HAZARDOUS SUBSTANCE ECOLOGICAL FACT SHEET

U.S. Environmental Protection Agency
Office of Toxic Substances

Chemical Name: o-Anisidine
CAS Number: 90-04-0

GENERAL INFORMATION

o-Anisidine is a yellowish liquid which becomes brownish with exposure to air. It is used in the manufacture of azo dyes. It is moderately soluble in water, and may enter the aquatic environment via discharges from chemical industries where it is manufactured or used, and spills.

ACUTE (SHORT-TERM) ECOLOGICAL EFFECTS

Acute or short-term ecological effects are severe effects upon aquatic animals or plants, such as death or complete immobilization, which occur following exposure to a chemical in water for a relatively short period of time, such as four days or less. o-Anisidine is considered to have moderate acute toxicity to aquatic life.

CHRONIC (LONG-TERM) ECOLOGICAL EFFECTS

Chronic or long-term ecological effects are generally subtle effects upon aquatic animals or plants, such as reductions in long-term survival, growth, or reproduction; or changes in appearance or behavior following exposure to a chemical in water for a sufficient period of time to include either a complete life-cycle or a significant portion of a life-cycle. o-Anisidine is considered to have slight chronic or long-term toxicity to aquatic life.

DISTRIBUTION AND PERSISTENCE IN THE ENVIRONMENT

The chemical properties of o-anisidine indicate that, after a sufficient amount of time, it will tend to be distributed in the environment as follows:

air	2.84%
soil	0.08%
water	97.01%
suspended solids	< 0.01%
aquatic biota	< 0.01%
sediment	0.07%

o-Anisidine will probably be slightly persistent in aquatic ecosystems.

BIOACCUMULATION IN AQUATIC ORGANISMS

The concentration of o-anisidine in edible tissues of most aquatic species that are consumed by humans will probably be about the same as the average concentration that was present in the water in which the organisms had been living.

U.S. Environmental Protection Agency
Environmental Research Laboratory-Duluth

I. Chemical Identification

Name Benzenamine, 2-methoxy-

CAS number 90-04-0
Formula C7 H9 N O

II. Chemical and Physical Properties from QSAR

(All temperature sensitive values assume 25 C)

Molecular Weight (g/mole) = 123.2
Melting Point (C) = 5.00
Boiling Point (C) = 225.
Vapor Pressure (mm of Hg) = 0.212
Ht Vaporization (cal/mole)= 1.17E+04
Solubility in Water (mg/L)= 4.12E+04
Log P = 1.02
pKa = 4.58

III. Information from QSAR concerning Exposure and Fate

Bioconcentration Factor = 2.53
Log(BCF) = 0.404 See Veith and Kosian 1983

Absorption Coef. Log(Koc) = 1.89 See Lyman et al. 1982

Hydrolysis Half-Life > 1000 days

Hydrolysis is not likely to be an important transformation mechanism for this chemical

Henry's Constant = 8.35E-07 atm-m**3/mole
Log10 (Henry's Constant) = -6.08 atm-m**3/mole

Lyman et al. 1982. would conclude that a chemical with these properties will volatilize slowly from open water. See page 15-15.

Mackay Level 1 Environmental Partitioning @25 C Fugacity = 1.172E-06 Pa
2.84 % into air
0.08 % into soil
97.01 % into water
0.00 % into suspended solids
0.00 % into aquatic biota
0.07 % into sediment

Biodegradation Half-life Analysis

***** QSAR OPENED SUBFILE 2 FOR AROMATIC CHEMICALS *****
EVALUATIONS OF DEGRADATION WITHIN THIS SUBFILE WERE BASED ON 86 OR ABOUT 32 % OF THE CHEMICALS IN THE DATA BASE.

THERE ARE 25 CHEMICALS IN THE DEGRADATION DATA BASE WITH A BENZENE RING AND A LOGP OF < 2.18. HALF-LIFE FOR ALL THESE CHEMICALS RANGE FROM 2 TO 16 DAYS.

IV. Toxicological Information from QSAR

Toxicity to the fathead minnow

LC50	(mg/L)	= 57.9
MATC	(mg/L)	= 14.5

Phytotoxicity Assessment

The rules for distinguishing substructures which may have inhibitory effects on plant growth and development are being formulated by Dr. Fumihiko Hayashi of the Office of Toxic Substances, Washington, D.C. HERD/EEB Room E431 Phone (202)382-4278.

This chemical does not contain structural features which the QSAR SYSTEM now regards as highly toxic to algae or aquatic plants.

Genetic/Mutagenic Assessment

This is O-ANISIDINE HYDROCHLORIDE which is CARCINOGENIC.
Detailed information on the carcinogenicity of this compound may be found in: a) IARC Monograph on the Evaluation of the Carcinogenic Risk of International Agency for Research on Cancer, Lyon, France, 1982; and b) Nesnow, S., et al.,, "Chemical Carcinogens: A Review and Analysis of the Literature of Selected Chemicals and the Establishment of the Gene-Tox Carcinogen Data Base", Mutation Research, in press.

V. AQUIRE SUMMARY

Name Benzenamine, 2-methoxy-

CAS number 90-04-0

There is no data in AQUIRE for this chemical