

# Class C Solutions Group

A business of MSC Industrial Supply Co.

## Safety Data Sheet

### Supply Co. - HI-TECH ELECTRONIC CLEANER, BD1044

Document Nbr: 004591  
Class C Parts IDs BD1044,BD1044-1

ARTLUX(R\*)  
CAR CARE SYSTEMS

MATERIAL SAFETY DATA SHEET

#### -----1. - COMPANY AND PRODUCT IDENTIFICATION -----

PRODUCT NAME: ELECTRONIC CLEANER

CAS NUMBER: NOT APPLICABLE TO MIXTURES

PRODUCT DESCRIPTION: NON FLAMMABLE AEROSOL

CONTACT ADDRESS:

ARTLUX, S.A. DE C.V.  
ACCESO II CALLE 3 #5  
ZONA INDUSTRIAL BENITO JUAREZ  
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#### -----2. - HAZARDOUS INGREDIENTS -----

NAME	CAS NUMBER	PERCENTAGE
1,1-DICHLORO-1-FLUOROETHANE	1717-00-6	90 - 94 %
CARBON DIOXIDE	124-38-9	3 - 5 %

ONLY HAZARDOUS COMPONENTS ACCORDING TO THE OSHA HAZARD COMMUNICATION STANDARD 29 CFR 1910.1200 ARE MENTIONED.

#### -----3. - CHEMICAL AND PHYSICAL PROPERTIES -----

PHYSICAL STATE: LIQUID

ODOR AND APPEARANCE: CLEAR, COLORLESS LIQUID WITH FAINT ETHER ODOR.

ODOR THRESHOLD: NE

SPECIFIC GRAVITY/DENSITY (G/ML): 1.25 @ 10 DEG. C/50 DEG. F

VAPOR PRESSURE: 10 PSIA @ 20 DEG. C / 68 DEG. F

VAPOR DENSITY (AIR=1): 4.0

VOLATILITY/VOL(%): 100

SOLUBILITY IN H<sub>2</sub>O: SLIGHT

EVAPORATION RATE: NE

BOILING POINT: 32 DEG. C / 89.6 DEG. F

FREEZING POINT: -103.5 DEG. C/-154 DEG. F

pH: NA

-----4. - HEALTH HAZARD INFORMATION -----

ROUTE OF ENTRY:

EXPOSURE CAN OCCUR BY SKIN AND EYE CONTACT, INGESTION AND INHALATION.

SKIN CONTACT: PROLONGED OR REPEATED CONTACT MAY CAUSE IRRITATION.

SKIN ABSORPTION: NE

EYE: MAY CAUSE SLIGHT IRRITATION.

INGESTION: NE

INHALATION:

EXCESSIVE INHALATION MAY CAUSE HEADACHE, NAUSEA, DIZZINESS AND DROWSINESS.

ACUTE OVER EXPOSURE EFFECTS:

EXCESSIVE INHALATION MAY AGGRAVATE HEART IRREGULARITIES.

CHRONIC OVER EXPOSURE EFFECTS: NE

SENSITIZATION: DOES NOT MEET WHMIS CRITERIA.

CARCINOGENICITY: DOES NOT MEET WHMIS CRITERIA.

TERATOGENICITY: DOES NOT MEET WHMIS CRITERIA.

MUTAGENICITY: DOES NOT MEET WHMIS CRITERIA.

REPRODUCTIVE TOXICITY: DOES NOT MEET WHMIS CRITERIA.

-----5. - FIRST AID -----

EYE:

FLUSH EYES WITH LARGE AMOUNT OF WATER FOR 15 MINUTES WHILE HOLDING EYELIDS OPEN. SEEK MEDICAL ATTENTION IF IRRITATION OCCURS OR PERSISTS.

SKIN:

WASH SKIN WITH WATER AND SOAP. SEEK MEDICAL ATTENTION IF IRRITATION OCCURS OR PERSISTS.

INGESTION:

DO NOT GIVE LIQUIDS IF PERSON IS UNCONSCIOUS OR VERY DROWSY. DO NOT INDUCE VOMITING. SEEK IMMEDIATE MEDICAL ATTENTION.

INHALATION:

REMOVE PERSON TO FRESH AIR IMMEDIATELY. IF BREATHING HAS STOPPED, APPLY ARTIFICIAL RESPIRATION AND ADMINISTER OXYGEN IF NECESSARY. SEEK MEDICAL ATTENTION. DO NOT GIVE ADRENALINE, EPINEPHRINE OR SIMILAR DRUGS FOLLOWING EXPOSURE TO THIS PRODUCT.

-----6. - FIRE AND EXPLOSION INFORMATION -----

FLAMMABILITY: NA.

MEANS OF EXTINCTION: WATER SPRAY, WATER FOG, CARBON DIOXIDE, DRY CHEMICAL.

FLASH POINT: NONE (TCC)

UPPER EXPLOSION LIMIT (%V): 15.5

LOWER EXPLOSION LIMIT (%V): 7.4

AUTO-IGNITION TEMPERATURE: 550 DEG. C/ 1022 DEG. F

HAZARDOUS COMBUSTION PRODUCTS:

HYDROGEN FLUORIDE, HYDROGEN CHLORIDE, OXIDES OF CARBON, CHLORINE, CARBONYL HALIDES.

EXPLOSION DATA: NE

SENSITIVITY TO IMPACT: NO

SENSITIVITY TO STATIC DISCHARGE: NO

-----7. - ACCIDENTAL SPILLS OR LEAKS -----

PROCEDURE IN CASE OF SPILLS OR LEAKS:

USE HALOGEN LEAK DETECTOR OR OTHER SUITABLE MEANS TO LOCATE LEAKS OR CHECK ATMOSPHERE. KEEP UPWIND.

EVACUATE ENCLOSED SPACES AND DISPERSE GAS WITH FLOOR-LEVEL FORCED-AIR VENTILATION. EXHAUST VAPORS OUTDOORS.

DO NOT SMOKE OR OPERATE INTERNAL COMBUSTION ENGINES. REMOVE FLAMES AND HEATING ELEMENTS.

DISPOSAL:

CARE MUST BE TAKEN WHEN USING OR DISPOSING OF CHEMICAL MATERIALS AND/OR THEIR CONTAINERS TO PREVENT ENVIRONMENTAL CONTAMINATION.

DISPOSAL CAN OCCUR ONLY IN PROPERLY PERMITTED FACILITIES. CHECK STATE AND LOCAL REGULATIONS FOR ANY ADDITIONAL REQUIREMENTS AS THESE MAY BE MORE RESTRICTIVE THAN FEDERAL LAWS AND REGULATIONS. DISPOSAL OF THIS MATERIAL MUST BE CONDUCTED IN COMPLIANCE WITH ALL FEDERAL, STATE AND LOCAL REGULATIONS.

-----8. - HANDLING AND STORAGE -----

STORAGE:

DO NOT GET IN EYES, ON SKIN OR CLOTHING. AVOID BREATHING VAPOR OR MIST. KEEP CONTAINER CLOSED. USE ONLY ADEQUATE VENTILATION. WASH THOROUGHLY AFTER HANDLING. KEEP AWAY FROM HEAT, SPARKS AND FLAME. EMPTIED CONTAINER RETAINS VAPOR AND PRODUCT RESIDUE. OBSERVE ALL LABELED SAFEGUARDS UNTIL CONTAINER IS DESTROYED. DO NOT REUSE THIS CONTAINER. DO NOT CUT OR WELD ON OR NEAR THIS CONTAINER.

HANDLING:

ALTHOUGH THIS MATERIAL IS STABLE IN LONG-TERM STORAGE IN CARBON STEEL CONTAINERS, IT MAY GRADUALLY DECOMPOSE IN THE PRESENCE OF FERRIC CHLORIDE. THE PRESENCE OF EXCESS LEVELS OF MOISTURE, ESPECIALLY AS A SEPARATE LAYER, SHOULD BE AVOIDED SINCE IT MAY LEAD TO CORROSION OF CARBON STEEL AND FORMATION OF FERRIC CHLORIDE. IT IS RECOMMENDED THAT CONTAINERS BE RAISED ABOVE FLOOR OR GROUND DURING EXTENDED STORAGE PERIODS TO PREVENT CONTAINER CORROSION DUE TO STANDING WATER. PRIOR TO PUTTING A STORAGE SYSTEM INTO SERVICE FOR THIS PRODUCT, OR AFTER MAINTENANCE, ENSURE THAT THE SYSTEM IS DRY AND OXYGEN-FREE. PURGING THE SYSTEM WITH DRY NITROGEN IS RECOMMENDED. IN ADDITION, CONTAINERS PREVIOUSLY EXPOSED TO HYDROGEN CHLORIDE (FOR EXAMPLE, FROM IMPURITIES IN CHLORINATED BLOWING AGENTS OR SOLVENTS), SHOULD BE THOROUGHLY CLEANED FIRST.

-----9. - EXPOSURE CONTROL/PERSONAL PROTECTION -----

PERSONAL PROTECTIVE EQUIPMENT:

WEAR SAFETY GLASSES AND USE IMPERVIOUS GLOVES. IF THE TLV OF THE PRODUCT IS EXCEEDED, AN APPROVED RESPIRATOR IS REQUIRED.

SPECIFIC ENGINEERING CONTROLS: LOCAL EXHAUST IS RECOMMENDED.

LEAK AND SPILL PROCEDURES:

SOAK UP WITH AN ABSORBENT MATERIAL AND PLACE IN A CLOSED CONTAINER.

WASTE DISPOSAL:

HAZARDOUS WASTE. DO NOT ALLOW PRODUCT TO ENTER THE ENVIRONMENT. CONSULT FEDERAL OR LOCAL AUTHORITIES FOR APPROVED DISPOSAL METHODS.

HANDLING PROCEDURES AND EQUIPMENT:

KEEP AWAY FROM HEAT, SPARKS AND OPEN FLAMES. WASH BEFORE EATING, DRINKING, USING TOBACCO PRODUCTS OR REST ROOMS.

STORAGE REQUIREMENTS:

KEEP IN A CLOSED, LABELED CONTAINER IN A VENTILATED AREA. USE CARBON STEEL CONTAINERS. EXCESS MOISTURE COULD LEAD TO CORROSION OF CARBON STEEL AND FORMATION OF FERRIC CHLORIDE. RAISE CONTAINER ABOVE FLOOR OR GROUND. ENSURE THAT THE SYSTEM IS DRY AND OXYGEN-FREE.

-----10. - REACTIVITY AND STABILITY -----

CHEMICAL STABILITY: STABLE

INCOMPATIBLE MATERIALS:

HYDROCHLORIC ACID, ALKALI, ALKALINE EARTH METALS, STRONG OXIDIZERS, FERRIC CHLORIDE.

CONDITIONS OF REACTIVITY: NE

HAZARDOUS DECOMPOSITION PRODUCTS:

HCL, VINYLIDENE CHLORIDE, 1-CHLORO-1-FLUOROETHYLENE, CARBONYL HALIDES IN THE PRESENCE OF FERRIC CHLORIDE AND OXYGEN.

-----11. - TOXICITY INFORMATION -----

NO ALLERGIC SKIN RESPONSE WAS OBSERVED IN GUINEA PIGS FOLLOWING REPEATED SKIN EXPOSURE TO THIS MATERIAL USING THE MAXIMIZATION PROCEDURE. INHALATION OF HIGH CONCENTRATIONS OF THIS MATERIAL (GENERALLY EXCEEDING 10000 PPM) PRODUCES A TRANSIENT ANESTHETIC EFFECT IN RODENTS. AS WITH MANY OTHER HALOGENATED HYDROCARBONS, INHALATION OF THIS MATERIAL, FOLLOWED BY INTRAVENOUS INJECTION OF EPINEPHRINE TO SIMULATE HUMAN STRESS REACTIONS, RESULTED IN HEART SENSITIZATION AT LEVELS ABOVE 5000-10000 PPM IN DOGS AND MONKEYS. LONGER TERM INHALATION STUDIES OF UP TO 13-WEEKS DURATION AT CONCENTRATIONS OF THIS MATERIAL UP TO 20000 PPM RESULTED IN MINOR CHANGES IN BODY WEIGHT AND SLIGHT CHANGES IN BLOOD CHEMISTRY IN RATS. REPEATED INHALATION OF THIS MATERIAL VAPORS AT LEVELS UP TO 15000 PPM FOR 16-WEEKS DID NOT PRODUCE EVIDENCE OF NERVOUS SYSTEM TOXICITY OR BEHAVIORAL EFFECTS IN RATS. LONG-TERM INHALATION (2-YEARS) OF HIGH CONCENTRATIONS OF THIS MATERIAL (5000 AND 20000 PPM) CAUSED AN INCREASE IN THE INCIDENCE OF BENIGN, NOT LIFE-THREATENING TUMORS OF THE TESTES IN RATS. NO EXPOSURE-RELATED EFFECTS OR TUMORS WERE OBSERVED AT 1500 PPM IN THIS STUDY. NO BIRTH DEFECTS WERE NOTED IN RABBITS EXPOSED TO THIS MATERIAL BY INHALATION DURING PREGNANCY AT LEVELS UP TO 12500 PPM; SIGNS OF MATERNAL TOXICITY WERE NOTED AT 4200 PPM OR

ABOVE. NO BIRTH DEFECTS WERE NOTED IN RATS EXPOSED TO THIS MATERIAL BY INHALATION DURING PREGNANCY AT LEVELS UP TO 20000 PPM; TOXIC EFFECTS WERE NOTED IN THE MOTHERS AND THEIR OFFSPRING. IN A REPRODUCTION STUDY, REDUCTIONS IN LITTER SIZE, TOTAL LITER WEIGHT AND GROWTH RATE WERE OBSERVED IN RATS EXPOSED BY INHALATION TO 20000 PPM OF THIS MATERIAL FOR 2-GENERATIONS. DELAYED SEXUAL MATURITY OF MALE OFFSPRING FROM PARENTS EXPOSED TO 8000 AND 20000 PPM MAY HAVE BEEN RELATED TO THE LOWER GROWTH RATE. THIS MATERIAL HAS GENERALLY PRODUCED NO GENETIC CHANGES IN STANDARD TESTS USING ANIMALS (IN VIVO TESTS) AND ANIMAL OR BACTERIAL CELLS. METABOLISM STUDIES IN RATS EXPOSED BY INHALATION SHOW THAT THIS MATERIAL IS NOT METABOLIZED OR ACCUMULATED IN THE BODY TO ANY SIGNIFICANT EXTENT. SINGLE EXPOSURE (ACUTE) STUDIES INDICATE:

ORAL: PRACTICALLY NON-TOXIC TO RATS (LD50 > 5,000 MG/KG)

DERMAL: NO MORE THAN SLIGHTLY TOXIC TO RATS (LD50 > 2,000 MG/KG)

INHALATION: PRACTICALLY NON-TOXIC TO RATS (4-HR LC50 61,647 PPM)

EYE IRRITATION: NON-IRRITATING TO SLIGHTLY IRRITATING TO RABBITS

SKIN IRRITATION: NON-IRRITATING TO RABBITS ( 4-HR AND 24-HR EXPOSURES)

-----12. - EXPOSURE LIMITS -----

1,1-DICHLORO-1-ELUOROETHANE:

TWA: 500 PPM

CARBON DIOXIDE:

TLV (TWA):

5000 PPM

9000 MG/M3

TLV (STEL):

30,000 PPM

54,000 MG/M3

TWA: TIME WEIGHTED AVERAGE

OSHA: OCCUPATIONAL SAFETY & HEALTH ADMINISTRATION

NIOSH: NATIONAL INSTITUTE FOR OCCUPATIONAL SAFETY AND HEALTH

ACGIH: THE AMERICAN CONFERENCE OF GOVERNMENTAL INDUSTRIAL HYGIENISTS

TLV: THRESHOLD LIMIT VALUE

PEL: PERMISSIBLE EXPOSURE LIMIT

-----13. - SIGNAL AND LABEL INFORMATION -----

NFPA CODE:

HEALTH 1

FIRE 0

REACTIVITY 0

PRECAUTION LABELS:

WARNING:

VAPOR REDUCES OXYGEN AVAILABLE FOR BREATHING.

HARMFUL IF INHALED.

NONFLAMMABLE VOLATILE LIQUID WHICH MAY CAUSE EYE IRRITATION OR DRYING OF THE SKIN.

-----14. - ADDITIONAL INFORMATION -----

THE INFORMATION PRESENTED HEREIN IS BASED ON DATA CONSIDERED TO BE ACCURATE TO THE DATE OF PREPARATION OF THIS MATERIAL SAFETY DATA SHEET. HOWEVER, A MSDS MAY NOT BE USED AS A COMMERCIAL SPECIFICATION SHEET OF MANUFACTURER OR SELLER, AND NO WARRANTY OR REPRESENTATION, EXPRESSED OR IMPLIED, IS MADE AS TO THE ACCURACY OR COMPREHENSIVENESS OF THE FOREGOING DATA AND SAFETY INFORMATION, NOR IS ANY AUTHORIZATION GIVEN OR IMPLIED TO PRACTICE ANY PATENTED INVENTION WITHOUT A LICENSE.

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