

OHIO EPA SURFACE WATER QUALITY CRITERION FACT SHEET

Page 1 of 3

Chemical Name: SAS-310 (free, non-encapsulated) Developed by: Chris J. SkalskiCAS # 1016-46-63-3 & 101-646-62-2 & 1428-28-65-7 Data Retrieval Date: 3-2-05Internal Code # -- Fact Sheet Preparation Date: 3-17-05Reviewed by: Bob HeitzmanACUTE DATA

<u>SPECIES</u>	<u>EC₅₀/LC₅₀</u> (<u>µg/l</u>)	<u>TEST TYPE^a</u>	<u>DURATION</u> (<u>HOURS</u>)	<u>SMAV^b</u> (<u>µg/l</u>)	<u>GMAV^b</u> (<u>µg/l</u>)	<u>REFERENCE</u> <u>NUMBER</u>
Cladoceran <i>Daphnia magna</i>	87.2	S,M	48	87.2	87.2	1
Cladoceran <i>Ceriodaphnia dubia</i>	79	S,U	48	79	79	2
Fathead Minnow <i>Pimephales promelas</i>	>1,000,000 ^c	S,U	48			2
Rainbow Trout <i>Oncorhynchus mykiss</i>	>100	R,M	96	>100	>100	7

^a S = static; R = renewal; U = unmeasured; M = measured.^b SMAV = Species Mean Acute Value; GMAV = Genus Mean Acute Value.^c Data not used to calculate an SMAV since the test exposure period was insufficient and the test material was encapsulated rather than free.CHRONIC DATA

<u>SPECIES</u>	<u>CHRONIC VALUE</u> (<u>µg/l</u>)	<u>METHOD</u>	<u>SMCV^a</u> (<u>µg/l</u>)	<u>GMCV^a</u> (<u>µg/l</u>)	<u>REFERENCE</u> <u>NUMBER</u>
Cladoceran <i>Ceriodaphnia dubia</i>	<32 ^b	Life Cycle			3
Cladoceran <i>Daphnia magna</i>	6.56 (3.88-11.1)	Life Cycle	6.56	6.56	4
Cladoceran <i>Daphnia magna</i>	71.1 ^c (50.3-100.6)	Life Cycle			6
Fathead Minnow <i>Pimephales promelas</i>	13.14 ^d (9.6-18)	Early Life Stage	13.14	13.14	5

^a SMCV = Species Mean Chronic Value; GMCV = Genus Mean Chronic Value.^b Data not used to determine a SMCV since test concentrations were not measured and since data from acute tests indicate that loss of chemical due to volatilization or other mechanisms occurred during testing.^c Data not used to determine a SMCV since the test water consisted of a mixture of Pennsylvania paper mill effluent and river water.^d Data not used to determine an acute-to-chronic ratio since no appropriate acute value was available.

OHIO EPA SURFACE WATER QUALITY CRITERION FACT SHEET

Page 2 of 3

Chemical Name: SAS-310 (free, non-encapsulated) Developed by: Chris J. Skalski

CAS # 1016-46-63-3 & 101-646-62-2 & 1428-28-65-7 Data Retrieval Date: 3-2-05

Internal Code # -- Fact Sheet Preparation Date: 3-17-05

Reviewed by: Bob Heitzman

REFERENCES

1. Bellantoni, D.C., C.M. Holmes and G.T. Peters. Wildlife International. 1991. SAS-310: A 48-Hour Flow-Through Acute Toxicity Test with the Cladoceran *Daphnia magna*. Wildlife International Project Number 305A-102B. FIFRA Subdivision E Series, 72.2.
2. ABC Laboratories. 1998. Acute Toxicity of SAS-305 and SAS-310 to *Ceriodaphnia dubia* and Fathead Minnow (*Pimephales promelas*). Final Report Number 44611.
3. ABC Laboratories. 1998. *Ceriodaphnia dubia* Survival and Reproduction Test of SAS-305 and SAS-310 Under Static Renewal Conditions. ABC Study Number 44718R.
4. Bellantoni, D.C., C.M. Holmes and G.T. Peters. Wildlife International. 1991. SAS-310: A Flow-Through Life-Cycle Toxicity Test with the Cladoceran *Daphnia magna*. Wildlife International Project Number 305A-101A. FIFRA Subdivision E, Series 72-4.
5. Springborn Laboratories. 1989. Nisseki Hisol SAS-NB - Toxicity to Fathead Minnow (*Pimephales promelas*) Embryos and Larvae. SLI Report Number 89-6-3001.
6. Terrell, Y. Aqua Survey, Inc. 2001. SAS-310 Chronic Effects on the Cladoceran, *Daphnia magna*. In fulfillment of Data Requirement USEPA CFR 40 Part 797.1330. Project Study # 21-343.
7. Palmer, S.J., T.Z. Kendall and H.O. Krueger. Wildlife International. 2005. SAS-310: A 96-hour Static-Renewal Toxicity Test with the Rainbow Trout (*Oncorhynchus mykiss*). Wildlife International Project Number 592A-101.

OHIO EPA SURFACE WATER QUALITY CRITERION FACT SHEET

Page 3 of 3

Chemical Name: SAS-310 (free, non-encapsulated) Developed by: Chris J. Skalski

CAS # 1016-46-63-3 & 101-646-62-2 & 1428-28-65-7 Data Retrieval Date: 3-2-05

Internal Code # -- Fact Sheet Preparation Date: 3-17-05

Reviewed by: Bob Heitzman

CALCULATION OF ACUTE AQUATIC VALUE (AAV)^a

Data Requirement <u>OAC 3745-1-36(A)(1)</u>	<u>SPECIES</u>	GMAV <u>(µg/l)</u>
(a)	Rainbow Trout	>100
(d)	<i>Ceriodaphnia</i>	79

Secondary Acute Factor (SAF) = 7.9

Secondary Acute Value (SAV) = Lowest GMAV ÷ SAF
 = 79 ÷ 7.9
 = 10 µg/l

Tier II Acute Aquatic Value (AAV) = SAV ÷ 2
 = 10 ÷ 2
 = 5.0 µg/l

CALCULATION OF CHRONIC AQUATIC VALUE (CAV)^a

Experimentally determined Acute-Chronic Ratios (ACRs):

<u>SPECIES</u>	<u>ACUTE VALUE</u> <u>(µg/l)</u>	<u>CHRONIC VALUE</u> <u>(µg/l)</u>	<u>ACUTE-CHRONIC</u> <u>RATIO</u>	<u>SPECIES MEAN</u> <u>ACR</u>
Cladoceran <i>Daphnia magna</i>	87.2	6.56	13.29	13.29

Secondary Acute-Chronic Ratio (SACR) = $\sqrt[3]{(18)(18)(13.29)} = 16.27$

OHIO EPA SURFACE WATER QUALITY CRITERION FACT SHEET

Page 4 of 3

Chemical Name: SAS-310 (free, non-encapsulated) Developed by: Chris J. Skalski

CAS # 1016-46-63-3 & 101-646-62-2 & 1428-28-65-7 Data Retrieval Date: 3-2-05

Internal Code # -- Fact Sheet Preparation Date: 3-17-05

Reviewed by: Bob Heitzman

$$\begin{aligned}\text{Chronic Aquatic Value (CAV)} &= \text{SAV} \div \text{SACR} \\ &= 10 \div 16.27 \\ &= 0.6147 = 0.61 \mu\text{g/l}\end{aligned}$$

^aSee Ohio Administrative Code 3745-1-36 effective February 22, 2002.