8.0 Phosgene Regulatory Information

8.1 Introduction

Caution: The following section has been provided to help users identify some regulatory information directly related to phosgene. Although the Panel makes every effort to be accurate, as with other sections of the Manual, no representations or warranties (expressed or implied) are made as to the information's accuracy or completeness. Additional and/or updated requirements or values may be relevant and applicable. As such, users must consult with their own regulatory experts and legal staff, and examine the actual regulatory source or issuing authority document to ascertain potential obligations. Although the focus of the section is on United States requirements, the section also provides some limited, selected regulatory information from other countries.

8.2 Last updated

The following information was prepared in September 2012. Because the requirements may be revised or updated, users must consult with the appropriate issuing authority to determine whether the modifications have been made.

8.3 Workplace exposure information

8.3.1 U.S. Standards

8.3.1.1 AMERICAN CONFERENCE OF GOVERNMENTAL INDUSTRIAL HYGIENISTS THRESHOLD LIMIT VALUES AND BIOGENIC EMISSIONS INVENTORY SYSTEM – 2010

8.3.1.1.1 TIME-WEIGHTED AVERAGE: 0.1 ppm time weighted average

8.3.1.1.2 THRESHOLD LIMIT VALUE BASIS - CRITICAL EFFECTS: irritation; anoxia; pulmonary edema

8.3.1.2 UNITED STATES - OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION PERMISSIBLE EXPOSURE LIMIT - 29 CODE OF FEDERAL REGULATIONS 1910.1000 TABLE Z-1

8.3.1.2.1 VACATED TIME-WEIGHTED AVERAGE: 0.1 ppm time weighted average; 0.4 mg/m^3 time weighted average

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8.3.1.2.2 FINAL TIME-WEIGHTED AVERAGE: 0.1 ppm time weighted average; 0.4 mg/m^3 time weighted average

8.3.1.3 UNITED STATES - NATIONAL INSTITUTE OF OCCUPATIONAL SAFETY AND HEALTH POCKET GUIDE TO CHEMICAL HAZARDS – 2007

8.3.1.3.1 TIME-WEIGHTED AVERAGE EXPOSURE LIMIT: 0.10 ppm time weighted average; 0.4 mg/m^3 time weighted average

8.3.1.3.2 CEILING LIMIT: C 0.2 ppm; C 0.8 mg/m^3 (15 minutes)

8.3.1.3.3 IMMEDIATELY DANGEROUS TO LIFE AND HEALTH LEVEL (IDLH): 2.0 ppm immediately dangerous to life and health level

Note: Other States also have their own exposure limits, (for example, Michigan, Minnesota, Washington). The International Labour Organization (www.ilo.org) provides helpful links to individual state regulatory permissible exposure limits.

8.3.2 International Standards

8.3.2.1 AUSTRALIA - NATIONAL OCCUPATIONAL HEALTH AND SAFETY COMMISSION EXPOSURE STANDARDS – 2008

8.3.2.1.1 TIME WEIGHTED AVERAGE/PEAK LIMITATION: 0.02 ppm time-weighted average; 0.08 mg/m^3 time-weighted average

8.3.2.2 BRAZIL - TOLERANCE LIMITS

8.3.2.2.1 TOLERANCE LIMIT: 0.08 ppm; 0.3 mg/m^3; maximum degree of harm

8.3.2.3 CANADA - ALBERTA CHEMICAL REGULATIONS.

8.3.2.3.1 8-HOUR OCCUPATIONAL EXPOSURE LIMIT: 0.10 ppm time-weighted average; 0.4 mg/m^3 time-weighted average

8.3.2.3.2 15-MINUTE OCCUPATIONAL EXPOSURE LIMIT: 0.30 ppm STEL; 1.2 mg/m^3 STEL

8.3.2.4 CANADA – BRITISH COLUMBIA PERMISSIBLE CONCENTRATIONS

8.3.2.4.1 8-HOUR EXPOSURE LIMIT: 0.10 ppm time-weighted average; 0.4 mg/m^3 time-weighted average

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8.3.2.5 CANADA - ONTARIO EXPOSURE VALUES

8.3.2.5.1 TIME-WEIGHTED AVERAGE EXPOSURE VALUE: 0.10 ppm time-weighted average exposure value; 0.4 mg/m^3 time-weighted average exposure value

8.3.2.6 CANADA - QUEBEC PERMISSIBLE CONCENTRATIONS

8.3.2.6.1 TIME-WEIGHTED AVERAGE EXPOSURE VALUE: 0.10 ppm time-weighted average exposure value; 0.4 mg/m^3 time-weighted average exposure value

8.3.2.7 MEXICO - PERMISSIBLE CONCENTRATIONS – 2004

8.3.2.7.1 TIME WEIGHTED AVERAGE: 0.10 ppm time-weighted average; 0.4 mg/m^3 time-weighted average

8.3.2.8 UNITED KINGDOM – HEALTH AND SAFETY EXECUTIVE MAXIMUM EXPOSURE LIMITS and OCCUPATIONAL EXPOSURE STANDARDS – OCCUPATIONAL EXPOSURE LIMITS – 2005

8.3.2.8.1 OCCUPATIONAL EXPOSURE STANDARDS TIME WEIGHTED AVERAGE: 0.02 ppm time-weighted average; 0.08 mg/m^3 time-weighted average.

8.3.2.8.2 OCCUPATIONAL EXPOSURE STANDARDS SHORT TERM EXPOSURE LIMIT: 0.06 ppm short term exposure limit; 0.25 mg/m^3 short term exposure limit

Note: Other International Standards are also listed within the International Labour Organization's website: www.ilo.org.

8.4 Other Safety, Health or Environmental Data

8.4.1 UNITED STATES - NATIONAL INSTITUTE OF OCCUPATIONAL SAFETY AND HEALTH POCKET GUIDE TO CHEMICAL HAZARDS – 2007

8.4.1.1 TARGET ORGAN INFORMATION: skin, eyes, respiratory system

8.4.1.2 AMERICAN INDUSTRIAL HYGIENE ASSOCIATION ODOR THRESHOLDS – 1989

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8.4.1.2.1 ODOR THRESHOLD: no geometric mean air odor threshold

8.4.2 UNITED STATES - OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION 29 CFR 1910 SUBPART H (1910.119 App A)

8.4.2.1 HIGHLY HAZARDOUS RECOMMENDED THRESHOLD QUANTITY (TQ) threshold quantity = 100 pounds

8.4.3 NATIONAL FIRE PROTECTION AGENCY 49 – 1994

8.4.3.1 HAZARD RATING: Health - 4, Flammability - 0, Reactivity - 1

8.4.3.2 FIRE AND EXPLOSION HAZARD: Noncombustible gas

8.5 Transportation

8.5.1 UNITED STATES – DEPARTMENT OF TRANSPORATION 49 CODE OF FEDERAL REGULATIONS 172

8.5.2 TABLE 101 HAZARDOUS MATERIAL:

8.5.2.1 Regulated by Department of Transportation (United Nations 1076)

8.5.2.2 TABLE 101 HAZARD CLASS: Department of Transportation hazard class = 2.3

8.5.2.3 TABLE 101 HAZARDOUS SUBSTANCE (APPENDIX A, TABLE 1):

8.5.2.3.1 Final Reportable Quantity = 10 pounds (4.54 kg); also listed as Carbonic dichloride

8.5.3 CANADA – TRANSPORT DANGEROUS GOODS

8.5.3.1 UNITED NATIONS/TRANSPORT CANADA NUMBER AND HAZARD CLASS: UNITED NATIONS 1076 - Hazard Class: 2.3; 8

8.5.3.2 REGULATED LIMIT - SCHEDULE XII: S3 (UNITED NATIONS 1076)

8.6 Environmental Regulations

8.6.1 UNITED STATES – ENVIRONMENTAL PROTECTION AGENCY COMPREHENSIVE ENVIRONMENTAL RESPONSE,

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COMPENSATION, AND LIABILITY ACT / SUPERFUND AMENDMENTS AND REAUTHORIZATION ACT - 40 CODE OF FEDERAL REGULATIONS SUBCHAPTER J

8.6.1.1 SUPERFUND AMENDMENTS AND REAUTHORIZATION ACT - EXTREMELY HAZARDOUS SUBSTANCE/THRESHOLD PLANNING QUANTITY (TPQ): Threshold Planning Quantity = 10 pounds; Reportable Quantity = 10 pounds (does not meet toxicity criteria but because of high production volume and recognized toxicity is considered a chemical of concern)

8.6.1.2 COMPREHENSIVE ENVIRONMENTAL RESPONSE, COMPENSATION, AND LIABILITY ACT - HAZARDOUS SUBSTANCE/REPORTABLE QUANTITY (RQ): final Reportable Quantity = 10 pounds (4.54 kg)

8.6.2 UNITED STATES - ENVIRONMENTAL PROTECTION AGENCY CLEAN AIR ACT – 40 CFR Part 68

8.6.2.1 LIST OF HAZARDOUS AIR POLLUTANTS: [April 2002]

8.6.2.2 ACCIDENTAL RELEASE PREVENTION TOXIC SUBSTANCE: threshold quantity = 500 lbs; toxic endpoint = 0.00081 mg/L

8.6.2.3 HON RULE - SYNTHETIC ORGANIC CHEMICAL MANUFACTURING INDUSTRY (SOCMI) CHEMICAL: compliance by July 24, 1995 HON RULE - ORGANIC HAZARDOUS AIR POLLUTANT (HAP): [April 2002]

8.6.2.4 LIST OF VOLATILE ORGANIC COMPOUNDS (VOCs) IN SOCMI: [July 2005] HIGH RISK POLLUTANT: Weighting factor: 10

8.6.3 UNITED STATES - ENVIRONMENTAL PROTECTION AGENCY CWA –

8.6.3.1 40 CFR SUBCHAPTER D LIST OF HAZARDOUS SUBSTANCES: [April 2002]

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8.6.4 UNITED STATES - ENVIRONMENTAL PROTECTION AGENCY RESOURCE CONSERVATION AND RECOVERY ACT –

8.6.4.1 40 CODE OF FEDERAL REGULATIONS SUBCHAPTER IP SERIES WASTE: waste number P095

8.6.4.2 APPENDIX VIII - HAZARDOUS WASTE: waste number P095

8.6.4.3 SUBSTANCES BANNED FROM LAND DISPOSAL: [April 2002]

8.6.5 ENVIRONMENTAL PROTECTION AGENCY – HIGH PRODUCTION VOLUME

8.6.5.1 HIGH PRODUCTION VOLUME (HPV) CHALLENGE PROGRAM CHEMICAL LIST: Sponsored by American Chemistry Council's Phosgene Panel

8.6.6 ENVIRONMENTAL PROTECTION AGENCY – NAC/AEGL –

8.6.6.1 PRIORITY CHEMICAL ACUTE EXPOSURE GUIDELINE LEVEL (NAC/AEGL): [April 2002]

8.6.7 UNITED STATES – State Regulations

8.6.7.1 UNITED STATES - CALIFORNIA AIR TOXICS ACT (BILL 2588) SUBSTANCE FOR WHICH EMISSIONS MUST BE QUANTIFIED: ADOA: 2 lbs/yr

8.6.7.2 UNITED STATES - CALIFORNIA - TOXIC AIR CONTAMINANT IDENTIFICATION AND CONTROL ACT SUBSTANCE LISTED AS: Category I

8.6.7.3 UNITED STATES - ILLINOIS - ENVIRONMENTAL PROTECTION TOXIC AIR CONTAMINANT: April 2002 on HAZARDOUS AIR POLLUTANTS list

8.6.7.4 UNITED STATES - NORTH CAROLINA - ENVIRONMENTAL MANAGEMENT TOXIC AIR POLLUTANT: 0.0025 mg/m3 (chronic toxicants)

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8.6.7.5 UNITED STATES - MICHIGAN DEPARTMENT. OF NATURAL RESOURCES CRITICAL MATERIAL: April 2002

8.6.7.6 UNITED STATES - WISCONSIN DEPT. OF NATURAL RESOURCES -HAZARDOUS AIR POLLUTANTS (HAPs) TABLE 4 - HAPs WITH ACCEPTABLE AMBIENT CONCENTRATIONS (AAC) - COMPLIANCE BY 1993/04/01: less than 25 ft: 0.033600 lbs/hour; greater than 25 ft: 0.139200 lbs/hour

8.6.8 CANADA - ENVIRONMENT CANADA – CANADIAN ENERGY PIPELINE ASSOCIATION

8.6.8.1 NATIONAL POLLUTANT RELEASE INVENTORY (NPRI): [reporting required]

8.7 Other Regulatory Information

8.7.1 UNITED STATES - CHEMICAL WEAPONS CONVENTION (CWC) - ANNEX ON CHEMICALS

8.7.1.1 SUBSTANCE LISTED AS: Schedule 3 Toxic chemical

8.7.2 UNITED STATES - COMMERCE - EXPORT ADMINISTRATION REGULATIONS (EAR)

8.7.2.1 CHEMICAL WEAPONS CONVENTION (CWC) LIST - PART 745: Schedule 3

8.7.3 COMMERCE CONTROL LIST (CCL) - PART 774: 1C355, 1E355

8.7.4 RIGHT-TO-KNOW/DISCLOSURE LISTS

8.7.4.1 STATE RIGHT-TO-KNOW LISTS

8.7.4.1.1 FLORIDA SUBSTANCE LIST: [April 2002]

8.7.4.1.2 MASSACHUSETTS RIGHT-TO-KNOW LIST: extraordinarily hazardous; MASSACHUSETTS RIGHT-TO-KNOW EXTRAORDINARILY HAZARDOUS SUBSTANCE: extraordinarily hazardous

8.7.4.1.3 MINNESOTA HAZARDOUS SUBSTANCES LIST: [April 2002]

8.7.4.1.4 NEW JERSEY DEPARTMENT OF HEALTH RIGHT-TO-KNOW LIST: sn 1510 NEW JERSEY

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RIGHT-TO-KNOW ENVIRONMENTAL HAZARDOUS SUBSTANCE: sn 1510, TPQ=10 lb.

8.7.4.1.5 PENNSYLVANIA RIGHT-TO-KNOW LIST: environmental hazard

8.7.4.1.6 RHODE ISLAND HAZARDOUS SUBSTANCE LIST: Toxic, Flammable

8.7.4.1.7 CALIFORNIA DIRECTOR'S LIST OF HAZARDOUS SUBSTANCES: [April 2002]

8.7.4.1.8 CANADA - WORKPLACE HAZARDOUS MATERIALS INFORMATION SYSTEM (WHMIS) CANADA WORKPLACE HAZARDOUS MATERIALS INFORMATION SYSTEM INGREDIENT DISCLOSURE LIST (IDL): 1% item 1289 (1390)

8.7.4.1.9 TAIWAN - DEPARTMENT OF LABOR SAFETY AND HEALTH DANGEROUS AND TOXIC MATERIALS: Toxic material

8.7.4.1.10 EUROPEAN UNION - INVENTORY - COUNCIL DIRECTIVE 79/831/ EUROPEAN ECONOMIC COMMUNITY

8.7.4.1.11 EUROPEAN INVENTORY OF EXISTING COMMERCIAL SUBSTANCES IDENTIFICATION NUMBER: 200-870-3; CCl2O

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