MATERIAL SAFETY DATA SHEET

99-0516

Prepared to OSHA, ACC, ANSI, NOHSC, WHMIS & 2001/58 EC Standards | MSDS Revision: 1.1 | MSDS Revision Date: 04/01/2011

1. PRODUCT IDENTIFICATION

1.1	Product Name:	**K & N AIR FILTER OIL AEROSOL**
1.2	Chemical Name:	See ingredients listed in section 3
1.3	Synonyms:	None reported by the manufacturer
1.4	Trade Names:	K & N Air Filter Oil Aerosol
1.5	Product Use:	Automotive Lubricant
1.6	Manufacturer's Name:	K&N Engineering, Inc.
1.7	Manufacturer's Address:	P.O. Box 1329, Riverside, CA 92502-1329 USA
1.8	Business Phone:	+1 (800) 858-3333
1.9	Emergency Phone:	**CHEMTREC +1 (800) 424-9300/+1 (703) 527-3887**

CHEMICAL RESPONSE CARD:	21
RESPONSE TEAM PPE:	
WHMIS:	
HEALTH:	2
FLAMMABILITY:	4
REACTIVITY:	0
PERSONAL PROTECTION:	X

2. HAZARD IDENTIFICATION

2.1 Hazard Identification:

This product is classified as a HAZARDOUS SUBSTANCE and as DANGEROUS GOODS according to the classification criteria of NOHSC:1088 (2004) and ADG Code (Australia). Extremely flammable aerosol. Vapor Harmful. Excessive inhalation of vapors may cause dizziness, nausea, and headache, loss of consciousness or even death if exposure is prolonged. May be harmful or fatal if swallowed. Repeated exposure may present additional hazards.

2.2 Routes of Entry:

Inhalation:	YES	Absorption:	YES	Ingestion:	YES

2.3 Effects of Exposure:

EYES: May cause irritation, redness and tearing.
SKIN: may cause irritation, defatting, drying and cracking of skin.
INGESTION: May cause, gastrointestinal irritation, nausea, vomiting and diarrhea. Aspiration of material into the lungs may cause chemical pneumonitis, which can be fatal. Can be fatal if inhaled or ingested.
INHALATION: Vapors may be irritating to nose, throat and respiratory tact. Excessive inhalation of vapors may cause kidney damage, cardiac arrhythmia and Central Nervous System effects including dizziness, weakness, fatigue, nausea, headache and possible unconsciousness.

2.4 Symptoms of Exposure:

EYES: May cause irritation, redness and tearing.
SKIN: may cause irritation, defatting, drying and cracking of skin.
INGESTION: May cause, gastrointestinal irritation, nausea, vomiting and diarrhea. Aspiration of material into the lungs may cause chemical pneumonitis, which can be fatal. Can be fatal if inhaled or ingested.
INHALATION: Vapors may be irritating to nose, throat and respiratory tact. Excessive inhalation of vapors may cause kidney damage, cardiac arrhythmia and Central Nervous System effects including dizziness, weakness, fatigue, nausea, headache and possible unconsciousness.

2.5 Acute Health Effects:

EYES: May cause irritation, redness and tearing.
SKIN: may cause irritation, defatting, drying and cracking of skin.
INGESTION: May cause, gastrointestinal irritation, nausea, vomiting and diarrhea. Aspiration of material into the lungs may cause chemical pneumonitis, which can be fatal. Can be fatal if inhaled or ingested.
INHALATION: Vapors may be irritating to nose, throat and respiratory tact. Excessive inhalation of vapors may cause kidney damage, cardiac arrhythmia and Central Nervous System effects including dizziness, weakness, fatigue, nausea, headache and possible unconsciousness.

2.6 Chronic Health Effects:

Prolonged or repeated skin contact may cause irritation, dry skin, skin rash and inflammation.

2.7 Target Organs:

Eyes and upper respiratory tract.

2.8 Toxicological Properties:

None reported by the manufacturer.

See Section 16 for Additional Definitions of Terms Used.

NOTE: All WHMIS required information is included – it is located in appropriate sections based on the ANSI Z400.1-2004 format.

3. COMPOSITION & INGREDIENTS

CHEMICAL NAME(S)	CAS No.	RTECS No.	EINECS No.	%	EXPOSURE LIMITS IN AIR (mg/m³) ACGIH ppm TLV	ACGIH ppm STEL	NOHSC ppm ES-TWA	NOHSC ppm ES-STEL	NOHSC ppm ES-PEAK	OSHA ppm PEL	OSHA ppm STEL	OSHA ppm IDLH	OTHER
DISTILLATES (PETROLEUM), HYDROTREATED HEAVY PARAFFINIC	64742-54-7	PY8035501	265-157-1	≤ 100	5	NF	NF	NF	NF	5	NF	NF	MIST
1-DECENE, HOMOPOLYMER, HYDROGENATED	68037-01-4	NA	500-183-1	≤ 3.0	NA	NA	NF	NF	NF	NA	NA	NA	
C.I. SOLVENT RED 164 (DYE)	71819-51-7	NA	NA	≤ 0.1	NA	NA	NF	NF	NF	NA	NA	NA	
PETROLEUM GASES, LIQUIFIED SWEETENED	68476-86-8	NA	270-705-8	NA	10	NA	NF	NF	NF	10	NA	NA	MIST

4. FIRST AID MEASURES

4.1 First Aid:

EYES: Immediately flush eyes with plenty of running water for at least 15 minutes, lifting upper and lower lids, occasionally. If irritation persists, repeat flushing. Get medical attention.

SKIN: Wash thoroughly with soap and water. If irritation persists, seek medical attention. Remove contaminated clothing and wash before reuse.

INGESTION: If ingested call physician or poison control center immediately. Do no induce vomiting. Rinse mouth with water. Aspiration of material into lungs due to vomiting may cause chemical pneumonitis which can be fatal.

INHALATION: Remove affected person to fresh air. If breathing if difficult, administer oxygen. If breathing stops give artificial respiration. Keep person warm, quiet and get medical attention.

4.2 Medical Conditions Aggravated by Exposure:

Personnel with pre-existing skin disorders should avoid repeated or prolonged contact with this product.

HEALTH	2
FLAMMABILITY	4
REACTIVITY	0
PROTECTIVE EQUIPMENT	X

EYES	SKIN		

5. FIREFIGHTING MEASURES

5.1 Flashpoint & Method:

> 232 °C (450 °F) liquid

5.2 Autoignition Temperature:

NA

5.3 Flammability Limits: Lower Explosive Limit (LEL): NA Upper Explosive Limit (UEL): NA

5.4 Fire & Explosion Hazards:

The flammability of an aerosol by WHMIS definition is determined by its flame-extension or its flashback. The flame extension of this product is great than 45 cm. Fire Code: Level 3 Aerosol (as per NFPA 30B). Do not use in presence of open flames or sparks. Do not place in hot water or near radiators, stoves or other sources of heat. Exposure to heat or sunlight may cause cans to burst and propel contents. Water from fog nozzles may be helpful in cooling un-ruptured containers to prevent build-up. Burning may produce hazardous products of combustion including fumes, smoke, carbon dioxide and/or carbon monoxide.

5.5 Extinguishing Methods:

Dry chemical, foam, and carbon dioxide.

5.6 Firefighting Procedures:

Cool containing vessels with water spray in order to prevent pressure build-up, autoignition or explosion. Avoid spreading burning liquid with water used to cool containers. Keep containers cool until well after the fire is out. Prevent runoff from fire control or dilution from entering sewers, drains, drinking water supply, or any natural waterway. Firefighters should wear full-face, self-contained breathing apparatus (MSHA/NIOSH approved or the equivalent) and impervious clothing.

6. ACCIDENTAL RELEASE MEASURES

6.1	Spills: **Secure spill area, eliminate all sources of ignition, and maximize ventilation. Stop spill or leak at source if safely possible. Deny entry to all unprotected individuals. Individuals involved in the cleanup must wear appropriate personal protective equipment. Recover free liquid or cover with inert absorbent material and place into appropriate container(s) for disposal. For small liquid spills, absorb or cover with dry earth, sand, or other inert non-combustible absorbent material and place into waste containers for later disposal. Contain large spills to maximize product recovery or disposal. If necessary, dike well ahead of the spill to prevent runoff into drains, sewers or any natural waterway or drinking supply. Contact appropriate local and/or provincial authorities for assistance and/or reporting requirements. For water spills, remove from surface by skimming or with suitable absorbents. If allowed by federal & provincial environmental agencies, sinking and/or suitable dispersants may be used in unconfined waters. Consult an expert on disposal of recovered material. Ensure disposal on compliance with government requirements & secure conformity to local disposal regulations. Notify the appropriate federal & provincial authorities immediately. Take all additional action necessary to prevent & remedy the adverse effects of the spill.**

7. HANDLING & STORAGE INFORMATION

7.1	Work & Hygiene Practices: **Do not use in the presence of open flame, sparks or ignition sources. Keep away from heat. Avoid breathing vapors or spray mists. If ingested, seek medical advice immediately and show the container or the label. Avoid contact with skin and eyes. After handling, always wash hand thoroughly with soap and water.**
7.2	Storage & Handling: **Store in a cool, dry place. Do not place in hot water or near radiators, stoves or sources of heat. Do not puncture or incinerate container or store at temperatures over 50°C or in direct sunlight.** **Maximum recommended shelf-life: 36 months.**
7.3	Special Precautions: **Contents under pressure. Container may explode if heated. Direct inhalation of spray may be harmful. Keep out of reach of children.**

8. EXPOSURE CONTROLS & PERSONAL PROTECTION

8.1	Ventilation & Engineering Controls: **The use of mechanical dilution ventilation is recommended to maintain airborne concentrations below the recommended occupational exposure limits, whenever this material is used in a confined space, is heated above normal temperatures (up to 38ºC) or is agitated.**
8.2	Respiratory Protection: **Vaporization or misting is not expected at ambient temperatures. Therefore, the need for respiratory protection is not anticipated under normal use conditions and with adequate ventilation. If elevated airborne concentrations above applicable workplace exposure levels are anticipated, a NIOSH-approved organic vapor respirator equipped with a dust/mist pre-filter should be used. Protection factors vary depending upon the type of respirator used. Respirators should be used in accordance with OSHA requirements (29 CFR 1910.134).**
8.3	Eye Protection: **Safety glasses equipped with side shields should be adequate protection under most conditions of use. Wear goggles and/or face shield if splashing or spraying is anticipated. Wear goggles and face shield if material is heated above 125°F (51°C). Have suitable eye wash water available.**
8.4	Hand Protection: **Use gloves constructed of chemical resistant materials such as neoprene or heavy nitrile rubber if frequent or prolonged contact is expected. Use heat-protective gloves when handling product at elevated temperatures.**
8.5	Body Protection: **Avoid prolonged and/or repeated skin contact. Use clean and impervious protective clothing (e.g., neoprene or Tyvek®) if splashing or spraying conditions are present. Protective clothing should include long-sleeves, apron, boots and additional facial protection. Remove oil contaminated clothing. Launder oil contaminated clothing before reusing. Contaminated leather goods should be removed promptly and discarded.**

9. PHYSICAL & CHEMICAL PROPERTIES

9.1	Density:	**0.864 (7.197 lbs/gallon) - liquid**
9.2	Boiling Point:	**> 260 °C (500 °F)**
9.3	Melting Point:	**NA**
9.4	Evaporation Rate:	**NA**
9.5	Vapor Pressure:	**NA**
9.6	Molecular Weight:	**NA**
9.7	Appearance & Color:	**Red Oily Liquid**
9.8	Odor Threshold:	**Characteristic Petroleum Odor**
9.9	Solubility:	**Negligible @ 25 °C**
9.10	pH	**NA**
9.11	Viscosity:	**≥ 7.5 cSt @ 100 °C**
9.12	Coefficient Oil/Water Distribution:	**NA**
9.13	Additional Information:	**NA**

10. STABILITY & REACTIVITY

10.1	Stability: **Stable, when used as intended.**
10.2	Hazardous Decomposition Products: **Carbon, nitrogen and sulfur oxides, hydrocarbons, phosgene.**
10.3	Hazardous Polymerization: **Will not occur.**
10.4	Conditions to Avoid: **Heat, sparks, open flame and all possible ignition sources.**
10.5	Incompatible Substances: **Avoid contact with strong oxidizing agents, strong reducing agents, strong acids and strong alkalis.**

11. TOXICOLOGICAL INFORMATION

11.1	Toxicity Data: **Based on animal testing from similar materials & products, the acute toxicity of this product is expected to be: Distillates, Petroleum, Solvent-Refined, Heavy Paraffinic – LD_{50} (oral, rat) > 5000 mg/kg; LD_{50} (dermal, rabbit) > 2000 mg/kg.**	
11.2	Acute Toxicity: **Mineral oil mists derived from highly refined oils are reported to have low acute and sub-acute toxicities in animals. Effects from single and short-term repeated exposures to high concentrations of mineral oil mists well above applicable workplace exposure levels include lung inflammatory reaction, lipoid granuloma formation and lipoid pneumonia. In acute and sub-acute studies involving exposures to lower concentrations of mineral oil mists at or near current work place exposure levels produced no significant toxicological effects.**	
11.3	Chronic Toxicity: **In long term studies (up to two years) no carcinogenic effects have been reported in any animal species tested.**	
11.4	Suspected Carcinogen: **Carc. Cat. 2 – suspected human carcinogen (Annex I of EU Directive 67/548/EEC); Not listed by OSHA, NTP or ACGIH.**	
11.5	Reproductive Toxicity:	
	Mutagenicity:	**This product is not expected to cause mutagenic effects in humans.**
	Embryotoxicity:	**This product is not expected to cause embryotoxic effects in humans.**
	Teratogenicity:	**This product is not expected to cause teratogenic effects in humans.**
	Reproductive Toxicity:	**This product is not expected to cause reproductive harm in humans.**
11.6	Irritancy of Product: **NA**	
11.7	Biological Exposure Indices: **NA**	
11.8	Physician Recommendations: **The viscosity range of the product(s) represented by this MSDS is between 100 and 400 SUS at 100°F. Accordingly, upon ingestion there is a moderate risk of aspiration. Careful gastric lavage or emesis may be considered to evacuate large quantities of material. Subcutaneous or intramuscular injection requires prompt surgical debridement.**	

12. ECOLOGICAL INFORMATION

12.1	Environmental Stability: **Analysis for ecological effects has not been conducted on this product. However, if spilled, this product and any contaminated soil or water may be harmful to human, animal, and aquatic life. Also, the coating action associated with petroleum and petroleum products can be harmful or fatal to aquatic life and waterfowl.**
12.2	Effect on Plants & Animals: **An environmental fate analysis has not been conducted on this specific product. However, plants and animals may experience harmful or fatal effects when coated with petroleum-based products.**
12.3	Effect on Aquatic Life: **Petroleum-based (mineral) lube oils will normally float on water. In stagnant or slow-flowing waterways, an oil layer can cover a large surface area. As a result, this oil layer might limit or eliminate natural atmospheric oxygen transport into the water. With time, if not removed, oxygen depletion in the waterway can result in a loss of marine life or create an anaerobic environment. This material contains phosphorus which is a controlled element for disposal in effluent waters in most sections of North America. Phosphorus is known to enhance the formation of algae. Severe algae growth can reduce oxygen content in the water possibly below levels necessary to support marine life.**

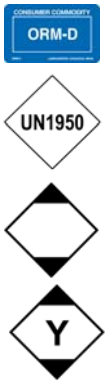
13. DISPOSAL CONSIDERATIONS

13.1	Waste Disposal: **Dispose of in accordance with local & state or provincial hazardous waste laws. U.S. EPA Characteristic Hazardous Waste: D001 (ignitability)**
13.2	Special Considerations: **If the material is unsuitable for recycling or reclamation, enclosed-controlled incineration is recommended unless otherwise prohibited by local ordinance.**

14. TRANSPORTATION INFORMATION

The basic description (ID Number, proper shipping name, hazard class & division, packing group) is shown for each mode of transportation. Additional descriptive information may be required by 49 CFR, IATA/ICAO, IMDG and the CTDGR.

14.1	49 CFR (GND): **CONSUMER COMMODITY, ORM-D**
14.2	IATA (AIR): **ID8000, CONSUMER COMMODITY, 9, PACKING INSTRUCTION Y963**
14.3	IMDG (OCN): **UN1950, AEROSOLS, 2.1, LTD QTY**
14.4	TDGR (Canadian GND): **LIMITED QUANTITY / QUANTITÉ LIMITÉE**
14.5	ADR/RID (EU): **UN1950, AEROSOLS, 2.1, LTD QTY**
14.6	MEXICO (SCT): **UN1950, AEROSOLES, 2.1, CANTIDAD LIMITADA**
14.7	ADGR (AUS): **UN1950, AEROSOLS, 2.1, LTD QTY**



15. REGULATORY INFORMATION

15.1	SARA Reporting Requirements: **This product does not contain any substances that are subject to SARA Section 313 reporting requirements.**
15.2	SARA Threshold Planning Quantity: **NA**
15.3	TSCA Inventory Status: **All chemical substances of this product are listed on the TSCA inventory or are otherwise exempt from inventory status.**
15.4	CERCLA Reportable Quantity (RQ): **NA**
15.5	Other Federal Requirements: **NA**
15.6	Other Canadian Regulations **All chemical substances of this product are listed on the CEPA DSL/NDSL or are exempt from list requirements. This product has been classified according to the hazard criteria of the CPR and the MSDS contains all of the information required by the CPR.**
15.7	State Regulatory Information: **New Jersey Worker & Community Right to Know Act, N.J.A.C. 8:59-5 Labeling Information: Lubricating Oil Distillates (Petroleum), Hydrotreated Heavy Paraffinic can be found on the following state right to know lists: California, Massachusetts, Minnesota, New Jersey, Pennsylvania, and Rhode Island.**
15.8	67/548/EEC (European Union) Requirements: **The primary components of this product are listed in Annex I of EU Directive 67/548/EEC:** **Distillates (Petroleum), Hydrotreated Heavy Paraffinic: (Xi) Irritant.** **Risk Phrases (R): 36-66 – Irritating to eyes. Repeated exposure may cause skin dryness or cracking.** **Safety Phrases (S): (2)-9-16 - Keep out of reach of children. Keep container in a well-ventilated place. Keep away from sources of ignition. No smoking.** **Petroleum Gases, Liquefied Sweetened: (F+) Highly Flammable.** **Risk Phrases (R): 12 – Extremely flammable.** **Safety Phrases (S): (2)-9-16-45-53 – Keep out of reach of children. Keep container in a well-ventilated place. Keep away from sources of ignition. No smoking. Avoid exposure-obtain special instructions before use. In case of accident or if you feel unwell, seek medical advice immediately (show the label where possible).** **HazChem Code: None allocated. Poison schedule: S5**

16. OTHER INFORMATION

16.1	Other Information: **NA**
16.2	Terms & Definitions: **Please see last page of this MSDS.**
16.3	Disclaimer: This Material Safety Data Sheet is offered pursuant to OSHA's Hazard Communication Standard, 29 CFR §1910.1200. Other government regulations must be reviewed for applicability to this product. To the best of ShipMate's & K & N Engineering's knowledge, the information contained herein is reliable and accurate as of this date; however, accuracy, suitability or completeness are not guaranteed and no warranties of any type, either expressed or implied, are provided. The information contained herein relates only to the specific product(s). If this product(s) is combined with other materials, all component properties must be considered. Data may be changed from time to time. Be sure to consult the latest edition.
16.4	Prepared for: **K & N Engineering, Inc.** **PO Box 1329** **Riverside, CA 92502** **Phone: +1 (800) 858-3333** **Fax: +1 (951) 826-4001** **e-mail: tech@knfilters.com**
16.5	Prepared by: **Steven Charles Hunt** **ShipMate, Inc.** **780 Buckaroo Trail, Suite D** **Sisters, OR 97759 USA** **Phone: +1 (310) 370-3600** **Fax: +1 (310) 370-5700** **e-mail: shipmate@shipmate.com**

DEFINITIONS OF TERMS

A large number of abbreviations and acronyms appear on a MSDS. Some of these that are commonly used include the following:

GENERAL INFORMATION:

CAS No.	Chemical Abstract Service Number

EXPOSURE LIMITS IN AIR:

ACGIH	American Conference on Governmental Industrial Hygienists
TLV	Threshold Limit Value
OSHA	U.S. Occupational Safety and Health Administration
PEL	Permissible Exposure Limit
IDLH	Immediately Dangerous to Life and Health

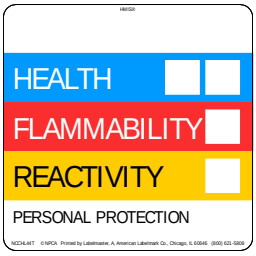
FIRST AID MEASURES:

CPR	Cardiopulmonary resuscitation - method in which a person whose heart has stopped receives manual chest compressions and breathing to circulate blood and provide oxygen to the body.

HAZARDOUS MATERIALS IDENTIFICATION SYSTEM: HMIS

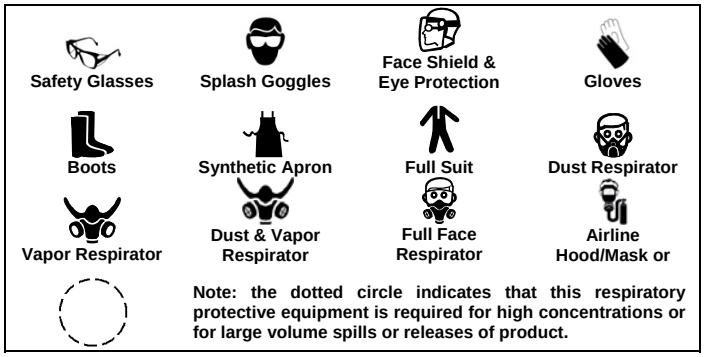
HEALTH, FLAMMABILITY & REACTIVITY RATINGS:

0	Minimal Hazard
1	Slight Hazard
2	Moderate Hazard
3	Severe Hazard
4	Extreme Hazard



PERSONAL PROTECTION RATINGS:

A		**G**	
B		**H**	
C		**I**	
D		**J**	
E		**K**	
F		**X**	**Consult your supervisor or S.O.P. for special handling directions.**



Note: the dotted circle indicates that this respiratory protective equipment is required for high concentrations or for large volume spills or releases of product.

FLAMMABILITY LIMITS IN AIR:

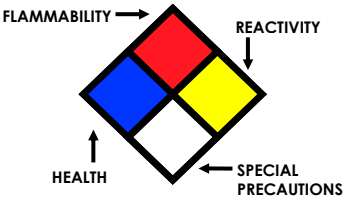
Autoignition Temperature	Minimum temperature required to initiate combustion in air with no other source of ignition
LEL	Lower Explosive Limit - lowest percent of vapor in air, by volume, that will explode or ignite in the presence of an ignition source
UEL	Upper Explosive Limit - highest percent of vapor in air, by volume, that will explode or ignite in the presence of an ignition source

OTHER STANDARD ABBREVIATIONS:

NA	Not Available
NR	No Results
NE	Not Established
NF	Not Found
ND	Not Determined
ML	Maximum Limit
SCBA	Self-Contained Breathing Apparatus

NATIONAL FIRE PROTECTION ASSOCIATION: NFPA HAZARD RATINGS:

0	Minimal Hazard
1	Slight Hazard
2	Moderate Hazard
3	Severe Hazard
4	Extreme Hazard
ACD	Acidic
ALK	Alkaline
COR	Corrosive
~~W~~	Use No Water
OX	Oxidizer



TOXICOLOGICAL INFORMATION:

LD_{50}	Lethal Dose (solids & liquids) which kills 50% of the exposed animals s
LC_{50}	Lethal concentration (gases) which kills 50% of the exposed animal
ppm	Concentration expressed in parts of material per million parts
TD_{lo}	Lowest dose to cause a symptom
TCLo	Lowest concentration to cause a symptom
TD_{lo}, LD_{lo}, & LD_o or TC, TC_o, LC_{lo}, & LC_o	Lowest dose (or concentration) to cause lethal or toxic effects
IARC	International Agency for Research on Cancer
NTP	National Toxicology Program
RTECS	Registry of Toxic Effects of Chemical Substances
BCF	Bioconcentration Factor
TL_m	Median threshold limit
log K_{OW} or log K_{OC}	Coefficient of Oil/Water Distribution

REGULATORY INFORMATION:

CPR	Canada's Controlled Product Regulations
DOT	U.S. Department of Transportation
EPA	U.S. Environmental Protection Agency
EU	European Union (European Union Directive **67/548/EEC)**
DSL	Canadian Domestic Substance List
MAK	Mandat und die Arbeitsweise der Kommission (Work Area Commission)
NDSL	Canadian Non-Domestic Substance List
NOHSC	National Occupational Health & Safety Code (Australia)
PSL	Canadian Priority Substances List
TC	Transport Canada
TSCA	U.S. Toxic Substance Control Act
WHMIS	Canadian Workplace Hazardous Material Information System

EC INFORMATION:

C	**E**	**F**	**N**	**O**	**T+**	**Xi**	**Xn**
Corrosive	Explosive	Flammable	Harmful	Oxidizing	Toxic	Irritant	Harmful

WHMIS INFORMATION:

A	**B**	**C**	**D1**	**D2**	**D3**	**E**	**F**