TECHNICAL SUPPORT DOCUMENT

PART I *What is the material and what do I need to know in an emergency?*

1. PRODUCT IDENTIFICATION

TRADE NAME (AS LABELED): **ULTRACAPACITOR**

BASIC REFERENCE SOURCES: The following reference materials, described in TABLE 1, were used in the production of the associated Material Safety Data Sheet.

TABLE 1

CHEMICAL COMPONENT	CAS #	% COMPOSITION	REFERENCE MSDS	ECRD	SAX DPIM RTECS Accession #	SIGMA
ACETONITRILE	75-05-8	10-20%	Cheminfo # 492 ECDIN Record Acros MSDS NTP Record # 000622 EPA IRIS Record # 0205 National Library of Medicine Record # 42 Genium Record # ACE5050 CHRIS Record # 104 ICSC Record # 0088 Inchem Record NIOSH Record	Vol I: Pg 81-86	ABE 500 AL7700000	Vol 1: Pg 23A
ACTIVATED CARBON	7440-44-0	10-20%	TDG Record DOT Record National Library of Medicine Record # 5037 CHRIS Record # 252 NIOSH Record ICSC Record #s 0702, 0893 Acros Record Fisher MSDS JT Baker MSDS	//////	CBT 500 FF5250100	Vol 1: Pg 63B
TETRAETHYLAMMONIUM TETRAFLUOROBORATE	429-06-1	5-15%	Acros MSDS On-Line Database Search	//////	////// ///////	//////

OTHER REFERENCES: The following list summarizes reference materials that were consulted during preparation of the associated Material Safety Data Sheet.

Brethricks Handbook of Reactive Chemicals Hazards, 4th Ed., Butterworth & Company Publishers, LTD.
Condensed Chemical Dictionary, Sax, N.I., and Lewis, R.J.; Van Nostrand Reinhold
Chapman & Hall Combined Chemical Dictionary, Chapman & Hall Publishers
Chemical Toxicology of Commercial Products, Gleason, M., *et al.*; Williams and Wilkins Co.
Chemical Exposure and Toxic Responses, Lewis, Sr., R.J., Van Nostrand Reinhold
Cooper's Toxic Exposure Desk Reference, Cooper, A. R., Lewis Publishers
CRC Handbook of Chemistry and Physics, Weast, R.C.; CRC Press, Boca Raton, FL
CRC Handbook of Analytical Toxicology, Sunshine, I.S.; Chemical Rubber Co., Cleveland OH
Dangerous Properties of Industrial Materials, Sax, N.I., and Lewis, R.J.; Van Nostrand Reinhold
Emergency Care for Hazardous Materials Exposure, Bronstein, A.C. and Currance, P.L.
Emergency Response Guidebook
Environmental Contaminant Reference Databook (Volumes I & II), Prager, J.C.; Van Nostrand Reinhold
Fire Protection Guide to Hazardous Materials, National Fire Protection Association
Handbook of Emergency Toxicology, Sidney, K.; C.C. Thomas Publisher, Springfield IL
Handbook of Environmental Fate and Exposure Data for Organic Chemicals (Volumes I - IV); Lewis Publishers
Handbook of Pharmaceutical Additives, Ash, Michael and Irene; Gower
Hawley's Condensed Chemical Dictionary (12th ed.), Lewis, R.J., Sr.; Van Nostrand Reinhold
Hazardous Material Information System Implementation Manual and Hazardous Material Information System Raw Materials Rating Manual; National Paint and Coatings Association
Index of Antimicrobials, Ash, Michael and Irene; Gower
Index of Antioxidants, Ash, Michael and Irene; Gower
Index of Flame Retardants, Ash, Michael and Irene; Gower
Index of Solvents, Ash, Michael and Irene; Gower
Merck Index (12th ed.), Budavari, S. (Ed.); Merck & Co., Inc.
Quick Guide, NIOSH/EPA Chemical Database.
Sigma-Aldrich Library of Chemical Safety Data, Lewis, R.E.; Sigma-Aldrich
WHMIS Compliance Procedure Manual, International Compliance Center Ltd.

2. HAZARD IDENTIFICATION

GLOBAL HARMONIZATION STANDARD LABELING AND CLASSIFICATION: Classification based on criteria as defined in Globally Harmonised System of Classification and Labelling of Chemicals (GHS), Third Revised Edition.

EU CLP LABELING AND CLASSIFICATION: Classification based on criteria as defined in Regulation (EC) 1272/2008 and subsequent amendments to the regulation.

EU DANGEROUS SUBSTANCES DIRECTIVE AND DANGEROUS PREPARATIONS DIRECTIVE LABELING AND CLASSIFICATION: Classification based on criteria as defined in European Union Directives 67/548/EEC and 1999/45/EC and subsequent amendments to the directives.

2. HAZARD IDENTIFICATION (Continued)

AUSTRALIAN NATIONAL OCCUPATION HEALTH AND SAFETY COMMISSION LABELING AND CLASSIFICATION: Classification based on criteria as defined in Australian National Occupational Health and Safety Commission Approved Criteria for Classifying Hazardous Substances [NOHSC:1008(2004)] 3rd Edition.

3. COMPOSITION and INFORMATION ON INGREDIENTS

CHEMICAL NAME: Information supplied by Ioxus (corroborated by CSA).
CAS NUMBER: Information from: Table 1 references or an on-line database search.
PERCENT: Information from Ioxus.

PART II *What should I do if a hazardous situation occurs?*

4. FIRST-AID MEASURES

Basic statement derived from standard first-aid treatment recommended in the following documents:

Emergency Care for Hazardous Materials Exposure
Sigma-Aldrich Chemical Library
Physician's Desk Reference
National Library of Medicine Records

IMMEDIATE MEDICAL ATTENTION AND SPECIAL TREATMENT NEEDED: Information from Emergency Care for Hazardous Materials Exposure, National Library of Medicine records for components (when available) and on-line databases. Modified as needed by CSA, based on the information provided by the references described in Table 1 of this document.

5. FIRE-FIGHTING MEASURES

INFORMATION FROM: 2008 Emergency Response Guidebook
Review of Information in TABLE 1
NFPA 704 System Information

NFPA Rating was determined using the criteria of the NFPA 704 System Information. The NFPA rating assigned by CSA is:

For Product: 0-0-0, based on the physical and health hazards associated with this product.
- Health Hazard Rating = 0; This product is an article and presents minimal health hazards.
- Flammability Hazard Rating = 0; This product is not flammable or combustible.
- Instability Hazard Rating = 0; This product is not reactive.

For Electrolyte Solution: 1-1-0, based on the physical and health hazards associated with this product.
- Health Hazard Rating = 1; This solution may cause adverse effect by inhalation, ingestion or skin contact and may be irritating.
- Flammability Hazard Rating = 1; This solution may be combustible and ignite if exposed to high temperature or direct flame.
- Instability Hazard Rating = 0; This product is not reactive.

6. ACCIDENTAL RELEASE MEASURES

The information presented provides general safe spill response procedures, recognizing the size of potential spills and the training and experience of persons who are expected to handle this material.

PART III *How can I prevent hazardous situations from occurring?*

7. HANDLING and STORAGE

Information from review of TABLE 1 references. Additional information was from CSA's Hazardous Chemical Safety manual.

8. EXPOSURE CONTROLS - PERSONAL PROTECTION

Information from review of TABLE 1 and Prudent Practices in the Laboratory, National Academy Press, Washington, D.C., 1981, and NIOSH respiratory protection and other personal protection guidelines. Additional information from NIOSH personal protective guidelines.

PEL: 29 CFR 1910.1000, 1990 from the Occupational Safety and Health Administration. The OSHA Permissible Exposure Limits are based in the 1989 PELs and the June, 1993 Air Contaminants Rule (Federal Register: 58: 35338-35351 and 58: 40191). Both the current PELs and the vacated PELs are indicated. The current PELs are the ones that are enforced by OSHA under the regulations; however, over-exposures above the PELs which were vacated may be considered violations under the "General Duty Clause", as contained in section 5(a)(1) of the Occupational Safety and Health Act.
Both values are provided, to give end-users of this product the most complete information on exposure limits pertinent to the components.

TLV: Information from 2011 Threshold Limit Values (TLVs) for Chemical Substances and Physical Agents and Biological Exposure Indices (BEIs), American Conference of Governmental Industrial Hygienists.

COMMENTS: Additional information from the following:
National Institute of Occupational Safety and Health: Pocket Guide to Chemical Hazards
Occupational Safety and Health Administration (1910 Subpart Z)

9. PHYSICAL and CHEMICAL PROPERTIES

INFORMATION FROM: Information from Ioxus.

10. STABILITY and REACTIVITY

INFORMATION FROM: References in Table 1.

PART IV *Is there any other useful information about this material?*

11. TOXICOLOGICAL INFORMATION

INFORMATION FROM: Review of references in Table 1 and other references listed.

HMIS RATING: The HMIS System Rating was determined after review of the HMIS Tables. These tables appear at the end of this document.

For Product: 0-0-0, based on the physical and health hazards associated with this product.

Health Hazard Rating = 0; This product is an article and presents minimal health hazards.

Flammability Hazard Rating = 0; This product is not flammable or combustible.

Physical Hazard Rating = 0; This product is not reactive.

For Electrolyte Solution: 0-0-0, based on the physical and health hazards associated with this product.

Health Hazard Rating = 2; This solution can cause toxic effect by inhalation, ingestion or skin contact.

Flammability Hazard Rating = 3; This solution is flammable.

Physical Hazard Rating = 0; This product is not reactive.

TOXICITY DATA: Information from NIOSH Registry of Toxic Effect of Chemical Substances (RTECS).

ACETONITRILE:

Open irritation test (Skin-Rabbit) 10 mg/24 hours.....JIHTAB Journal of Industrial Hygiene and Toxicology. (Cambridge, MA) V.18-31, 1936-49. For publisher information, see AEHLAU. Volume(issue)/page/year: 30,63,1948

Open irritation test (Skin-Rabbit) 500 mg: Mild.....UCDS** Union Carbide Data Sheet. (Union Carbide Corp., 39 Old Ridgebury Rd., Danbury, CT 06817) Volume(issue)/page/year: 3/18/1965

Open irritation test (Eye-Rabbit) 20 mg: Severe.....JIHTAB Journal of Industrial Hygiene and Toxicology. (Cambridge, MA) V.18-31, 1936-49. For publisher information, see AEHLAU. Volume(issue)/page/year: 30,63,1948

TDLo (Oral-Child) 800 mg/kg: Behavioral: hallucinations, distorted , convulsions or effect on seizure threshold; Gastrointestinal: nausea or vomiting.....AJEMEN American Journal of Emergency Medicine. (WB Saunders, Philadelphia, PA) V.1-1983-Volume(issue)/page/ year: 9,268,1991

TDLo (Oral-Man) 571 mg/kg: Behavioral: convulsions or effect on seizure threshold; Gastrointestinal: nausea or vomiting; Nutritional and Gross Metabolic: metabolic acidosis.....APTSAI Acta Pharmacologica et Toxicologica, Supplementun. (Munksgaard International Pub., POB 2148, DK-1016 Copenhagen K, Denmark) No.1- 1947- Volume(issue)/page/year: 41,340,1977

TDLo (Oral-Man) 64 mg/kg: Behavioral: excitement.....JTCTDW Journal of Toxicology, Clinical Toxicology. (Marcel Dekker, 270 Madison Ave., New York, NY 10016) V.19- 1982- Volume(issue)/page/year: 29,447,1991

TDLo (Oral-Hamster) 300 mg/kg: female 8 day(s) after conception: Reproductive: Specific Developmental Abnormalities: musculoskeletal system.....TJADAB Teratology, The International Journal of Abnormal Development. (Alan R. Liss, Inc., 41 E. 11th St., New York, NY 10003) V.1-1968- Volume(issue)/page/year: 27,313,1983

TDLo (Oral-Hamster) 400 mg/kg: female 8 day(s) after conception: Reproductive: Fertility: post-implantation mortality (e.g. dead and/or resorbed implants per total number of implants).....TJADAB Teratology, The International Journal of Abnormal Development. (Alan R. Liss, Inc., 41 E. 11th St., New York, NY 10003) V.1- 1968- Volume(issue)/page/year: 27,313,1983

LD_{50} (Oral-Rat) 2460 mg/kg.....UCDS** Union Carbide Data Sheet. (Union Carbide Corp., 39 Old Ridgebury Rd., Danbury, CT 06817) Volume(issue)/page/year: 3/18/1965

LD_{50} (Oral-Mouse) 269 mg/kg.....ARTODN Archives of Toxicology. (Springer-Verlag, Heidelberger Pl. 3, D-1000 Berlin 33, Fed. Rep. Ger.) V.32-1974-Volume(issue)/page/year: 55,47,1984

LD_{50} (Oral-Cat) 200 mg/kg.....ZAARAM Zentralblatt fuer Arbeitsmedizin und Arbeitsschutz. (Darmstadt, Fed. Rep. Ger.) V.1-25, 1951-75. Volume(issue)/page/year: 19,225,1969

LD_{50} (Oral-Rabbit) 50 mg/kg.....ZAARAM Zentralblatt fuer Arbeitsmedizin und Arbeitsschutz. (Darmstadt, Fed. Rep. Ger.) V.1-25, 1951-75. Volume(issue)/page/year: 19,225,1969

LD_{50} (Oral-Guinea Pig) 177 mg/kg.....JOCMA7 Journal of Occupational Medicine. (Chicago, IL) V.1-9, 1957-67. For publisher information, see:JJOMDZ Volume(issue)/page/year: 1,634,1959

LD_{50} (Oral-Mammal-Species Unspecified) 1670 mg/kg.....GISAAA Gigiena i Sanitariya. For English translation, see HYSAAV. (V/O Mezhdunarodnaya Kniga, 113095 Moscow, USSR) V.1-1936- Volume(issue)/page/year: 39(4),86,1974

LD_{50} (Skin-Rabbit) 1250 µL/kg.....UCDS** Union Carbide Data Sheet. (Union Carbide Corp., 39 Old Ridgebury Rd., Danbury, CT 06817) Volume(issue)/page/year: 3/18/1965

LD_{50} (Intraperitoneal-Rat) 850 mg/kg.....JOCMA7 Journal of Occupational Medicine. (Chicago, IL) V.1-9, 1957-67. For publisher information, see:JJOMDZ Volume(issue)/page/year: 1,634,1959

LD_{50} (Intraperitoneal-Mouse) 175 mg/kg: Sense Organs and Special Senses (Eye): corneal damage; Behavioral: ataxia Lungs, Thorax, or Respiration: dyspnea.....TXAPA9 Toxicology and Applied Pharmacology. (Academic Press, Inc., 1 E. First St., Duluth, MN 55802) V.1-1959- Volume(issue)/page/year: 59,589,1981

LD_{50} (Subcutaneous-Rat) 3500 mg/kg.....85GMAT "Toxicometric Parameters of Industrial Toxic Chemicals Under Single Exposure," Izmerov, N.F., et al., Moscow, Centre of International Projects, GKNT, 1982 Volume(issue)/page/year: -,16,1982

LD_{50} (Subcutaneous-Mouse) 4480 mg/kg.....85GMAT "Toxicometric Parameters of Industrial Toxic Chemicals Under Single Exposure," Izmerov, N.F., et al., Moscow, Centre of International Projects, GKNT, 1982 Volume(issue)/page/year: -,16,1982

LD_{50} (Intravenous-Rat) 1680 mg/kg.....JOCMA7 Journal of Occupational Medicine. (Chicago, IL) V.1-9, 1957-67. For publisher information, see:JJOMDZ Volume(issue)/page/year: 1,634,1959

LD_{50} (Intravenous-Mouse) 612 mg/kg.....85GMAT "Toxicometric Parameters of Industrial Toxic Chemicals Under Single Exposure," Izmerov, N.F., et al., Moscow, Centre of International Projects, GKNT, 1982 Volume(issue)/page/year: -,16,1982

LD_{50} (Parenteral-Rat) 1100 mg/kg.....85GMAT "Toxicometric Parameters of Industrial Toxic Chemicals Under Single Exposure," Izmerov, N.F., et al., Moscow, Centre of International Projects, GKNT, 1982 Volume(issue)/page/year: -,16,1982

LCLo (Inhalation-Dog) 16000 ppm/4 hours.....JOCMA7 Journal of Occupational Medicine. (Chicago, IL) V.1-9, 1957-67. For publisher information, see:JJOMDZ Volume(issue)/page/year: 1,634,1959

LC_{50} (Inhalation-Rat) 7551 ppm/8 hours: Behavioral: altered sleep time (including change in righting reflex), convulsions or effect on seizure threshold Blood: hemorrhage.....JOCMA7 Journal of Occupational Medicine. (Chicago, IL) V.1-9,1957-67. For publisher information, see:JJOMDZ Volume(issue)/page/year: 1,634,1959

LC_{50} (Inhalation-Mouse) 2693 ppm/1 hour: Liver: other changes.....CTOXAO Clinical Toxicology. (New York, NY) V.1-18, 1968-81. For publisher information, see JTCTDW. Volume(issue)/page/year: 18,991,1981

LC_{50} (Inhalation-Cat) 18 gm/m^3.....85GMAT "Toxicometric Parameters of Industrial Toxic Chemicals Under Single Exposure," Izmerov, N.F., et al., Moscow, Centre of International Projects, GKNT, 1982 Volume(issue)/page/year: -,16,1982

LC_{50} (Inhalation-Rabbit) 2828 ppm/4 hours: Behavioral: altered sleep time (including change in righting reflex), convulsions or effect on seizure threshold; Blood: hemorrhage.....JOCMA7 Journal of Occupational Medicine. (Chicago, IL) V.1-9, 1957-67. For publisher information, see:JJOMDZ Volume(issue)/page/year: 1,634,1959

LC_{50} (Inhalation-Guinea Pig) 5655 ppm/4 hours: Behavioral: altered sleep time (including change in righting reflex), convulsions or effect on seizure threshold; Blood: hemorrhage....JOCMA7 Journal of Occupational Medicine. (Chicago, IL) V.1-9, 1957-67. For publisher information, see:JJOMDZ Volume(issue)/page/year: 1,634,1959

LDLo (Subcutaneous-Rabbit) 105 mg/kg.....AIPTAK Archives Internationales de Pharmacodynamie et de Therapie. (Heymans Institute of Pharmacology, De Pintelaan 185, B-9000 Ghent, Belgium) V.4-1898-Volume(issue)/page/year: 36,455,1929

LDLo (Subcutaneous-Frog) 9100 mg/kg: Peripheral Nerve and Sensation: spastic paralysis with or without sensory change Lungs, Thorax, or Respiration - dyspnea.....AIPTAK Archives Internationales de Pharmacodynamie et de Therapie. (Heymans Institute of Pharmacology, De Pintelaan 185, B-9000 Ghent, Belgium) V.4-1898- Volume(issue)/page/year: 5,161,1899

TCLo (Inhalation-Human) 160 ppm/4 hours: Lungs, Thorax, or Respiration: other changes.....34ZIAG "Toxicology of Drugs and Chemicals," Deichmann, W.B., New York, Academic Press, Inc., 1969 Volume(issue)/page/year: -,65,1969

TCLo (Inhalation-Rat) 655 ppm/7 hours /90 days-intermittent: Lungs, Thorax, or Respiration: chronic pulmonary edema; Liver: other changes; Kidney, Ureter, Bladder: changes in tubules (including acute renal failure, acute tubular necrosis).....JOCMA7 Journal of Occupational Medicine. (Chicago, IL) V.1-9, 1957-67. For publisher information, see:JJOMDZ Volume(issue)/page/year: 1,634,1959

11. TOXICOLOGICAL INFORMATION (Continued)

TOXICITY DATA (continued):

ACETONITRILE (continued):

TCLo (Inhalation-Rat) 800 ppm/6 hours /13 weeks-Intermittent: Behavioral: somnolence (general depressed activity), ataxia; Reproductive: Tumorigenic effects: other reproductive system tumors.....NTIS** National Technical Information Service. (Springfield, VA 22161) Formerly U.S. Clearinghouse for Scientific & Technical Information. Volume(issue)/page/year: OTS0535664

TCLo (Inhalation-Rat) 400 ppm/6 hours /2 years-intermittent: Tumorigenic: equivocal tumorigenic agent by RTECS criteria; Liver: tumors.....NTPTR* National Toxicology Program Technical Report Series. (Research Triangle Park, NC 27709) No.206- Volume(issue)/page/year: NTP-TR-447,1996

TCLo (Inhalation-Rat) 1800 ppm/6 hours: female 6-20 day(s) after conception: Reproductive: Fertility: post-implantation mortality (e.g. dead and/or resorbed implants per total number of implants).....FAATDF Fundamental and Applied Toxicology. (Academic Press, Inc., 1 E. First St., Duluth, MN 55802) V.1- 1981- Volume(issue)/page/year: 20,365,1993

TCLo (Inhalation-Mouse) 800 ppm/6 hours /13 weeks-intermittent: Behavioral: somnolence (general depressed activity); Lungs, Thorax, or Respiration: chronic pulmonary edema; Reproductive: Tumorigenic effects: other reproductive system tumors.....NTIS** National Technical Information Service. (Springfield, VA 22161) Formerly U.S. Clearinghouse for Scientific & Technical Information. Volume (issue)/page/year: OTS0535664

TCLo (Inhalation-Dog) 350 ppm/7 hours /91 days-intermittent: Nutritional and Gross Metabolic: weight loss or decreased weight gain.....JOCMA7 Journal of Occupational Medicine. (Chicago, IL) V.1-9, 1957-67. For publisher information, see:JJOMDZ Volume (issue)/page/year: 1,634,1959

TCLo (Inhalation-Monkey) 350 ppm/7 hours /91 days: Brain and Coverings: changes in circulation (hemorrhage, thrombosis, etc.); Lungs, Thorax, or Respiration: emphysema; Blood: changes in erythrocyte (RBC) count.....JOCMA7 Journal of Occupational Medicine. (Chicago, IL) V.1-9, 1957-67. For publisher information, see:JJOMDZ Volume(issue)/page/year: 1,634,1959

TCLo (Inhalation-Hamster) 8000 ppm/1 hour: female 8 day(s) after conception: Reproductive: Effects on Embryo or Fetus: fetotoxicity (except death, e.g., stunted fetus), Specific Developmental Abnormalities: musculoskeletal system.....TJADAB Teratology, The International Journal of Abnormal Development. (Alan R. Liss, Inc., 41 E. 11th St., New York, NY 10003) V.1-1968-Volume(issue)/ page/year: 27,313,1983

TCLo (Inhalation-Hamster) 5000 ppm/1 hour: female 8 day(s) after conception: Reproductive: Fertility: post-implantation mortality (e.g. dead and/or resorbed implants per total number of implants), Specific Developmental Abnormalities: Central Nervous System.....TJADAB Teratology, The International Journal of Abnormal Development. (Alan R. Liss, Inc., 41 E. 11th St., New York, NY 10003) V.1-1968- Volume(issue)/page/year: 27,313,1983

Sex chromosome loss (Inhalation-Drosophila melanogaster) 131 ppm.....MUREAV Mutation Research. (Elsevier Science Pub. B.V., POB 211, 1000 AE Amsterdam, Netherlands) V.1- 964- Volume(issue)/page/year: 259,165,1991

Sex chromosome loss and nondisjunction (Yeast-Saccharomyces cerevisiae) 47600 ppm.....MUREAV Mutation Research. (Elsevier Science Pub. B.V., POB 211, 1000 AE Amsterdam, Netherlands) V.1-1964- Volume(issue)/page/year: 149,339,1985

Sister chromatid exchange (Hamster-Ovary) 5 gm/L.....EMMUEG Environmental and Molecular Mutagenesis. (Alan R. Liss, Inc., 41 E. 11th St., New York, NY 10003) V.10- 1987- Volume(issue)/page/year: 10(Suppl 10),1,1987

ACTIVATED CARBON:

LD (Oral-Rat) > 5 gm/kg.....YAKUD5 Gekkan Yakuji. Pharmaceuticals Monthly. (Yakugyo Jihosha, Inaoka Bldg., 2-36 Jinbo-cho, Kanda, Chiyoda-ku, Tokyo 101, Japan) V.1-1959-Volume(issue)/page/year: 34,416,1992

LD (Oral-Mouse) > 5 gm/kg.....YAKUD5 Gekkan Yakuji. Pharmaceuticals Monthly. (Yakugyo Jihosha, Inaoka Bldg., 2-36 Jinbo-cho, Kanda, Chiyoda-ku, Tokyo 101, Japan) V.1-1959-Volume(issue)/page/year: 34,416,1992

LD (Oral-Dog) > 5 gm/kg.....YAKUD5 Gekkan Yakuji. Pharmaceuticals Monthly. (Yakugyo Jihosha, Inaoka Bldg., 2-36 Jinbo-cho, Kanda, Chiyoda-ku, Tokyo 101, Japan) V.1-1959-Volume(issue)/page/year: 34,416,1992

LD (Intraperitoneal-Rat) > 5 gm/kg.....YAKUD5 Gekkan Yakuji. Pharmaceuticals Monthly. (Yakugyo Jihosha, Inaoka Bldg., 2-36 Jinbo-cho, Kanda, Chiyoda-ku, Tokyo 101, Japan) V.1-1959-Volume(issue)/page/year: 34,416,1992

LD (Intraperitoneal-Mouse) > 5 gm/kg.....YAKUD5 Gekkan Yakuji. Pharmaceuticals Monthly. (Yakugyo Jihosha, Inaoka Bldg., 2-36 Jinbo-cho, Kanda, Chiyoda-ku, Tokyo 101, Japan) V.1-1959-Volume(issue)/page/year: 34,416,1992

LD (Intraperitoneal-Dog) > 5 gm/kg.....YAKUD5 Gekkan Yakuji. Pharmaceuticals Monthly. (Yakugyo Jihosha, Inaoka Bldg., 2-36 Jinbo-cho, Kanda, Chiyoda-ku, Tokyo 101, Japan) V.1-1959-Volume(issue)/page/year: 34,416,1992

LD (Subcutaneous-Rat) > 5 gm/kg.....YAKUD5 Gekkan Yakuji. Pharmaceuticals Monthly. (Yakugyo Jihosha, Inaoka Bldg., 2-36 Jinbo-cho, Kanda, Chiyoda-ku, Tokyo 101, Japan) V.1-1959-Volume(issue)/page/year: 34,416,1992

LD (Subcutaneous-Mouse) > 5 gm/kg.....YAKUD5 Gekkan Yakuji. Pharmaceuticals Monthly. (Yakugyo Jihosha, Inaoka Bldg., 2-36 Jinbo-cho, Kanda, Chiyoda-ku, Tokyo 101, Japan) V.1-1959-Volume(issue)/page/year: 34,416,1992

LD (Subcutaneous-Dog) > 5 gm/kg.....YAKUD5 Gekkan Yakuji. Pharmaceuticals Monthly. (Yakugyo Jihosha, Inaoka Bldg., 2-36 Jinbo-cho, Kanda, Chiyoda-ku, Tokyo 101, Japan) V.1-1959-Volume(issue)/page/year: 34,416,1992

LD_{50} (Intravenous-Mouse) 440 mg/kg.....TXAPA9 Toxicology and Applied Pharmacology. (Academic Press, Inc., 1 E. First St., Duluth, MN 55802) V.1-1959-Volume(issue)/page/year: 24,497,1973

TDLo (Subcutaneous-Rat) 167 mg/kg: female 8 day(s) after conception: Reproductive: Fertility: post-implantation mortality (e.g. dead and/or resorbed implants per total number of implants).....TJADAB Teratology, The International Journal of Abnormal Development. (Alan R. Liss, Inc., 41 E. 11th St., New York, NY 10003) V.1-1968-Volume(issue)/page/year: 4,327,1971

IRRITANCY OF PRODUCT: Information from Table 1 references. WHMIS defines irritancy as "the ability of the material to cause a reversible inflammatory response in a body, usually to the skin or the mucous membranes, when in sufficient concentration over a period of time."

SENSITIZATION TO THE PRODUCT: Information from Table 1 references. WHMIS defines sensitization as "the ability of the product to cause a person to develop an immune response, allergy, or other reaction following exposure to the material."

REPRODUCTIVE TOXICITY INFORMATION: Information from references in Table 1 and NIOSH Registry of Toxic Effect of Chemical Substances (RTECS).

CARCINOGENIC POTENTIAL: The National Toxicology Program, the International Agency for Research on Cancer, the OSHA carcinogen lists, and the State of California carcinogen list (Title 8, Article 110, Regulated Carcinogens) were consulted to determine the carcinogenic status of this product.

BIOLOGICAL EXPOSURE INDICES: Information from 2011 Threshold Limit Values (TLVs) for Chemical Substances and Physical Agents and Biological Exposure Indices (BEIs), American Conference of Governmental Industrial Hygienists.

12. ECOLOGICAL INFORMATION

Information from references in TABLE 1. Reasonable judgment on the part of CSA was employed to assess potential ecological impact based on the expected use and type of packaging in which the product is offered. All appropriate environmental hazard information was provided, as deemed appropriate from the label warnings and a review of hazard information.

Handbook of Environmental Fate and Exposure Data, Howard, P.H., *et al.*, Lewis Publishers
Environmental Contaminant Reference Databook (Volumes I & II), Prager, J.C.
Chemical Evaluation Search and Retrieval System
Chemical Hazards Response Information System
National Library of Medicine Records for components

12. ECOLOGICAL INFORMATION (Continued)

AQUATIC TOXICITY DATA: From references above.

ACETONITRILE:

Toxicity Threshold (Cell Multiplication Inhibition Test) (*Scenedesmus quadricauda* green algae) 7300 mg/L /Conditions of bioassay not specified.....Tietz, N.W. (ed.). Clinical Guide to Laboratory Tests. Philadelphia, PA: W.B. Saunders Co., 1983, p.152

Toxicity Threshold (Cell Multiplication Inhibition Test) (*Microcystis aeruginosa* algae) 520 mg/L /Conditions of bioassay not specified.....Tietz, N.W. (ed.). Clinical Guide to Laboratory Tests. Philadelphia, PA: W.B. Saunders Co., 1983, p.152

Toxicity Threshold (Cell Multiplication Inhibition Test) (*Pseudomonas putida* bacteria) 680 mg/L

TLm (*Pimephales promelas* fathead minnow) 96 hours = 1020 mg/L (hard water) /Conditions of bioassay not specified.....Tietz, N.W. (ed.). Clinical Guide to Laboratory Tests. Philadelphia, PA: W.B. Saunders Co., 1983, p.152

TLm (*Pimephales promelas* fathead minnow) 96 hours = 1020 1000 mg/L (soft water) /Conditions of bioassay not specified.....Tietz, N.W. (ed.). Clinical Guide to Laboratory Tests. Philadelphia, PA: W.B. Saunders Co., 1983, p.152

TLm (*Lepomis macrochirus* bluegill) 96 hours = 1850 mg/L (soft water) /Conditions of bioassay not specified.....Tietz, N.W. (ed.). Clinical Guide to Laboratory Tests. Philadelphia, PA: W.B. Saunders Co., 1983, p.152

TLm (*Lebistes reticulatus* guppy) 96 hours = 1650 mg/L (soft water) /Conditions of bioassay not specified.....Tietz, N.W. (ed.). Clinical Guide to Laboratory Tests. Philadelphia, PA: W.B. Saunders Co., 1983, p.152

EC_{50} (*Pimephales promelas* fathead minnow) 96 hours = 1640 mg/L (confidence limit 1600-1690 mg/L), flow-through bioassay with measured concentrations, 26.1°C, dissolved oxygen 6.1 mg/L, hardness 43.0 mg/L calcium carbonate, alkalinity 46.0 mg/L calcium carbonate, and pH 7.4. Effect: loss of equilibrium.....Brooke, L.T., D.J. Call, D.T. Geiger and C.E. Northcott (eds.). Acute Toxicities of Organic Chemicals to Fathead Minnows (Pimephales Promelas). Superior, WI: Center for Lake Superior Environmental Studies Univ. of Wisconsin Superior, 1984, p.27

EC_{50} (*Chlorococcales* Green algae) 24 hours = > 1000 mg/L; Conditions: freshwater, static; Effect: physiology, assimilation efficiency /formulated product.....Krebs F; Deutsche Gewasserkundliche Mitteilungen 35 (5/6): 161-70 (1991) as cited in the ECOTOX database: http://cfpub.epa.gov/ecotox/quick_query.htm as of August 4, 2008

EC_{50} (*Pseudokirchneriella subcapitata* Green algae, exponential growth phase, 15,000 cells/mL, UTEX 1648) 48 hours = 5926 mg/L; Conditions: static, 24°C, dissolved oxygen 1-2 mg/L; Effect: physiology, decreased photosynthesis.....Chen CY et al; Environ.Toxicol.Chem. 24(5):1067-1073 (2005) as cited in the ECOTOX database: http://cfpub.epa.gov/ecotox/quick_query.htm as of August 4, 2008

EC_{50} (*Pseudokirchneriella subcapitata* Green algae, exponential growth phase, 15,000 cells/mL, UTEX 1648) 48 hours = 7943 mg/L; Conditions: static, 24°C, dissolved oxygen 1-2 mg/L; Concentration: for 48 hr; Effect: decreased population growth rate.....Chen CY et al; Environ.Toxicol.Chem. 24(5):1067-1073 (2005) as cited in the ECOTOX database: http://cfpub.epa.gov/ecotox/quick_query.htm as of August 4, 2008

EC_{50} (*Spirostomum ambiguum* Protozoa); Conditions: freshwater, static, 25°C; Concentration: 179 mmol/L for 24 hr; Effect: development, deformation /formulated product.....Nalecz-Jawecki G, Sawicki J; Chemosphere 38 (14): 3211-8 (1999) as cited in the ECOTOX database: http://cfpub.epa.gov/ecotox/quick_query.htm as of August 4, 2008

EC_{50} (*Spirostomum ambiguum* Protozoa); Conditions: freshwater, static, 25°C; Concentration: 154 mmol/L for 48 hr; Effect: development, deformation /formulated product.....Nalecz-Jawecki G, Sawicki J; Chemosphere 38 (14): 3211-8 (1999) as cited in the ECOTOX database: http://cfpub.epa.gov/ecotox/quick_query.htm as of August 4, 2008

LC_{50} (*Pimephales promelas* fathead minnow) 96 hours = 1640 mg/L (confidence limit 1600-1690 mg/L), flow-through bioassay with measured concentrations, 26.1°C, dissolved oxygen 6.1 mg/L, hardness 43.0 mg/L calcium carbonate, alkalinity 46.0 mg/L calcium carbonate, and pH 7.4.....Brooke, L.T., D.J. Call, D.T. Geiger and C.E. Northcott (eds.). Acute Toxicities of Organic Chemicals to Fathead Minnows (Pimephales Promelas). Superior, WI: Center for Lake Superior Environmental Studies Univ. of Wisconsin Superior, 1984, p.27]

LC_{50} (*Artemia salina* Brine shrimp, age 72 hr) 24 hours = 399,650 µg/L; Conditions: saltwater, static, 25°C, salinity 35 ppt; (95% confidence interval: 328,000-486,900 µg/L) /formulated product.....Barahona-Gomariz MV et al; Bull Environ Contam Toxicol 52 (5): 766-771 (1994) as cited in the ECOTOX database: http://cfpub.epa.gov/ecotox/quick_query.htm as of August 4, 2008

LC_{50} (*Artemia salina* Brine shrimp, age 48 hr) 24 hours = 521,470 µg/L; Conditions: saltwater, static, 25°C, salinity 35 ppt; (95% confidence interval: 437,300-621,800 µg/L) /formulated product.....Barahona-Gomariz MV et al; Bull Environ Contam Toxicol 52 (5): 766-771 (1994) as cited in the ECOTOX database: http://cfpub.epa.gov/ecotox/quick_query.htm as of August 4, 2008

LC_{50} (*Artemia salina* Brine shrimp, age 24 hr) 24 hours = 640,950 µg/L; Conditions: saltwater, static, 25°C, salinity 35 ppt; (95% confidence interval: 565,900-725,800 µg/L) formulated product.....Barahona-Gomariz MV et al; Bull Environ Contam Toxicol 52 (5): 766-771 (1994) as cited in the ECOTOX database: http://cfpub.epa.gov/ecotox/quick_query.htm as of August 4, 2008

LC_{50} (*Daphnia magna* Water flea, age < or =24 hr) 24 hours = > 10,000 mg/L; Conditions: freshwater, static, 20-22°C; formulated product.....Bringmann G and Kuhn R; Z Wasser-Abwasser-Forsch 10 (5): 161-166 (1977) as cited in the ECOTOX database: http://cfpub.epa.gov/ecotox/quick_query.htm as of August 4, 2008

LC_{50} (*Daphnia magna* Water flea, age < 24 hr) 48 hours = 3,600,000 µg/L; Conditions: freshwater, renewal, 24°C, dissolved oxygen >5 mg/L; formulated product.....Tong Z et al; Bull Environ Contam Toxicol 57 (4): 655-9 (1996) as cited in the ECOTOX database: http://cfpub.epa.gov/ecotox/quick_query.htm as of August 4, 2008

LC_{50} (*Daphnia magna* Water flea, 1-2 instar larvae) 96 hours = > 100,000 µg/L; Conditions: freshwater, static, 20°C, pH 6.5-8.5, dissolved oxygen >40%; formulated product.....Ewell WS et al; Environ Toxicol Chem 5 (9): 831-40 (1986) as cited in the ECOTOX database: http://cfpub.epa.gov/ecotox/quick_query.htm as of August 4, 2008

LC_{50} (*Gammarus fasciatus* Scud, juvenile 0.007 g); 96 hours = > 100,000 µg/L Conditions: freshwater, static, 20°C, pH 6.5-8.5, dissolved oxygen >40%; formulated product.....Ewell WS et al; Environ Toxicol Chem 5 (9): 831-40 (1986) as cited in the ECOTOX database: http://cfpub.epa.gov/ecotox/quick_query.htm as of August 4, 2008

LC_{50} (*Hyalella azteca* Scud, 14-16 antenna segments) 18 hours = 0.831 (0.549-1.16) %v/v (percent 1,000,000 µg/L volume per volume); Conditions: freshwater, static, ~23°C; Concentration: for 18 hr /formulated product.....Bowman MC et al; Arch Environ Contam Toxicol 10 (1): 9-24 (1981) as cited in the ECOTOX database: http://cfpub.epa.gov/ecotox/quick_query.htm as of August 4, 2008

LC_{50} (*Palaemonetes kadiakensis* Grass shrimp, juvenile) 18 hours = 0.654 (0.542-0.806) %v/v (percent volume per volume); Conditions: freshwater, static, ~23°C; formulated product.....Bowman MC et al; Arch Environ Contam Toxicol 10 (1): 9-24 (1981) as cited in the ECOTOX database: http://cfpub.epa.gov/ecotox/quick_query.htm as of August 4, 2008

LC_{50} (*Oryzias latipes* Medaka, length 2 cm, weight 0.2 g) 24 hours = 1,000,000 µg/L; Conditions: freshwater, static, 25°C.....Tonogai Y et al; J.Toxicol.Sci. 7(3):193-203 (1982) as cited in the ECOTOX database: http://cfpub.epa.gov/ecotox/quick_query.htm as of August 4, 2008

LC_{50} (*Oryzias latipes* Medaka, length 2 cm, weight 0.2 g) 48 hours = 1,000,000 µg/L; Conditions: freshwater, static, 25°C.....Tonogai Y et al; J.Toxicol.Sci. 7(3):193-203 (1982) as cited in the ECOTOX database: http://cfpub.epa.gov/ecotox/quick_query.htm as of August 4, 2008

LC_{50} (*Spirostomum ambiguum* Protozoa) 24 hours = 420 mmol/L; Conditions: freshwater, static, 25°C; formulated product.....Nalecz-Jawecki G, Sawicki J; Chemosphere 38 (14): 3211-8 (1999) as cited in the ECOTOX database: http://cfpub.epa.gov/ecotox/quick_query.htm as of August 4, 2008

LC_{50} (*Spirostomum ambiguum* Protozoa) 48 hours = 370 mmol/L; Conditions: freshwater, static, 25°C; formulated product.....Nalecz-Jawecki G, Sawicki J; Chemosphere 38 (14): 3211-8 (1999) as cited in the ECOTOX database: http://cfpub.epa.gov/ecotox/quick_query.htm as of August 4, 2008

LC_{50} (*Helisoma trivolvis* Ramshorn snail, juvenile, weight 0.180 g) 96 hours = > 100,000 µg/L; Conditions: freshwater, static, 20°C, pH 6.5-8.5, dissolved oxygen >40%; formulated product.....Ewell WS et al; Environ Toxicol Chem 5 (9): 831-40 (1986) as cited in the ECOTOX database: http://cfpub.epa.gov/ecotox/quick_query.htm as of August 4, 2008

LC_{50} (*Dugesia tigrina* Turbellarian, flatworm, juvenile, weight 0.006 g) 96 hours = > 100,000 µg/L; Conditions: freshwater, static, 20°C, pH 6.5-8.5, dissolved oxygen >40%; formulated product.....Ewell WS et al; Environ Toxicol Chem 5 (9): 831-40 (1986) as cited in the ECOTOX database: http://cfpub.epa.gov/ecotox/quick_query.htm as of August 4, 2008

LC_{50} (*Lumbriculus variegatus* Oligochaete, worm, juvenile, weight 0.006 g) 96 hours = > 100,000 µg/L; Conditions: freshwater, static, 20°C, pH 6.5-8.5, dissolved oxygen >40%; formulated product.....Ewell WS et al; Environ Toxicol Chem 5 (9): 831-40 (1986) as cited in the ECOTOX database: http://cfpub.epa.gov/ecotox/quick_query.htm as of August 4, 2008

13. DISPOSAL CONSIDERATIONS

U.S. EPA WASTE DISPOSAL INFORMATION: Standard statement prepared by CSA after review of 40 CFR 261. Because hazardous material regulations vary from area to area, adherence to Federal, State, and local hazardous waste disposal regulations is stressed.

U.S. EPA WASTE NUMBER: From 49 CFR Section 172.101, Table 1 to Appendix A.

13. DISPOSAL CONSIDERATIONS (Continued)

EWC WASTE CODES: From Commission Decision 2000/532/EC, Commission Decision 2001/118/EC, Commission Decision 2001/119/EC and Commission Decision 2001/573/EC.

14. TRANSPORTATION INFORMATION

U.S. DEPARTMENT OF TRANSPORTATION: Information from Hazardous Materials Regulations 49 CFR Parts 100–185.
TRANSPORT CANADA: Information from Transportation of Dangerous Goods Regulations.
INTERNATIONAL AIR TRANSPORT ASSOCIATION (IATA): Information from Dangerous Goods Regulations.
INTERNATIONAL MARITIME ORGANIZATION (IMO): IMO information from International Maritime Dangerous Goods Code.
UNITED NATIONS ECONOMIC COMMISSION FOR EUROPE (UNECE): European Agreement Concerning the International Carriage of Dangerous Goods by Road.
AUSTRALIAN NATIONAL TRANSPORT COMMISSION: Australian Dangerous Goods Code Road and Rail.

15. REGULATORY INFORMATION

ADDITIONAL U.S. REGULATIONS:

U.S. SARA 313 STATUS: 40 CFR 372, Toxic Chemical Release Reporting: Community Right-To-Know sets forth the requirements for the submission of information relating to the release of toxic chemicals under Section 313 of the Superfund Amendments and Reauthorization Act (SARA) of 1986. SARA 313 Status of this product was determined by using the SARA Chemical Database from the U.S. EPA, latest edition. Additional information is from "Title III List of Lists" (US EPA, 2010).
U.S. CERCLA STATUS: 40 CFR 300.
U.S. TSCA STATUS: TSCA On-line review.
OTHER U.S. FEDERAL REGULATIONS: Information from the Code of Federal Regulations.

ADDITIONAL CANADIAN REGULATIONS:

OTHER CANADIAN REGULATIONS: Information from the Canadian Code of Regulations.
CANADIAN PRIORITY SUBSTANCES LISTS: Information from Environment Canada database.
CANADIAN DSL/NDSL STATUS: From CHEMINFO CD ROM list, taken from the current Canadian Environment Protection Act (CEPA) by Environment Canada.
CANADIAN WHMIS CLASSIFICATION and SYMBOLS: From the WHMIS Compliance Procedure Manual, Section on "Labels and Labeling".

ADDITIONAL EUROPEAN REGULATIONS:

SAFETY, HEALTH, AND ENVIRONMENTAL REGULATIONS/LEGISLATION SPECIFIC FOR THE PRODUCT: Search of the Official Website of the European Union and EUR-Lex.
CHEMICAL SAFETY ASSESSMENT: The chemical safety assessment is required for some substances according to European Union Regulation (EC) 1907/2006, Article 14. No assessment was provided by Ioxus.

ADDITIONAL AUSTRALIAN REGULATIONS:

AUSTRALIAN INVENTORY OF CHEMICAL SUBSTANCES (AICS) STATUS: From Australian Government Department of Health and Aging NICNAS website AICS Search Page.
HAZARDOUS SUBSTANCES INFORMATION SYSTEM (HSIS): From Australian Government Department of Employment and Workplace Relations HSIS Search Page.
STANDARD FOR THE UNIFORM SCHEDULING OF MEDICINES AND POISONS: From Australian Government Department of Health and Aging Therapeutic Goods Administration Poisons Standard page.

ADDITIONAL JAPANESE REGULATIONS:

JAPANESE ENCS: From current listing of the Japanese ENC Inventory.
POISONOUS AND DELETERIOUS SUBSTANCES CONTROL LAW: From current regulation.

16. OTHER INFORMATION

U.S. ANSI LABEL INFORMATION: CSA uses the American National Standards Institute (ANSI) labeling standard, Z129.1-2010, as the basis for label preparation. The standard recommends the following information on a commercial chemical product label:

a. Identity of product and hazardous constituents.
b. Signal Word: DANGER!, WARNING!, or CAUTION!
c. Statement of hazard.
d. Precautionary measures.
e. Instructions in case of contact or exposure.
f. Target Organs.
g. Antidotes.
h. Notes to physicians.
i. Instructions in case of fire, spill, or leak.
j. Instructions for container handling and storage.
k. Other useful information.
l. Name, address and phone number of manufacturer.

GLOBAL HARMONIZATION STANDARD LABELING AND CLASSIFICATION: Classification based on criteria as defined in Globally Harmonised System of Classification and Labelling of Chemicals (GHS), Third Revised Edition.
EU CLP LABELING AND CLASSIFICATION: Classification based on criteria as defined in Regulation (EC) 1272/2008 and subsequent amendments to the regulation.
EU DANGEROUS SUBSTANCES DIRECTIVE AND DANGEROUS PREPARATIONS DIRECTIVE LABELING AND CLASSIFICATION: Classification based on criteria as defined in European Union Directives 67/548/EEC and 1999/45/EC and subsequent amendments to the directives.
AUSTRALIAN NATIONAL OCCUPATION HEALTH AND SAFETY COMMISSION LABELING AND CLASSIFICATION: Classification based on criteria as defined in Australian National Occupational Health and Safety Commission Approved Criteria for Classifying Hazardous Substances [NOHSC:1008(2004)].

16. OTHER INFORMATION

PREPARED BY:
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DATE OF PREPARATION: September 3, 2011

HAZARDOUS MATERIAL INFORMATION SYSTEM CLASSIFICATION

MATERIAL: **ULTRACAPACITOR**		FLASH POINT: For Acetonitrile: 5.6°C (42°F)	
CAS #: Provided for components.		BOILING POINT: For Acetonitrile: 81.6°C (179°F)	
ODOR: Sweet, solvent.		ODOR THRESHOLD: For Acetonitrile: 42 ppm (detection)	
TLV: For Acetonitrile.		PEL: For Acetonitrile.	
STEL: For Acetonitrile.		IDLH: For Acetonitrile.	
CARCINOGEN: For Acetonitrile: EPA-CBD, EPA-D, TLV-A4		CLASSIFIED BY LISTING: Not applicable.	
HEALTH HAZARD RATING:	2	FLAMMABILITY HAZARD RATING:	3
PHYSICAL HAZARD RATING:	0		

Health Hazard Rating (Acute Toxic Properties)

A	Oral LD_{50} Rat	B	Dermal LD_{50} Rabbit
0	> 5000 mg/kg (Activated Carbon)	0	> 5000 mg/kg
1	> 500–5000 mg/kg (Acetonitrile)	1	> 1000–5000 mg/kg
2	> 50–500 mg/kg	2	> 200–1000 mg/kg
3	> 1–50 mg/kg	3	> 20–200 mg/kg
4	< 1 mg/kg	4	< 20 mg/kg
	No data available.		No data available.
C	Inhalation - gases LC_{50} Rat - 1 Hr	D	Dusts, fumes mists LC_{50} Rat - 1 hr
0	> 10000 ppm	0	> 200 mg/L
1	> 2000–10000 ppm	1	> 20–200 mg/L
2	> 200–2000 ppm	2	> 2–20 mg/L
3	> 20–200 ppm	3	> 0.2–2 mg/L
4	< 20 ppm	4	< 0.2 mg/L
	No data available.		No data available.
E	Skin Irritation - 4 Hr Exposure	D	Eye Irritation
0	Essentially non-irritating.	0	Essentially non-irritating.
1	Slightly irritating.	1	Slightly irritating but reversible within 7 days.
2	Primary irritant, sensitizer.	2	Irritating or moderately irritating, persisting for more than 7 days with reversible corneal opacity.
3	Severely irritating and/or corrosive.	3	Corrosive, irreversible corneal opacity.
4		4	
	No data available.		No data available.

II	FLAMMABILITY HAZARD CRITERIA
0	Minimal Hazard—Materials that will not burn in air when exposed to temperatures in excess of 1500°F for a period of 5 minutes.
1	Slight Hazard—Materials that require considerable preheating before burning. Materials with a flash point above 200°F or that burn when heated to 1500°F for 5 minutes.
2	Moderate Hazard—Materials that must be heated to a relatively high temperature before ignition can occur. Liquids with a flash point of 100–200°F; solids and semi-solids that readily release ignitable gases.
3	Serious Hazard—Materials that produce flammable, hazardous atmospheres with air under almost all ambient conditions or that are readily ignited (including liquids with a flash point below 73°F and a boiling point at or above 100°F or liquids with a flash point between 73 and 100°F). Class 1B and 1C flammable liquids.
4	Severe Hazard—Materials that will readily, rapidly or completely vaporize at atmospheric pressure and normal room temperature and burn readily (including gases, Class 1A flammable liquids, and explosive materials).
	No data available.

III	PHYSICAL HAZARD CRITERIA
0	Minimal Hazard—Materials that are normally stable and are not water reactive.
1	Slight Hazard—Materials that can become unstable at elevated temperatures or that may react with water with the release of some energy, but not violently.
2	Moderate Hazard—Materials that are normally unstable and readily undergo violent chemical reaction, but that do not detonate. This includes materials that react violently with water.
3	Serious Hazard—Materials that are of themselves detonable, but that require a strong initiating force or that must be heated under confinement or are sensitive to thermal or mechanical shock at elevated temperatures or that react explosively with water.
4	Severe Hazard—Materials that in themselves can detonate at normal temperature and pressure, including those that are sensitive to thermal or mechanical shock at normal temperature and pressure.
	No data available.