



# MATERIAL SAFETY DATA SHEET

## SECTION 1 — CHEMICAL PRODUCT & COMPANY IDENTIFICATION

**Product Name:** Lily White/Crystal Clear Sewing Machine Oil

**Product Code:** 3001, 3002, 3020, 3021, 3023, 3030, 3031, 3032 & 3033

**Date:** 05/01/07

**Manufacturer's name and address:** Refer to supplier

**Supplier name and address:**

### ***ALBATROSS USA INC./EXPERT WORLDWIDE***

36-41 36<sup>th</sup> Street  
Long Island City, New York  
United States  
11106  
718-392-6272

5439 San Fernando Road West  
Los Angeles, California  
United States  
90039  
818-543-5850

**Emergency Telephone #:** Chemtrec (Day or Night) 800-424-9300  
(For Chemical Emergency: Spill, Leak, Fire, Exposure or Accident)

**CAS Number:** Mixture

**Material uses:** This product is intended for use as a lubricant in sewing machines. Use in other applications may result in higher exposures and require additional controls, such as local exhaust ventilation and personal protective equipment.

This Material Safety Data Sheet applies to the listed products and synonym descriptions for Hazard Communication purposes only. This product contains ingredients that are considered to be hazardous as defined by the OSHA Hazard Communication Standard (29 CFR 1910.1200).

## SECTION 2 — COMPOSITION/INFORMATION ON INGREDIENTS

<u>Name</u>	<u>CAS Number</u>	<u>Concentration ( % )</u>
Distillates (petroleum), severely hydrotreated heavy paraffinic	64742-54-7	0 – 100
Distillates (petroleum), solvent-refined heavy paraffinic	64741-88-4	0 – 100
Residual oils, (petroleum), solvent-refined	64742-01-4	0 – 100

## SECTION 3 — HAZARDS IDENTIFICATION

Hazards associated with handling of this material are normally minimal. Vapor inhalation under ambient conditions is normally not a problem. Skin hazards low when good hygiene practices followed. However, as a precaution, exposure to liquids, vapors, or mists should be minimized. Observe good personal hygiene.

**Physical State:** Liquid

**Emergency Overview:** Caution!

CAUSES SKIN IRRITATION.

CONTAINS MATERIAL WHICH CAUSES DAMAGE TO THE FOLLOWING ORGANS.: RESPIRATORY TRACT, SKIN, EYE, LENS OR CORNEA.

Do not ingest. Do not get in eyes or on skin or clothing. Avoid breathing vapour or mist. Keep away from heat, sparks and flame. Keep container closed. Use only with adequate ventilation. Wash thoroughly after handling. Risk of cancer depends on duration and level of exposure.

**Routes of Entry:** Dermal contact. Eye contact. Inhalation. Ingestion.

**Potential acute health effects**

**Eyes:** Irritating to eyes.

**Skin:** Only mildly irritating to skin under normal use. Prolonged or repeated contact may cause moderate irritation, defatting (cracking), redness, itching, inflammation, dermatitis and possible secondary infection. High pressure skin injections are **SERIOUS MEDICAL EMERGENCIES**. Injury may not appear serious at first. Within a few hours, tissues will become swollen, discoloured and extremely painful.

**Inhalation:** Slightly irritating to the respiratory system.

**Ingestion:** Practically non-toxic if swallowed.

**Medical conditions aggravated by over-exposure:**

Repeated or prolonged contact with spray mist may produce eye and skin irritation. Repeated or prolonged exposure to spray or mist may produce respiratory tract irritation, leading to frequent attacks of bronchial infection.

**Over exposure signs/symptoms:**

Only mildly irritating to skin & respiratory system under normal use. Irritating to eyes. Practically non-toxic if swallowed.

See toxicological information (section 11)

## SECTION 4 — FIRST AID MEASURES

**Eye Contact:** Flush immediately with large amounts of water for at least 15 minutes. Eyelids should be held away from the eyeball to ensure thorough rinsing. Seek medical advice if pain or redness continues.

**Skin Contact:** In case of contact, immediately flush skin with plenty of water. Remove contaminated clothing and shoes. Wash clothing before reuse. Clean shoes thoroughly before reuse. Get medical attention. Wash exposed area thoroughly with soap and water. Remove contaminated clothing promptly and launder before reuse. Contaminated leather goods should be discarded. If irritation persists or symptoms described in the MSDS develop, seek medical attention. High pressure skin injections are **SERIOUS MEDICAL EMERGENCIES**. Get immediate medical attention.

**Inhalation:** If inhaled, remove to fresh air. If breathing is difficult, give oxygen. If not breathing, give artificial respiration. Get medical attention.

**Ingestion:** If potentially dangerous quantities of this material have been swallowed, call a physician immediately. Do not induce vomiting unless directed to do so by medical personnel.

**Notes to Physician:** Treat symptomatically. In case of ingestion, gastric lavage with activated charcoal can be used promptly to prevent absorption. Consideration should be given to the use of an intratracheal tube, to prevent aspiration. Individuals with chronic pulmonary disease will be more seriously impaired, and recovery from inhalation exposure may be complicated. In case of skin injection, prompt debridement of the wound is necessary to minimize necrosis and tissue loss.

## SECTION 5 — FIRE FIGHTING MEASURES

**Flammability of the product:** Combustible

**Auto-ignition Temp:**

**Flash point:** Open cup: 176.69°C (350°F) (Cleveland)

**Products of combustion:** These products are carbon oxides (CO, CO<sub>x</sub>), nitrogen and sulphur oxides (NO<sub>x</sub>, SO<sub>x</sub>), particulate matter, VOC's.

**Fire hazards in the presence of various substances:** COMBUSTIBLE

**Explosion hazards in the presence of various substances:** Risk of explosion of the product in the presence of mechanical impact: Not available.  
Risk of explosion of the product in the presence of static discharge: Not available.

**Fire-fighting media and instructions:** Combustible Liquid. Use dry chemical, foam or carbon dioxide to extinguish the fire. Consult foam manufacturer for appropriate media, application rates and water/foam ratio. Water can be used to cool fire-exposed containers, structures and to protect disperse gas or vapour and to protect personnel attempting to stop a leak. Use water to flush spills away from sources of ignition. Do not flush down public sewers.

Collect contaminated fire-fighting water separately. It must not enter the sewage system. Dike area of fire to prevent runoff. Decontaminate emergency personnel and equipment with soap and water.

Combustible liquid and vapour.

**Special protective equipment for fire-fighters:** Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode

**Special remarks on fire hazards:** No additional remark.

**Special remarks on explosion hazards:** No additional remark.

## SECTION 6 — ACCIDENTAL RELEASE MEASURES

**Personal precautions:** Immediately contact emergency personnel. Eliminate all ignition sources. Keep unnecessary personnel away. Use suitable protective equipment (section 8). Do not touch or walk through spilled material. Tanks, vessels or other confined spaces which have contained product should be freed of vapors before entering. The container should be checked to ensure a safe atmosphere before entry. Empty containers may contain toxic, flammable/combustible or explosive residues or vapors. Do not cut, grind, drill, weld or reuse empty containers that contained this product. Do not transfer this product to another container unless the container receiving the product is labelled with proper DOT shipping name, hazard class and other information that describes the product and its hazards.

**Environmental precautions:**

Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers. If facility or operation has an “oil or hazardous substance contingency plan”, activate its procedures. Stay upwind and away from spill. Wear appropriate protective equipment including respiratory protection as conditions warrant. Do not enter or stay in area unless monitoring indicates that it is safe to do so. Isolate hazard area and restrict entry to emergency crew. Extremely flammable. Review Fire Fighting Measures section before proceeding with clean up. Keep all sources of ignition (flames, smoking, flares, etc.) and hot surfaces away from release. Contain spill in smallest possible area. Recover as much product as possible (e.g., by vacuuming). Stop leak if it can be done without risk. Use water spray to disperse vapors. Spilled material may be absorbed by an appropriate absorbent, and then handled in accordance with environmental regulations. Prevent spilled material from entering sewers, storm drains, other unauthorized treatment or drainage systems and natural waterways. Contact fire authorities and appropriate federal, state and local agencies. If spill of any amount is made into or upon navigable waters, the contiguous zone, or adjoining shorelines, contact the National Response Center at 800-424-8802. For highway or railway spills, contact Chemtrec at 800-424-9300.

**Methods for cleaning up:**

If emergency personnel are unavailable, contain spilled material. For small spills, add absorbent (soil may be used in the absence of other suitable materials) and use a non-sparking or explosion-proof means to transfer material to a sealable, appropriate container for disposal. For large spills, dike spilled material or otherwise contain it to ensure runoff does not reach a waterway. Place spilled material in an appropriate container for disposal.

## SECTION 7 — HANDLING AND STORAGE INFORMATION

**Handling:**

Do not ingest. Do not get in eyes, on skin or on clothing. Keep container closed. Use only with adequate ventilation. Wash thoroughly after handling. Avoid breathing vapour or mist. Keep away from heat, sparks and flame. To avoid fire or explosion, dissipate static electricity during transfer by grounding and bonding containers and equipment before transferring material. Use explosion-proof electrical (ventilating, lighting and material handling) equipment. Use good personal hygiene practices. After handling this product, wash hands before eating, drinking, or using toilet facilities.

**Storage:**

Store in a segregated and approved area. Keep container in a cool, well-ventilated area. Keep container tightly closed and sealed until ready for use. Avoid all possible sources of ignition (spark or flame).

## SECTION 8 — EXPOSURE CONTROLS/PERSONAL PROTECTION

**Engineering controls:** Provide exhaust ventilation or other engineering controls to keep the airborne concentrations of vapors below their respective occupational exposure limits. Ensure that eyewash stations and safety showers are close to the workstation location.

### Personal protection

**Eyes:** Safety eyewear complying with an approved standard should be used when at risk assessment indicates this is necessary to avoid exposure to liquid splashes, mists or dusts.

**Skin:** Personal protective equipment for the body should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product. Flame Retardant Clothing is recommended.

**Respiratory:** Use a properly fitted, air-purifying or air-fed respirator complying with an approved standard if a risk assessment indicates this is necessary. Respirator selection must be based on known or anticipated exposure levels, the hazards of the product and the safe working limits of the selected respirator.

**Hands:** Chemical-resistant, impervious gloves complying with an approved standard should be worn at all times when handling chemical products if a risk assessment indicates this is necessary.

**Personal protective equipment:** Consult your supervisor or S.O.P. for special handling direction.

**Personal protection in case of a large spill:** Splash goggles. Full suit. Vapor respirator. Boots. Gloves. Self-contained breathing apparatus (SCBA) should be used to avoid inhalation of the product. Suggested protective clothing might not be adequate. Consult a specialist before handling this product.

### Component

Oil Mist, Mineral

### Exposure Limits

**ACGIH TLV (United States, 9/2004). Notes: Adopted Values enclosed are those for which changes are proposed. Consult the Notice of Intended Changes for current proposal. See Notice of Intended changes.**

STEL: 10 mg/m<sup>3</sup> 15 minute/minutes. Form: All forms

TWA: 5 mg/m<sup>3</sup> 8 hour/hours. Form: All forms.

**NIOSH REL (United States, 6/2001).**

STEL: 10 mg/m<sup>3</sup> 15 minute/minutes. Form: Mist

TWA: 5 mg/m<sup>3</sup> 10 hour/hours. Form: Mist

**OSHA PEL (United States, 6/1993).**

TWA: 5 mg/m<sup>3</sup> 8 hour/hours. Form: All forms

**Consult local authorities for acceptable exposure limits.**

## SECTION 9 — PHYSICAL AND CHEMICAL PROPERTIES

**Physical State:** Liquid  
**Color:** Clear. Straw.  
**Odor:** Faint odor  
**Boiling Point:** 343.39 to 704.49°C (650.1 to 1300.1°F)

**Specific Gravity:**  
**Volatility:** Negligible  
**Evaporation Rate:**

## SECTION 10 — STABILITY AND REACTIVITY DATA

**Stability and reactivity:** The product is stable.

**Incompatibility with various substances:** Reactive with oxidizing agents, acids, alkalis.

**Hazardous Decomposition Products:** These products are carbon oxides (CO, CO<sub>2</sub>), nitrogen and sulphur oxides (NO<sub>x</sub>, SO<sub>x</sub>), particulate matter, VOC's.

**Hazardous Polymerization:** Will not occur.

## SECTION 11 — TOXICOLOGICAL INFORMATION

### Toxicity data

Albatross oils are a complex mixture of paraffinic hydrocarbons derived from primary distillation and solvent refining. Composition varies greatly and included C20 to C50 hydrocarbons with a boiling range of about 650-1300°F. Chronic toxicity of mineral oils is most probably a function of the concentration of polycyclic aromatic hydrocarbons (PAH) in the oil and the degree of contact with the oil. Certain PAHs have been shown to have carcinogenic potential and produce skin tumors. Mouse-skin painting studies with certain mineral oils have in some cases produced skin tumors. IARC has determined in reviewing cancer prevalence of exposed workers that the carcinogenic activity of refined oils is related to the severity of processing of the base oil. IARC has determined that solvent refined oils (class 3) general do not induce skin tumors since the PAHs are removed. This product is refined through a solvent extraction process which removes the PAHs from the oil, thus reducing its carcinogenic potential. Product testing using IP 346 show a DMSO PAH content of <3.0 weight percent. The classification as a carcinogen does not apply if it can be shown that the substance contains less than 3% DMSO extract as measured by IP 346 test.

#### --ACUTE TOXICOLOGY--

ORAL TOXICITY (RATS): Practically non-toxic (LD50: greater than 2000 mg/kg). --Based on testing of similar products and/or the components.

DERMAL TOXICITY (RABBITS): Practically non-toxic (LD50: greater than 2000 mg/kg). --Based on testing of similar products and/or the components.

INHALATION TOXICITY (RATS): Not applicable --Harmful concentrations of mists and/or vapors are unlikely to be encountered through any customary or reasonably foreseeable handling, use, or misuse of this product.

EYE IRRITANT (RABBITS): Practically non-irritating. (Draize score: 0 or greater but 6 or less). --Based on testing of similar products and/or the components.

SKIN IRRITATIONS (RABBITS): Practically non-irritating. (Primary Irritation Index: greater than 0.5 but less than 3). --Based on testing of similar products and/or the components.

#### --SUBCHRONIC TOXICOLOGY (SUMMARY)--

Severely solvent refined and severely hydrotreated mineral base oils have been tested at Mobil Environmental and Health Sciences Laboratory by dermal application to rats 5 days/week for 90 days at doses significantly higher than those expected during normal industrial exposure. Extensive evaluations including microscopic examination of internal organs and clinical chemistry of body fluids, showed no adverse effects.

#### --CHRONIC TOXICOLOGY (SUMMARY)--

The base oils in this product are severely solvent refined and/or severely hydrotreated. Chronic mouse skin painting studies of severely treated oils showed no evidence of carcinogenic effects. These results are confirmed on a continuing basis using various screening methods such as the Mobil Modified Ames Test and IP-346.

#### --SENSITIZATION (SUMMARY)--

Representative solvent refined mineral oils have not caused skin sensitization in guinea pigs.

**Chronic effects on****Humans:**

**CARCINOGENIC EFFECTS:** Classified 2 (Suspected for humans) by European Union Distillates (petroleum), severely hydrotreated heavy paraffinic]. Classified 2 (Suspected for humans.) by European Union [Distillates (petroleum), solvent-refined heavy paraffinic]. Classified 2 (Suspected for humans.) by European Union [Residual oils, (petroleum), solvent-refined].

Contains material which causes damage to the following organ: upper respiratory tract, skin, eye, lens or cornea.

**Other toxic effects on****Humans:**

Not Available.

**Special remarks on****Toxicity to animals:**

No additional remark.

**Special remarks on****Chronic effects on****Humans:**

No additional remark.

**Special remarks on****other toxic effects****on humans:**

No additional remark.

**Special Effects****Carcinogenic effects:**

Risk of cancer depends on duration and level of exposure.

**Target organs:**

Contains material which causes damage to the following organs: upper respiratory tract, skin, eye, lens or cornea.

## SECTION 12 — ECOLOGICAL INFORMATION

**Ecotoxicity data****Ingredient Name**

Oil Mist, Mineral

**Species**

Lepomis macrochirus (LC50)

Oncorhynchus mykiss (LC50)

**Period**

96 hour/hours

96 hour/hours

**Result**

>100 mg/l

>100 mg/l

**Products of****Degradation:**

These products are carbon oxides (CO, CO<sub>2</sub>) and water.

**Toxicity of the****Products of****Biodegradation:**

The products of degradation are less toxic than the product itself.

## SECTION 13 — DISPOSAL CONSIDERATIONS

**Waste Disposal:** The generation of waste should be avoided or minimized wherever possible. Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers. Disposal of this product, solutions and any by-products should at all times comply with the requirements of environmental protection and waste disposal legislation and any regional local authority requirements.

**Consult your local or regional authorities.**

## SECTION 14 — TRANSPORT INFORMATION

Regulatory Information	UN Number	Proper Shipping Name	Class	Packing Group	Label	Additional Information
DOT Classification	Not Regulated		Not a DOT controlled material (United States).			Not Available
TDG Classification	Not Regulated		Not a TDG-controlled material.	Not Available		Not Available

## SECTION 15 — REGULATORY INFORMATION

### United States

#### **U.S. Federal regulations:**

TSCA 8(b) inventory. Distillates (petroleum), severely hydrotreated heavy paraffinic; Distillates (petroleum), solvent-refined heavy paraffinic; Residual oils, (petroleum), solvent-refined; Oil Mist, Mineral

SARA 302/304/311/312 extremely hazardous substances: No products were found.

SARA 302/304 emergency planning and notification: No products were found.

SARA 302/304/311/312 hazardous chemicals: Distillates (petroleum), severely hydrotreated heavy paraffinic; Distillates (petroleum), solvent-refined heavy paraffinic; Residual oils, (petroleum), solvent-refined; Oil Mist, Mineral

SARA 311/312 MSDS distribution – chemical inventory – hazard identification: Distillates (petroleum), severely hydrotreated heavy paraffinic: Immediate (acute) health hazard, Delayed (chronic) health hazard; Distillates (petroleum), solvent-refined heavy paraffinic: Immediate (acute) health hazard, Delayed (chronic) health hazard; Residual oils, (petroleum), solvent-refined: Immediate (acute) health hazard, Delayed (chronic) health hazard; Oil Mist, Mineral: Immediate (acute) health hazard, Delayed (chronic) health hazard

Clean Water Act (CWA) 307: No products were found.

Clean Water Act (CWA) 311: No products were found

Clean Air Act (CAA) 112 accidental release prevention: No products were found  
 Clean Air Act (CAA) 112 regulated flammable substances: No products were found  
 Clean Air Act (CAA) 112 regulated toxic substances: No products were found

**State Regulations:** Pennsylvania RTK: Oil Mist, Mineral: (generic environmental hazard)  
 Massachusetts RTK: Oil Mist, Mineral  
 New Jersey: Oil Mist, Mineral  
 California Prop. 65: No products were found

**Canada**

**WHMIS (Canada):** Not controlled under WHMIS (Canada).

CEPA DSL: Distillates (petroleum), severely hydrotreated heavy paraffinic; Distillates (petroleum), solvent-refined heavy paraffinic; Residual oils, (petroleum), solvent-refined; Oil Mist, Mineral

**SECTION 16 — OTHER INFORMATION**

**Label Requirements:** CAUSES SKIN IRRITATION  
 CONTAINS MATERIAL WHICH CAUSES DAMAGE TO THE FOLLOWING  
 ORGANS: RESPIRATORY TRACT, SKIN, EYE, LENS OR CORNEA

**Hazardous Material Information System (U.S.A.):**

<b>Health</b>	<b>1</b>
<b>Fire Hazard</b>	<b>1</b>
<b>Physical Hazard</b>	<b>0</b>
<b>Personal Protection</b>	

**National Fire Protection Association (U.S.A.):**

		<b>1</b>	<b>Flammability</b>
<b>Health</b>	<b>1</b>	<b>0</b>	<b>Instability</b>
			<b>Specific Hazard</b>

**Date of Printing:** 5/1/2007  
**Date of Issue:** 5/1/2007  
**Version:** 1.02

**Disclaimer**

THIS MATERIAL SAFETY DATA (“MSDS”) WAS PREPARED IN ACCORDANCE WITH 29 CFR 1910.1200 BY ALBATROSS U.S.A., INC. (ALBATROSS). ALBATROSS DOES NOT ASSUME ANY LIABILITY ARISING OUT OF PRODUCT USE BY OTHERS. THE INFORMATION, RECOMMENDATIONS, AND SUGGESTIONS PRESENTED IN THIS MSDS ARE BASED UPON TEST RESULTS AND DATA BELIEVED TO BE RELIABLE. THE END USER OF THE PRODUCT HAS THE RESPONSIBILITY FOR EVALUATING THE ADEQUACY OF THE DATA UNDER THE CONDITIONS OF USE, DETERMING THE SAFETY, TOXICITY, AND SUITABILITY OF THE PRODUCT UNDER THESE CONDITIONS, AND OBTAINING ADDITIONAL OR CLARIFYING INFORMATION WHERE UNCERTAINTY EXISTS. NO GUARANTEE EXPRESSED OR IMPLIED IS MADE AS TO THE EFFECTS OF SUCH USE, THE RESULTS TO BE

OBTAINED, OR THE SAFETY AND TOXICITY OF THE PRODUCT IN ANY SPECIFIC APPLICATION. FURTHERMORE, THE INFORMATION HEREIN IS NOT REPRESENTED AS ABSOLUTELY COMPLETE, SINCE IT IS NOT PRACTICABLE TO PROVIDE ALL THE SCIENTIFIC AND STUDY INFORMATION IN THE FORMAT OF THIS DOCUMENT, PLUS ADDITIONAL INFORMATION MAY BE NECESSARY UNDER EXCEPTIONAL CONDITIONS OF USE, OR BECAUSE OF APPLICABLE LAWS OR GOVERNMENT REGULATIONS.

---

### Definitions of Material Safety Data Sheet Terminology

---

#### GOVERNMENT AGENCIES AND PRIVATE ASSOCIATIONS

**ACGIG** – American Conference of Governmental Industrial Hygienists, (private association)  
**DOT** - United States Department of Transportation  
**EPA** - United States Environmental Protection Agency  
**IARC** - International Agency for Research on Cancer, (private association)  
**NFPA** - National Fire Protection Association, (private association)  
**MSHA** - Mine Safety and Health Administration, U.S. Department of Labor  
**NIOSH** - National Institute of Occupational Safety and Health, U.S. Department of Health and Human Services  
**NTP** - National Toxicology Program, (private association)  
**OSHA** - Occupational Safety and Health Administration, U.S. Department of Labor  
**WHMIS** – Workplace Hazardous Material Information System  
**CSA** – Canadian Standards Association

#### HAZARD AND EXPOSURE INFORMATION

**Acute Hazard** - An adverse health effect which occurs rapidly as a result of short term exposure.  
**CAS #** - American Chemical Society's Chemical Abstract service registry number which identifies the product and/or ingredients.  
**Ceiling** - The concentration that should not be exceeded during any part of the working exposure  
**Chronic Hazard** - An adverse health effect which generally occurs as a result of long term exposure or short term exposure with delayed health effects and is of long duration.  
**Fire Hazard** - A material that poses a physical hazard by being flammable, combustible, pyrophoric or an oxidizer as defined by 29 CFR 1910.1200  
**Hazard Class** - DOT hazard classification  
**Hazardous Ingredients** - Names of ingredients which have been identified as health hazards.  
**IDLH** - Immediately Dangerous to Life and Health, the airborne concentration below which a person can escape without respiratory protection and exposure up to 30 minutes, and not suffer debilitating or irreversible health effects. Established by NIOSH.  
**mg/m<sup>3</sup>** - Milligrams of contaminant per cubic meter of air, a mass to volume ratio  
**N/A** - Not available or no relevant information found  
**NA** - Not applicable  
**PEL** - OSHA permissible exposure limit; an action level of one half this value may be applicable  
**ppm** - Part per million (one volume of vapor or gas in one million volumes of air)  
**Pressure Hazard** - A material that poses a physical hazard due to the potential of a sudden release of pressure such as explosive or a compressed gas as defined by 20 CFR 1910.1200  
**Reactive Hazard** - A material that poses a physical hazard due the potential to become unstable reactive, water reactive or that is an organic peroxide as defined by 20 CFR 1910.1200  
**STEL** - The ACGIH Short-Term Exposure Limit, a 15-minute Time-Weighted Average exposure which should not be exceeded at any time during a workday, even if the 8-hour TWA is less than the TLV.  
**TLV** - ACGIH Threshold Limit Value, represented herein as an 8-hour TWA concentration.  
**8-hour TWA** - The time weighted average concentration for a normal 8-hour workday and a 40-hour workweek, to which nearly all workers may be repeatedly exposed, day after day, without adverse effect.  
**LD50** - Single dose of a substance that, when administered by a defined route in an animal assay, is expected to cause the death of 50% of the defined animal population.  
**LC50** – The concentration of a substance in air that, when administered by means of inhalation over a specified length of time in an animal assay, is expected to cause the death of 50% of a defined animal population.