: 97.4 %

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Type: LD50  
Species: rabbit  
Sex:  
Number of  
Animals:  
Vehicle:  
Value: > 631 mg/kg bw  
Method: other: no data  
Year: GLP: no data  
Test substance: no data  
Source: Bayer Antwerpen N.V. Antwerpen

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#### **5.1.4 Acute Toxicity, other Routes**

Type: LD50  
Species: mouse  
Sex:  
Number of  
Animals:  
Vehicle:  
Route of admin.: i.p.  
Value: ca. 100 - 200 mg/kg bw  
Method: other: no data  
Year: GLP: no data  
Test substance: no data  
Source: Bayer Antwerpen N.V. Antwerpen

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Type: LD50  
Species: mouse  
Sex:  
Number of  
Animals:  
Vehicle:  
Route of admin.: i.v.  
Value: = 95 mg/kg bw  
Method: other: no data  
Year: GLP: no data  
Test substance: no data  
Source: Bayer Antwerpen N.V. Antwerpen

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**Type:** LDLo  
**Species:** other  
**Sex:**  
**Number of Animals:**  
**Vehicle:**  
**Route of admin.:** other  
**Value:**  
**Method:** other: no data  
**Year:** **GLP:** no data  
**Test substance:** no data  
**Remark:** cat, i.v. 100 mg/kg; rat, i.v. 200-300 mg/kg;  
rat, i.p. 1000 mg/kg; rat, oral 3000 mg/kg  
**Source:** Bayer Antwerpen N.V. Antwerpen

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**Type:** LD50  
**Species:** mouse  
**Sex:**  
**Number of Animals:**  
**Vehicle:**  
**Route of admin.:** other: no data  
**Value:** = 310 mg/kg bw  
**Method:** other: no data  
**Year:** **GLP:** no data  
**Test substance:** no data  
**Source:** Bayer Antwerpen N.V. Antwerpen

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## **5.2 Corrosiveness and Irritation**

### **5.2.1 Skin Irritation**

**Species:** rabbit  
**Concentration:**  
**Exposure:**  
**Exposure Time:**  
**Number of Animals:**  
**PDII:**  
**Result:** not irritating  
**EC classificat.:**  
**Method:** OECD Guide-line 404 "Acute Dermal Irritation/Corrosion"  
**Year:** 1983 **GLP:** no  
**Test substance:** no data  
**Source:** Bayer Antwerpen N.V. Antwerpen

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### 5.2.2 Eye Irritation

Species: rabbit  
Concentration:  
Dose:  
Exposure Time:  
Comment:  
Number of  
Animals:  
Result: irritating  
EC classificat.:  
Method: OECD Guide-line 405 "Acute Eye Irritation/Corrosion"  
Year: 1983 GLP: no  
Test substance: no data  
Source: Bayer Antwerpen N.V. Antwerpen

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### 5.3 Sensitization

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### 5.4 Repeated Dose Toxicity

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### 5.5 Genetic Toxicity 'in Vitro'

Type: Ames test  
System of  
testing: S. typhimurium TA 98, TA 100, TA 1535, TA 1537  
Concentration: up to 5000 ug/plate  
Metabolic  
activation: with and without  
Result: negative  
Method: other: see remark  
Year: 1991 GLP: yes  
Test substance: other TS  
Remark: method: as described by Ames, B.N. et al., Proc. nat. Acad. Sci. (USA) 70, 2281-2285 (1973); Ames, B.N. et al., Mutat. Res. 31, 347-364 (1975) and Maron, D.M. & Ames, B.N., Mutat. Res. 113, 173-215 (1983)  
Source: Bayer Antwerpen N.V. Antwerpen  
Test substance: purity: 97.4 %

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### 5.6 Genetic Toxicity 'in Vivo'

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### 5.7 Carcinogenicity

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### 5.8 Toxicity to Reproduction

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**5.9 Developmental Toxicity/Teratogenicity**

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**5.10 Other Relevant Information**

**Type:** other  
**Remark:** generation of chapter 5: July, 1994  
**Source:** Bayer Antwerpen N.V. Antwerpen

**Type:** other: Paralyzing potency  
**Remark:** mouse, i.v.: median paralyzing dose (PD50) = 68 mg/kg  
**Source:** Bayer Antwerpen N.V. Antwerpen  
**Test substance:** no data

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**5.11 Experience with Human Exposure**

**Remark:** Upon the flexor surface of the left wrist of 43 subjects (5f/38m) approx. 25 mg/kg were placed; 17 subjects with positive reactions (no further information)  
**Source:** Bayer Antwerpen N.V. Antwerpen  
**Test substance:** other TS

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- (1) Safety Data Sheet Bayer AG
- (2) Calculation Bayer AG, WV-UWS
- (3) THOR database Pomona 89, MedChemSoftware 1989, Daylight, Chemical Information Systems, Claremont, CA 91711, USA
- (4) Calculation Bayer AG, WV-UWS/Produktsicherheit 1995
- (5) Bayer AG data
- (6) Biodegradation and Bioaccumulation Data of Existing Chemicals Based on the CSCL Japan, Compiled under the Supervision of Chemical Products Safety Division, Basic Industries Bureau MITI, Ed. by CITI, October 1992. Published by Japan Chemical Industry Ecology-Toxicology & Information Center
- (7) Geiger, D.L. et al., Acute Toxicities of Organic Chemicals to Fathead Minnows (*Pimephales promelas*) Vol. V, Center for Lake Superior Environmental Studies, University of Wisconsin-Superior, WI, ISBN 0-9614968-5-1 (1990)
- (8) Yoshioka, Y. et al., *Ecotox. Environ. Saf.* 12 (3), 206-212 (1986)
- (9) Yoshioka, Y. et al., *The Science of the Total Environment* 43, 149-157 (1985)
- (10) Mayhew, D.A. et al., American Biogenics Corporation, AD-A172-647 September 1986
- (11) Loeser, E., Untersuchungen zur akuten oralen Toxizitaet an maennlichen Ratten, July 27, 1982
- (12) Loeser, E., Untersuchungen zur akuten oralen Toxizitaet an weiblichen Ratten, July 29, 1982
- (13) Lorke, D., *Arch. Toxicol.* 54, 275-287 (1983)
- (14) Moran, E.J. & Easterday, O.D., *Drug Chem. Toxicol.* 3, 249-258 (1980)
- (15) Schmidt, W.M. & Loeser, E., Untersuchungen zur akuten oralen Toxizitaet an der Katze, December 20, 1985
- (16) Bayer AG data, Report No. 21675, September 16, 1992
- (17) United States EPA, Office of Pesticides and Toxic Substances. 8EHQ-1190-0987S, cited in RTECS April 1994
- (18) Bayer AG data, Report No. 20998, January 21, 1992

- (19) Doull, J. et al., AD277-689, 1-124 (1962)
- (20) Domino, E.F. et al., J. Pharm. Exp. Ther. 105, 486-497 (1952)
- (21) Bogert, M.T. & Husted, H.G., J. Pharm. Exp. Ther. 45, 189-207 (1932)
- (22) Anonymous, Khimiko Farmatsevticheskii Zhurnal 9 (12), 11 (1975), cited in RTECS April 1994
- (23) Suberg, H., Untersuchungen auf primaere Reiz-/Aetzwirkung an der Kaninchenhaut, January 3, 1983
- (24) Suberg, H., Untersuchungen auf Schleimhautreizwirkung am Kaninchenauge, January 3, 1983
- (25) Bayer AG data, Report No. 20847, November 26, 1991

**7.1 Risk Assessment**

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