

## 7. REGULATIONS AND ADVISORIES

The international, national, and state regulations and guidelines regarding MBOCA in air, water, and other media are summarized in Table 7-1.

ATSDR has derived one MRL value for MBOCA. A chronic-duration oral MRL of 0.003 mg/kg/day was derived for MBOCA based on its ability to cause hepatic effects in dogs (Stula et al. 1977). EPA has not assigned a reference dose or concentration for MBOCA.

MBOCA is on the list of chemicals appearing in “Toxic Chemicals Subject to Section 313 of the Emergency Planning and Community Right-to-Know Act of 1986” (EPA 1988d, 1988e).

MBOCA is designated as a hazardous substance (EPA 1985, 1989) and is subject to reporting and record-keeping requirements (EPA 1986, 1988f).

The Department of Health and Human Services has determined that MBOCA may reasonably be Anticipated to be a carcinogen (NTP 1991b).

## 7. REGULATIONS AND ADVISORIES

**TABLE 7-1. Regulations and Guidelines Applicable to 4,4'-Methylenebis(2-chloroaniline) (MBOCA)**

| Agency               | Description                                                                                                                                         | Information                           | References                                       |
|----------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------|--------------------------------------------------|
| <u>INTERNATIONAL</u> |                                                                                                                                                     |                                       |                                                  |
| IARC                 | Carcinogenic classification                                                                                                                         | Group 2A <sup>a</sup>                 | IARC 1987                                        |
| <u>NATIONAL</u>      |                                                                                                                                                     |                                       |                                                  |
| Regulations:         |                                                                                                                                                     |                                       |                                                  |
| a. Air:              |                                                                                                                                                     |                                       |                                                  |
| OSHA                 | PEL TWA (skin designation)                                                                                                                          | 0.02 ppm<br>(0.22 mg/m <sup>3</sup> ) | OSHA 1989a (29 CFR 1910.1000); OSHA 1989b        |
| b. Other:            |                                                                                                                                                     |                                       |                                                  |
| EPA OERR             | Reportable quantity                                                                                                                                 | 10 pounds                             | EPA 1985 (40 CFR 302.4); EPA 1989                |
| EPA OSW              | Designation of hazardous substances                                                                                                                 | Yes                                   | EPA 1985 (40 CFR 302.4); EPA 1989                |
|                      | Listing as a hazardous waste; commercial chemical products, manufacturing chemical intermediates, or off-specification commercial chemical products | Yes                                   | EPA 1988a (40 CFR 261.33), EPA 1988b             |
|                      | Listing as a hazardous constituent                                                                                                                  | Yes                                   | EPA 1988a (40 CFR 261, Appendix VIII); EPA 1988b |
|                      | Land disposal restriction; treatment standard                                                                                                       |                                       | EPA 1991a (40 CFR 268); EPA 1991b                |
| EPA OTS              | Waste water                                                                                                                                         | 0.5 mg/L                              |                                                  |
|                      | Non-waste water                                                                                                                                     | 35 mg/kg                              |                                                  |
|                      | Toxic Release Reporting; Community Right to Know                                                                                                    | Yes                                   | EPA 1988d (40 CFR 372); EPA 1988e                |
|                      | TSCA Comprehensive assessment information rule; reporting and record keeping requirement                                                            | Yes                                   | EPA 1986; EPA 1988f (40 CFR 704)                 |
| Guidelines:          |                                                                                                                                                     |                                       |                                                  |
| a. Air:              |                                                                                                                                                     |                                       |                                                  |
| ACGIH                | TLV TWA (skin designation)                                                                                                                          | 0.02 ppm (0.22 mg/m <sup>3</sup> )    | ACGIH 1991                                       |
| NIOSH                | Carcinogenic classification                                                                                                                         | Group A <sup>2b</sup>                 |                                                  |
|                      | REL TWA                                                                                                                                             | 3 µg/m <sup>3</sup>                   | NIOSH 1992                                       |
| b. Other:            |                                                                                                                                                     |                                       |                                                  |
| EPA                  | Carcinogenic classification                                                                                                                         | Group B <sup>2c,d</sup>               | EPA 1990                                         |
|                      | Slope factor (q <sub>1</sub> <sup>*</sup> ) (mg/kg/day) <sup>-1</sup>                                                                               | 1.3×10 <sup>-1d</sup>                 |                                                  |
| NTP                  | Carcinogenic classification                                                                                                                         | Yes <sup>e</sup>                      | NTP 1990                                         |

## 7. REGULATIONS AND ADVISORIES

**TABLE 7-1. Regulations and Guidelines Applicable to 4,4'-Methylenebis(2-chloroaniline) (MBOCA) (Continued)**

| Agency                      | Description                                                      | Information                                  | References  |
|-----------------------------|------------------------------------------------------------------|----------------------------------------------|-------------|
| <u>STATE</u>                |                                                                  |                                              |             |
| Regulations and Guidelines: |                                                                  |                                              |             |
| a. Air:                     |                                                                  |                                              |             |
|                             | Acceptable Ambient Air Concentrations                            |                                              |             |
| Arizona                     | (1 hour)                                                         | 6.40 $\mu\text{g}/\text{m}^3$                | NATICH 1992 |
| Arizona                     | (24 hours)                                                       | 1.70 $\mu\text{g}/\text{m}^3$                | NATICH 1992 |
| California                  | (8 hours)                                                        | 0.01 ppm                                     | GISO 1985   |
| Connecticut                 | (8 hours)                                                        | $1.50 \times 10^{-2} \mu\text{g}/\text{m}^3$ | NATICH 1992 |
| Florida-Pinellas            | (Annual)                                                         | $2.10 \times 10^{-2} \mu\text{g}/\text{m}^3$ | NATICH 1992 |
| Kansas                      | (1 year)                                                         | $2.12 \times 10^{-2} \mu\text{g}/\text{m}^3$ | NATICH 1992 |
| Maryland                    |                                                                  | 0.00                                         |             |
| Nevada                      | (8 hours)                                                        | 0.00                                         |             |
| North Dakota                |                                                                  | 0.00                                         |             |
| Oklahoma                    | (24 hours)                                                       | 2.20 $\mu\text{g}/\text{m}^3$                | NATICH 1992 |
| Pennsylvania-Philadelphia   | (1 year)                                                         | $5.50 \times 10^{-1} \mu\text{g}/\text{m}^3$ | NATICH 1992 |
| Rhode Island                | (24 hours)                                                       | 1.00 $\mu\text{g}/\text{m}^3$                | NATICH 1992 |
| Texas                       | (30 minutes)                                                     | 2.20 $\mu\text{g}/\text{m}^3$                | NATICH 1992 |
| Texas                       | (24 hours)                                                       | $2.20 \times 10^{-1} \mu\text{g}/\text{m}^3$ | NATICH 1992 |
| Virginia                    | (24 hour)                                                        | 2.20 $\mu\text{g}/\text{m}^3$                | NATICH 1992 |
| Wisconsin                   | Best available control technology for hazardous air contaminants | 250 pounds/year                              | WAC 1988    |

<sup>a</sup>Group 2A: probably carcinogenic in humans

<sup>b</sup>Group A2: suspected human carcinogen

<sup>c</sup>Group B2: probable human carcinogen

<sup>d</sup>Interim data, not verified by the CRAVE group

<sup>e</sup>May reasonably be anticipated to be a carcinogen

ACGIH = American Conference of Governmental Industrial Hygienists; CRAVE = Carcinogenic Risk Assessment Validation Effort; EPA = Environmental Protection Agency; IARC = International Agency for Research on Cancer; NIOSH = National Institute for Occupational Safety and Health; NTP = National Toxicology Program; OERR = Office of Emergency and Remedial Response; OSHA = Occupational Safety and Health Administration; OSW = Office of Solid Wastes; OTS = Office of Toxic Substances; PEL = Permissible Exposure Limit;  $q_1^*$  = an upper-bound estimate of the low-dose slope of the dose-response curve as determined by the multistage procedure; REL = Recommended Exposure Limit; TLV = Time Weighted Average; TSCA = Toxic Substance; Control Act; TWA = Time Weighted Average

