G.J. CHEMICAL COMPANY, INC. SAFETY DATA SHEET

1. PRODUCT IDENTIFIER

1.1 PRODUCT NAME: Power Clean

PRODUCT NUMBER(S): 236400

TRADE NAMES/SYNONYMS: Blend

1.2 RELEVANT IDENTIFIED USES OF THE SUBSTANCE OR MIXTURE AND USES

ADVISED AGAINST

RECOMMENDED USE: Printing Solvent

USES ADVISED AGAINST: No information available

1.3 DETAILS OF THE SUPPLIER OF THE SAFETY DATA SHEET

Company: G.J. CHEMICAL CO., INC.

Address: 40 VERONICA AVENUE

SOMERSET, NJ 08873

Telephone: 1-973-589-1450 Fax: 1-973-589-3072

1.4 Emergency Telephone Number

Emergency Phone: 1-800-424-9300 (CHEMTREC)

2. HAZARDS IDENTIFICATION

2.1 Classification of the substance or mixture

GHS Classification in accordance with 29CFR 1910 (OSHA HCS)

Flammable liquids (Category 2), H225

Acute toxicity, Oral (Category 5), H303

Skin irritation (Category 2), H315

Eye irritation (Category 2A), H319

Germ cell mutagenicity (Category 2), H341

Carcinogenicity (Category 1B), H350

Specific target organ toxicity - single exposure (Category 3) Central Nervous

System, H336

Reproductive toxicity (Category 2), H361f

Specific target organ toxicity – repeated exposure (Category 2) Oral, H373

Aspiration Hazard (Category 1), H304 Acute aquatic toxicity (Category 3), H400 Chronic aquatic toxicity (Category 2), H410

2.2 GHS Label elements, including precautionary statements



Signal word DANGER

Hazard statement(s)

H225 Highly flammable liquid and vapor.

H303 May be harmful if swallowed.

H315 Causes skin irritation.

H319 Causes serious eye irritation.

H336 May cause drowsiness or dizziness.

H341 Suspected of causing genetic defects.

H350 May cause cancer.

H361f Suspected of damaging fertility or the unborn child.

H373 May cause damage to organs through prolonged or repeated use.

H400 Very Toxic to aquatic life.

H410 Very Toxic to aquatic life with long lasting effects.

Precautionary statement(s)

Prevention:

P201 Obtain special instructions before use.

P202 Do not handle until all safety precautions have been read and understood.

P210 Keep away from heat/sparks/open flames/hot surfaces. - No smoking.

P240 Ground/bond container and receiving equipment.

P241 Use explosion-proof electrical/ ventilating/ lighting/ equipment.

P242 Use only non-sparking tools.

P243 Take precautionary measures against static discharge.

P260 Do not breathe dust/ fume/ gas/ mist/ vapors/ spray.

P264 Wash skin thoroughly after handling.

P273 Avoid release to the environment.

P271 Use only outdoors or in a well ventilated area.

P280 Wear eye protection/ face protection.

P280 Wear protective gloves.

P281 Use personal protective equipment as required.

Response:

P301 + P310 IF SWALLOWED: Immediately call a POISON CENTER or doctor/physician.

P303 + P361 + P353 IF ON SKIN (or hair): Remove/ Take off immediately all contaminated clothing. Rinse skin with water/ shower.

P304 + P340 + P312 IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing. Call a POISON CENTER or doctor/ physician if you feel unwell.

P305 + P361 + P353 IF ON SKIN (or hair) Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower.

P305 + P351 + P338 IF IN EYES: Rinse cautiously with water for several minutes.

Remove contact lenses, if present and easy to do. Continue rinsing.

P308 + P313 IF exposed or concerned: Get medical advice/ attention.

P312 Call a POISON CENTER or doctor/physician if you feel unwell.

P331 Do NOT induce vomiting.

P332 + P313 If skin irritation occurs: Get medical advice/ attention.

P337 + P313 If eye irritation persists. Get medical advice/attention.

P362 Take off contaminated clothing and wash before reuse.

P370 + P378 In case of fire. Use dry sand, dry chemical or alcohol-resistant foam for extinction.

P391 Collect spillage.

Storage:

P403 + P233 Store in a well-ventilated place. Keep container tightly closed.

P403 + P235 Store in a well-ventilated place. Keep cool.

P405 Store locked up.

Disposal:

P501 Dispose of contents/container to an approved waste disposal plant.

2.3 Hazards not otherwise classified (HNOC) or not covered by GHS - none

3. INGREDIENTS

3.1 SUBSTANCE: Not applicable.

3.2 MIXTURE:

Ingredient	CAS No.	% by \	WT.
	67-64-1 EC-No.200-662-2 k-No.606-001-00-8 9471330-49-XXXX	į	 Flammable liquids (Category 2), H225 Skin irritation (Category 3), H316 Eye irritation (Category 2A, H319

1, 1, 2 Trichloroethylene 79-01-6 EC-No.201-167-4 Index-No.602-027-00-9 RegNo. 01-2119490731-36-XXXX	 11 	Skin irritation (Category 2), H315 Eye irritation (Category 2A), H319 Germ cell mutagenicity (Category 2), H341 Carcinogenicity (Category 1B), H350 STOT-SE (Category 3), Central Nervous System, H336 Acute aquatic toxicity (Category 3), H402 Chronic aquatic toxicity (Category 3), H412
Tetrachloroethene 127-18-4 EC-No.204-825-9 Index-No.602-028-00-4 RegNo. 01-2119475329-28-XXXX		Skin irritation (Category 2), H315 Eye irritation (Category 2A), H319 Skin sensitization (Category 1), H317 Carcinogenicity (Category 2), H351 STOT-SE (Category 3), Central Nervous System, H336 Acute aquatic toxicity (Category 2), H401 Chronic aquatic toxicity (Category 2), H411
Heptane, Commercial (C7) 64742-49-0 EC-No.265-151-9 Index-No.649-328-00-1 RegNo. 01-2119475133-43-XXXX	 20 	Flammable liquids (Category 2), H225 Skin irritation (Category 2), H315 Eye irritation (Category 2), H320 STOT-SE (Category 3) central nervous System, H336 Aspiration Hazard (Category 1), H304 Acute aquatic toxicity (Category 1), H400 Chronic aquatic toxicity (Category 1), H410
Hexane Commercial (C6) 64742-49-0 EC-No.265-151-9 Index-No.649-328-00-1 RegNo. 01-2119475133-43-XXXX	 12 	Flammable liquids (Category 2), H225 Skin irritation (Category 2), H315 Eye irritation (Category 2A), H319 Reproductive toxicity (Category 2), H361f STOT-SE (Category 3), Central Nervous System, H336 STOT-RE (Category 2), Oral, H373 Aspiration hazard (Category 1), H304 Acute aquatic toxicity (Category 2), H401 Chronic aquatic toxicity (Category 2), H411

4. FIRST-AID MEASURES

4.1 DESCRIPTION OF FIRST AID MEASURES:

INHALATION: POWER CLEAN

**FIRST AID- Remove from exposure area to fresh air immediately. If breathing has stopped, perform artificial respiration. Keep person warm and at rest. Treat symptomatically and supportively. Get

medical attention immediately.

SKIN CONTACT: POWER CLEAN

**FIRST AID- Remove contaminated clothing and shoes immediately.
Wash affected area with soap or mild detergent and large amounts or water until no evidence of chemical remains (approximately 15-20 minutes). Get medical attention immediately.

EYE CONTACT: POWER CLEAN

**FIRST AID- Wash eyes immediately with large amounts of water or normal saline, occasionally lifting upper and lower lids, until no evidence of chemical remains (approximately 15-20 minutes). .

Remove contact lenses, if worn, after initial flush. Get medical attention immediately.

INGESTION: POWER CLEAN

**FIRST AID- Do not induce vomiting. If trace quantities have been swallowed and the patient is conscious, wash out mouth with water and give 200-300ml of warm water to drink. Immediately consult a physician or poison control center, treat symptomatically.

4.2 MOST IMPORTANT SYMPTOMS AND EFFECTS, BOTH ACUTE AND DELAYED:

Eye: Irritant causing pain and inflammation;

<u>Skin</u>: May be harmful if absorbed through skin. Causes skin irritation.

<u>Inhalation</u>: Irritation of the respiratory tract or acute nervous system depression characterized by headache, dizziness, staggering gait, confusion, unconsciousness or coma,

<u>Ingestion</u>: May cause irritation of the gastrointestinal tract with vomiting. If vomiting results in aspiration, chemical pneumonia may follow. Absorption through the gastrointestinal tract may produce symptoms of central nervous system depression. May result in damage to kidney and the liver.

<u>Chronic</u>: Can cause headache, mental confusion, depression, fatigue, loss of appetite, nausea, vomiting, cough, loss of sense of balance and visual disturbances and an intolerance to alcohol. Target organs: Eyes, Skin, Respiratory system, Central Nervous System, Liver, Kidney and Heart.

<u>Medical Conditions Aggravated by Exposure</u>: Skin contact may aggravate an existing dermatitis. Exposure may aggravate any kidney, liver or lung disorders. Alcohol consumed before or after exposure may increase adverse reactions.

4.3 INDICATION OF ANY IMMEDIATE MEDICAL ATTENTION AND SPECIAL TREATMENT NEEDED:

<u>Notes to physician</u>: Caution Epinephedrine or other stimulant may cause ventricular arrhythmia due to potentiation of endogenous epinephrine. Ethyl Alcohol markedly augments the health effects of trichloroethylene.

5. FIRE FIGHTING MEASURES

FLASH POINT: -17°C (1.4°F) TCC Acetone LEL %:2.75 (V) AUTO-IGNITION TEMP: N.D. UEL %:17 (V)

5.1 <u>SUITABLE EXTINGUISHING MEDIA</u>: DRY CHEMICAL, CARBON DIOXIDE, WATER SPRAY OR ALCOHOL-RESISTANT FOAM. FOR LARGER FIRES, USE WATER SPRAY, FOG OR ALCOHOL-RESISTANT FOAM. ALCOHOL FOAM.

Unsuitable extinguishing media: Do not use waterjet.

MIXTURE: FIRE AND EXPLOSION HAZARD: DANGEROUS FIRE HAZARD WHEN EXPOSED TO HEAT OR FLAME. VAPORS ARE HEAVIER THAN AIR AND MAY TRAVEL A CONSIDERABLE DISTANCE TO A SOURCE OF IGNITION AND FLASH BACK. VAPOR-AIR MIXTURES ARE EXPLOSIVE. Highly dangerous fire hazard when exposed to heat, sparks, flame, or oxidants. Acetone is extremely flammable and its vapors form explosive mixtures with air. Acetone containers may explode in heat of fire. Vapors of acetone are heavier than air, and may travel considerable distance to a source of ignition and flash back. Water solutions of acetone may still be flammable because of released vapors. Unusual Fire and Explosion Hazards: Keep containers tightly closed. Flammable liquid; isolate from all sources of ignition. Closed containers may explode when exposed to extreme heat. Vapor is heavier than air and can travel considerable distance to a source of ignition and flashback. Liquid floats on water.

<u>CONDITIONS OF FLAMMABILITY</u>: Flammable in the presence of a source of ignition when the temperature is above the flash point.

<u>HAZARDOUS COMBUSTION PRODUCTS</u>: Highly dependent on combustion conditions. A complex mixture of airborne solids, liquids, and gases including carbon monoxide, carbon dioxide, carbon oxides and other unidentified organic compounds evolve when this material undergoes combustion.

5.3 <u>ADVICE FOR FIREFIGHTERS:</u> Keep unnecessary people away; isolate hazard area and deny entry. Avoid breathing vapors, stay upwind. Do not enter fire area without structural fire fighter's protective equipment including NIOSH/MSHA approved self contained breathing apparatus (SCBA) in positive

pressure mode. Use water spray to knock down vapors. Use halon, carbon dioxide extinguisher or dry powder for small fires. Large fires are best controlled by alcohol foam, fog, and water spray. Move container from fire area if you can do it without risk. Apply cooling water to sides of containers that are exposed to flames until well after fire is out. Stay away from ends of tanks. For massive fire in cargo area, use unmanned hose holder or monitor nozzles; if this is impossible, withdraw from area and let fire burn. Withdraw immediately in case of rising sound from venting safety device or any discoloration of tank due to fire. Isolate for 1/2 mile in all directions if tank, rail car or tank truck is involved in fire (1990 Emergency Response Guidebook, DOT P 1800.5, guide page 26). Extinguish only if fire can be stopped. Use flooding amounts of water as a fog; solid streams may be ineffective. Cool containers with flooding amounts of water from as far a distance as possible. Avoid breathing vapors; keep upwind. If fire is uncontrollable or containers are exposed to direct flame, water may be ineffective (NFPA 325M, Fire Hazard Properties of Flammable Liquids, Gases, and Volatile Solids, 1991). Fire fighters should wear full protective clothing and NIOSH/MSHA approved self-contained breathing apparatus (SCBA) with full facepiece operated in the pressure demand or other positive pressure mode. Water may be used to flush spills away from exposures and to dilute spills to nonflammable mixtures. Do Not Use: Water in straight hose stream will scatter and spread fire and should not be used.

6. ACCIDENTAL RELEASE MEASURES

6.1 <u>PERSONAL PRECAUTIONS</u>, <u>PROTECTIVE EQUIPMENT AND EMERGENCY PROCEDURES</u>: Extremely Flammable; Eliminate ignition sources in the vicinity of the spill or released vapor. Immediately evacuate all nonessential people. Verify that responders are properly trained and wearing appropriate respiratory equipment and fire resistant protective clothing during cleanup operations.

6.2 ENVIRONMENTAL PRECAUTIONS:

Keep out of water sources, drains and sewers. Do not flush into surface water or sanitary sewer system.

6.3 METHODS AND MATERIAL FOR CONTAINMENT AND CLEANING UP:

Methods for cleanup and containment:

Use explosion proof equipment. Shut off valves, contain spill, keep out of water sources and sewers, for smaller spills add non-flammable absorbent in spill area. For large spills use foam on spill to minimize vapors clean up by vacuuming then using non-flammable absorbent.

Methods for disposal:

Place all saturated absorbent, using non-sparking tools, in an approved container for disposal. Minimize breathing vapors and skin contact, ventilate confined areas, open all windows and doors, assure conformity with applicable government regulations.

REPORTABLE QUANTITY (RQ): Acetone and Hexane – 5000lbs; Tetrachloroethylene and Trichloroethylene – 100lbs, Blend – 909lbs. The Superfund Amendments and Reauthorization Act (SARA) Section 304 requires that a release equal to or greater then the reportable quantity for this substance be immediately reported to the local emergency planning committee and the state emergency response commission (40 CFR 355.40). If the release of this substance is reportable under CERCLA Section 103, the national response center must be notified immediately at (800) 424-8882 or (202) 426-2675 in the metropolitan Washington, D. C. area (40 CFR 302.6).

6.4 REFERENCE TO OTHER SECTIONS: See Sections 8 and 13.

7. HANDLING AND STORAGE

7.1 PRECAUTIONS FOR SAFE HANDLING: This material presents a fire hazard. . Liquid quickly evaporates and forms vapor (fumes), which can catch fire and burn with explosive violence. Invisible vapor spreads easily and can be set on fire by many sources, such as pilot lights, welding equipment, and electrical motors and switches. Vapor is heavier than air and can travel considerable distance to a source of ignition and flash back. Avoid breathing vapors in top of shipping container. Use with adequate ventilation. Avoid contact with eyes, skin and clothing. Avoid work practices that may release volatile components in the atmosphere. Avoid contaminating soil or releasing material into sewage and drainage systems. Use non-sparking tools to open or close containers.

Advice on general occupational hygiene:

Wash hands before breaks and after work. Keep away from food, drink and animal feeding stuffs. When using do not smoke.

STATIC HAZARD: Electrostatic charge may accumulate and create a hazardous condition when handling this material. To minimize this hazard, bonding and grounding may be necessary but may not be sufficient. For more information refer to OSHA Standard 29CFR 1910.106 "Flammable and Combustible Liquids" and National Fire Protection Association (NFPA 77) "Recommended Practice on Static Electricity".

7.2 CONDITIONS FOR SAFE STORAGE, INCLUDING ANY INCOMPATIBILITIES: Follow maximum allowed pile heights specified in the BOCA codes or the NFPA manual. Local fire authorities should be notified for storage of this material in any quantity. Local permits are required for storage in warehouse quantities. Recommended storage temperature: 15 - 25°C. Store large quantities only in cool, dry areas in buildings designed to comply with OSHA 1910.106. Keep containers tight and upright to prevent leakage. Do not contact with oxidizing materials. Keep containers closed when not in use. Do not take internally.

<u>CONTAINER WARNINGS</u>: Containers should be Bonded and Grounded when pouring. Avoid free fall of liquid in excess of a few inches. Empty containers

release residue and can be dangerous. Do not pressurize, cut, weld, braze, solder, drill, or expose such containers to heat, sparks, static electricity or other sources of ignition. Do not attempt to clean. "Empty" drums should be completely drained, properly bunged and promptly returned to a drum reconditioner.

7.3 SPECIFIC END USES: Apart from the uses mentioned in section 1.2 no other specific uses are stipulated.

8. EXPOSURE CONTROL (PERSONAL PROTECTION)

8.1 CONTROL PARAMETERS:

Ingredient	CAS No.	% by WT. Range	Exposure Limits
	67-64-1 EC-No.200-662-2 No.606-001-00-8 471330-49-XXXX	 48-50 	 500ppm TWA (ACGIH) 750ppm STEL (ACGIH) 750ppm TWA (OSHA) 1000ppm STEL (OSHA)
-	79-01-6 EC-No.201-167-4 No.602-027-00-9 90731-36-XXXX	11	 10ppm TWA (ACGIH) 25ppm STEL (ACGIH) 50ppm TWA (OSHA) 1000ppm (IDLH)
	127-18-4 EC-No.204-825-9 No.602-028-00-4 475329-28-XXXX	6.9 	 25ppm TWA (ACGIH) 100ppm STEL (ACGIH) 25ppm TWA (OSHA)
-	64742-49-0 EC-No.265-151-9 No.649-328-00-1 475133-43-XXXX	20 	 400ppm TWA (ACGIH) 500ppm TWA (OSHA) 500ppm STEL (ACGIH) 750ppm (IDLH)
	64742-49-0 EC-No.265-151-9 No.649-328-00-1 475133-43-XXXX	12 	 50ppm TWA (ACGIH) 50ppm TWA (OSHA) 1100ppm (IDLH)

Key: (PEL) = Permissible Exposure Limit OSHA

(TLV) = Threshold Limit Value OSHA & ACGIH (STEL) = Short Term Exposure Limit ACGIH

(WEEL) = USA. Workplace Environmental Exposure Levels

(TWA) = Time Weighted Average

CAS = Chemical Abstracts Registry Number IDLH = Immediate Danger to Life and Health

N.E. =None Established

8.2 EXPOSURE CONTROLS

EXPOSURE GUIDELINES: Consider the potential hazards of this material (Section 2), applicable exposure limits, job activities, and other substances in the work place when designing engineering controls and selecting personal protective equipment. If engineering controls or work practices are not adequate to prevent exposure to harmful levels of this material, the personal protective equipment listed below is recommended.

<u>ENGINEERING CONTROLS:</u> Provide general dilution or local exhaust ventilation in volume and pattern to keep concentrations within permitted exposure limits. All areas should be ventilated in accordance with OSHA Regulation 29 CFR Part 1910. Explosion proof motors should be used in mechanical ventilation.

<u>RESPIRATORY PROTECTION</u>: The specific respirator selected must be based on contamination levels found in the work place, must not exceed the working limits of the respirator and be jointly approved by the National Institute for Occupational Safety and Health and the Mine Safety and Health Administration (NIOSH-MSHA):

For vapor concentrations 1 to 10 times ACGIH TWA use an air purifying NIOSH/MSHA Approved respirator with full face-piece and organic vapor cartridges. For concentrations over 10 times ACGIH TWA, in confined areas, and/or where vapor concentrations are unknown use a NIOSH/MSHA approved positive pressure full face-piece supplied air respirator (SCBA).

<u>BODY CLOTHING</u>: Employee must wear appropriate protective (impervious) clothing and equipment to prevent repeated or prolonged contact with this substance.

<u>SKIN PROTECTION</u>: Employee must wear appropriate protective gloves to prevent contact with this substance.

Full contact Material: Fluorinated rubber

Minimum layer thickness: 0.7 mm

Break through time: 480 min

Splash contact Material: Nitrile rubber Minimum layer thickness: 0.4 mm

Break through time: 35 min

<u>HYGIENE</u>: Use good personal hygiene practices, wash hands before eating, drinking, smoking or using toilet facilities.

EYE /FACE PROTECTION: Use chemical safety goggles and/or a full face shield where splashing is possible. Contact lenses should not be worn when working with this material. Maintain eye wash fountain and quick-drench facilities in work area.

Monitoring Exposure: Biological - Analysis of blood for trichloroacetic acid and trichloroethanol has been correlated with exposure; Urinary concentration of these matabolites may also correlate with routine constant exposure but not as a quantitative index of exposure.

9. PHYSICAL AND CHEMICAL PROPERTIES

9.1 INFORMATION ON BASIC PHYSICAL AND CHEMICAL PROPERTIES:

Power Clean Blend

APPEARANCE: Clear mobile liquid

COLOR: Colorless
ODOR: Sweet odor

ODOR THRESHOLD:

pH:

No data Available

No data Available

MOLECULAR WEIGHT:

MELTING POINT:

No data Available

No data Available

BOILING POINT: 110-250°F SPECIFIC GRAVITY: 0.826@20°C DENSITY (25°C): 0.826 g/ml (20°C)

VAPOR PRESSURE: 125 mm Hg @ 20°C (68.0°F)

VAPOR DENSITY: 3.7
WATER SOLUBILITY: 50%

PARTITION COEFFICIENT N- No data Available

OCTANOL/WATER

FLASH POINT: -17.0°C (1.4°F)

EVAPORATION RATE (BUTYL ACETATE=1): 5.4
UPPER FLAMMABILITY LIMIT: 17% (V)
LOWER FLAMMABILITY LIMIT: 2.75% (V)

AUTO INGNITION TEMPERATURE:
DECOMPOSITION TEMPERATURE:
VISCOSITY:
No data available
EXPLOSIVE PROPERTIES:
No data available
No data available
No data available

9.2 OTHER INFORMATION: No data available

10. STABILITY AND REACTIVITY INFORMATION

10.1 REACTIVITY: No data available.

10.2 CHEMICAL STABILITY: Unstable () Stable (X)

10.3 <u>POSSIBILITY OF HAZARDOUS REACTIONS</u>: Vapors may form explosive mixtures with air.

HAZARDOUS POLYMERIZATION: May occur () Will not occur (X)

10.4 <u>CONDITIONS TO AVOID:</u> Heat, Sparks, Pilot Lights, Static Electricity, and other high temperature sources which induce thermal decomposition to irritating and corrosive HCL from solvent vapor. Extremes of temperature and direct sunlight. Strong UV light can cause significant phosgene to be generated.

- 10.5 <u>INCOMPATIBLE MATERIALS:</u> Strong oxidants such as liquid chlorine, oxygen, sodium hypochlorite, inorganic acids e.g. hydrochloric acid, hydrogen peroxide, dinitrogen tetroxide, alkali metals, aluminum, zinc or their alloys. Avoid contacting this product with strong alkalis e.g. sodium hydroxide, open flames.
- 10.6 <u>HAZARDOUS DECOMPOSITION PRODUCTS</u>: At high temperatures, this product decomposes to give off hydrogen chloride gas and small quantities of other toxic and irritating vapors such as phosgene. Thermal decomposition products may include toxic oxides of carbon.

11. TOXICOLOGICAL INFORMATION

11.1 INFORMATION ON TOXICOLOGICAL EFFECTS:

Routes of Entry: Inhalation--> x Skin--> x Ingestion--> x Eye--> x

ACUTE HEALTH EFFECTS:

Effects of overexposure:

Eye>Irritant causing pain and inflammation;

Skin> May be harmful if absorbed through skin. Causes skin irritation.

Inhalation> Irritation of the respiratory tract or acute nervous system depression characterized by headache, dizziness, staggering gait, confusion, unconsciousness or coma,

Ingestion> May cause irritation of the gastrointestinal tract with vomiting. If vomiting results in aspiration, chemical pneumonia may follow. Absorption through the gastrointestinal tract may produce symptoms of central nervous system depression. May result in damage to kidney and the liver.

Chronic: Can cause headache, mental confusion, depression, fatigue, loss of appetite, nausea, vomiting, cough, loss of sense of balance and visual disturbances and an intolerance to alcohol. Target organs: Eyes, Skin, Respiratory system, Central Nervous System, Liver, Kidney and Heart.

Medical Conditions Aggravated by Exposure > Skin contact may aggravate an existing dermatitis. Exposure may aggravate any kidney, liver or lung disorders. Alcohol consumed before or after exposure may increase adverse reactions.

ACUTE TOXICITY:

The effects of overexposure shown in Section III are based on acute toxicity profiles. Typical values are:

Ingredient	Oral LD50(Rat)	Skin LD50(Rabbit	Inhalation LC50
Acetone	5800mg/kg 	7426mg/kg Guinea Pig	50100ppm/6h
Trichloroethylene	4920mg/kg 	>20000mg/kg 	8450ppm/4hr
Tetrachloroethene	3385mg/kg (OECD Test 401)	N.D	i N.D. i
Heptane	>5000mg/kg	>2000mg/kg	103000mg/m3/4h
Hexane	25000mg/kg	3160mg/kg	48000ppm/4hr

Acetone -

Additional Toxicity Data:

500 PPM inhalation-human TCLD; 110 GM/H3/1 hour inhalation-mouse LCLO; 2857 MG/KG oral-man TDLO; 8 GM/KG oral-dog LDLO; 3000 MG/KG oral-mouse LD50; 7426 MG/KG dermal-rabbit LD50; 5 GM/KG dermal-dog LDLO; 5000 MG/KG subcutaneous-guinea pig LDLO; 5500 MG/KG intravenous-rat LD50; 4 GM/KG intravenous-mouse LDLO; 1576 MG/KG intraperitoneal-mouse LD50; 8 GM/KG intraperitoneal-dog LDLO; 1159 MG/KG unreported-man LDLO; mutagenic data (RTECS); reproductive effects data (RTECS).

SKIN CORROSION/IRRITATION: Skin - Rabbit Result: Mild skin irritation - 24 h SERIOUS EYE DAMAGE/EYE IRRITATION: Eyes - Rabbit Result: Eye irritation 24 h RESPIRATORY OR SKIN SENSITIZATION: Guinea pig Result: Does not cause skin sensitization.

MUTAGENIC EFFECTS: Germ Cell Mutagenicity: No information available. CARCINOGEN STATUS:

IARC: No component of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.

NTP: No component of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP.

OSHA: No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by OSHA.

REPRODUCTIVE TOXICITY: No data available.

SPECIFIC TARGET ORGAN TOXICITY (STOT-SE) - Single Exposure (Globally Harmonized System): May cause drowsiness or dizziness.

SPECIFIC TARGET ORGAN TOXICITY (STOT-RE) - Repeated Exposure (Globally Harmonized System): no data available

AT INCREASED RISK FORM EXPOSURE: Persons with chronic respiratory or skin diseases.

ASPIRATION HAZARD: No data available

11.2 ADDITIONAL DATA: Alcohol may enhance the toxic effects.

Trichloroethylene -

SKIN CORROSION/IRRITATION: Skin - Rabbit Result: Severe skin irritation - 24 h SERIOUS EYE DAMAGE/EYE IRRITATION: Eyes - Rabbit Result: Eye irritation - 24 h

RESPIRATORY OR SKIN SENSITIZATION: No data available

MUTAGENIC EFFECTS: Laboratory experiments have shown mutagenic effects. In vitro tests showed mutagenic effects.

CARCINOGEN STATUS:

This product is or contains a component that has been reported to be probably carcinogenic based on its IARC, OSHA, ACGIH, NTP, or EPA classification. Possible human carcinogen

IARC: 1 - Group 1: Carcinogenic to humans (Trichloroethylene)

NTP: RAHC - Reasonably anticipated to be a human carcinogen (Trichloroethylene)

OSHA: No component of this product present at levels greater than or equal to 0.1% is on OSHA's list of regulated carcinogens.

REPRODUCTIVE TOXICITY: No data available

Specific target organ toxicity (STOT-SE)- single exposure (Globally Harmonized System): May cause damage to organs.

Specific target organ toxicity (STOT-RE) - repeated exposure (Globally

Harmonized System): no data available.

ASPIRATION HAZARD: No information available.

11.2 ADDITIONAL DATA: Burning sensation, Cough, wheezing, laryngitis, Shortness of breath, Headache, Nausea, Vomiting, Exposure to and/or consumption of alcohol may increase toxic effects., Gastrointestinal disturbance, Kidney injury may occur., narcosis

Tetrachloroethylene -

SKIN CORROSION/IRRITATION: Skin - Rabbit Result: Skin irritation - 4 h (OECD Test Guideline 404)

SERIOUS EYE DAMAGE/EYE IRRITATION: Eyes - Rabbit Result: Mild eye irritation - 24 h

RESPIRATORY OR SKIN SENSITIZATION: Mouse Result: May cause sensitization by skin contact. (OECD Test Guideline 429)

MUTAGENIC EFFECTS: No mutagenic effects were seen in rat liver after exposure at 200ppm for 10 weeks.

Hamster ovary Result: negative (OECD Test Guideline 474)

Mouse - male Result: negative

CARCINOGEN STATUS: Limited evidence of carcinogenicity in animal studies:

IARC: 2A - Group 2A: Probably carcinogenic to humans (Tetrachloroethylene)

NTP: RAHC - Reasonably anticipated to be a human carcinogen

(Tetrachloroethylene). "Reasonably anticipated to be carcinogens" defines carcinogens for which there is limited evidence of carcinogenicity in humans and/or sufficient evidence of carcinogenicity in experimental animals.

OSHA: No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by OSHA.

NCI (DHEW-NIH Pub. 77-813) stated that laboratory animals exposed to Perchloroethylene at 80 to 150ppm developed liver cancer in one study with no evidence of liver cancer in another study.

REPRODUCTIVE TOXICITY: Has caused behavioral biochemical, and metabolic effects on newborn rats where the mother was exposed to 900ppm/7hours at 7-13 days after conception.

Specific target organ toxicity (STOT-SE) - single exposure (Globally Harmonized System): May cause drowsiness or dizziness.

Specific target organ toxicity (STOT-RE) - repeated exposure (Globally

Harmonized System): no data available

ASPIRATION HAZARD: No information available.

11.2 ADDITIONAL DATA: Repeated dose toxicity: narcosis, Liver injury may occur, Kidney injury may occur.

Heptane -

SKIN CORROSION/IRRITATION: No known significant effects or critical hazards SERIOUS EYE DAMAGE/EYE IRRITATION: Causes skin irritation. Defatting to the skin.

RESPIRATORY OR SKIN SENSITIZATION: No information available.

MUTAGENIC EFFECTS: No information available.

CARCINOGEN STATUS:

IARC: No component of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.

NTP: No component of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP.

OSHA: No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by OSHA.

REPRODUCTIVE TOXICITY: No data available.

Specific target organ toxicity (STOT-SE) - single exposure (Globally Harmonized System): May cause respiratory irritation. May cause drowsiness or dizziness.

Specific target organ toxicity (STOT-RE) - repeated exposure (Globally

Harmonized System): no data available

ASPIRATION HAZARD: May be fatal if swallowed and enters airways.

11.2 ADDITIONAL DATA: No data available.

Hexane -

SKIN CORROSION/IRRITATION: Irritating to skin

SERIOUS EYE DAMAGE/EYE IRRITATION: Irritating to eyes.

RESPIRATORY OR SKIN SENSITIZATION: Not a sensitizer in humans or animals.

MUTAGENIC EFFECTS: In vitro mammalian cell gene mutation test Mouse lymphoma test Result: Positive results were obtained in some in vitro tests

Ames test Salmonella typhimurium Result: negative

Result: negative (National Toxicology Program)

CARCINOGEN STATUS:

IARC: No component of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.

NTP: No component of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP.

OSHA: No component of this product present at levels greater than or equal to 0.1% is on OSHA's list of regulated carcinogens.

REPRODUCTIVE TOXICITY:

Suspected of damaging the unborn child.

Suspected of damaging fertility.

Specific target organ toxicity (STOT-SE) - single exposure (Globally Harmonized

System): May cause drowsiness or dizziness. - Central nervous system Specific target organ toxicity (STOT-RE) - repeated exposure (Globally

Harmonized System): Inhalation - May cause damage to organs through

prolonged or repeated exposure. - Nervous system

ASPIRATION HAZARD: Aspiration hazard, Aspiration may cause pulmonary edema and pneumonitis.

11.2 ADDITIONAL DATA: The neurotoxic properties of n-Hexane are potentiated by exposure to methyl ethyl ketone and methyl isobutyl ketone.

Prolonged exposure to high concentrations of n-Hexane (>1000ppm) has resulted in decreased sperm count and degenerative changes in the testes of rats but not of mice.

12. ECOLOGICAL INFORMATION

Acetone:

12.1 AQUATIC TOXICITY (Acute):

Toxicity to fish:

LC50 - Oncorhynchus mykiss (rainbow trout) - 5,540.00 mg/l - 96 h

LC50 - Leuciscus idus (Golden Orfe) - 11300 mg/l - 48 h

LC50 - Gambusia affinis (Moskquito Fish) - 13000 mg/l - 48 h

LC50 - Pimphales promelas (Fathead Minnow) - 6210 mg/l - 96 h

Toxicity to aquatic invertebrates:

EC50 - Daphnia magna (Water flea) - 8800 mg/l - 48 h

Toxicity to Algae:

EC50 - Algae - 3400mg/l - 48 h

Toxicity to Microorganisms:

EC50 Bacteria - 1700 mg/l - 16 h

12.2 PERSISTANCE AND DEGRADABILITY:

Result 91%- Readily biodegradable; (OECD Test Guideline 301B)

Biological Oxygen Demand: 1850 mg/g, 5 h Oxygen Demand (Theoretical): 2200 mg/g Carbon Dioxide (Theoretical): 2273 mg/mg

Process Degradation rate Time
Biotic/abiotic 91% 28 days
Carbon dioxide generation 90.9% 28 days

12.3 BIOACCUMULATIVE POTENTIAL:

log Pow -.0.24

Will not bio-accumulate.

Bio-centration Factor: 0.69, Method of testing BCF.

12.4 MOBILITY IN SOIL:

SURFACE TENSION: 26.2 mN/m 0°C

This product is water soluble and may spread in water systems.

12.5 RESULTS OF PBT AND vPvB:

PBT assessment results: This substance is not classified as PBT or vPvB.

12.6 OTHER ADVERSE EFFECTS: Slightly toxic to aquatic life.

Trichloroethylene:

AQUATIC TOXICITY:

Toxicity to fish:

LC50 - Pimephales promelas (fathead minnow) - 41 mg/l - 96.0 h

LOEC - other fish - 11 mg/l - 10.0 d

NOEC - Oryzias latipes - 40 mg/l - 10.0 d

Toxicity to daphnia and other aquatic invertebrates:

EC50 - Daphnia magna (Water flea) - 18.00 mg/l - 48 h

Toxicity to algae

IC50 - Pseudokirchneriella subcapitata (green algae) - 175.00 mg/l - 96 h

12.2 PERSISTANCE AND DEGRADABILITY: No data available

12.3 <u>BIOACCUMULATIVE POTENTIAL</u>: Does not bioaccumulate.

Bio-concentration Factor (BCF): No data available

12.4 MOBILITY IN SOIL: No data available.

12.5 RESULTS OF PBT AND vPvB:

PBT assessment results: This substance is not classified as PBT or vPvB.

12.6 OTHER ADVERSE EFFECTS: Harmful to aquatic life with long lasting effects.

Tetrachloroethene:

DANGEROUS TO AQUATIC LIFE IN HIGH CONCENTRATIONS:

May be dangerous if it enters water intakes.

Notify local health and pollution control officials.

Notify operators of nearby water intakes.

12.1 AQUATIC TOXICITY:

Toxicity to fish:

LC50 - Oncorhynchus mykiss (rainbow trout) - 4.9 mg/l - 96.0 h flow through test Toxicity to daphnia and other aquatic invertebrates:

EC50 - Daphnia magna (Water flea) - 7.50 mg/l - 48 h

Toxicity to algae:

EC50 - Skeletonema costatum - > 16 mg/l - 7 h static test

12.2 PERSISTANCE AND DEGRADABILITY: aerobic - Exposure time 28 d Result:

11 % - Not readily biodegradable. (OECD Test Guideline 301C)

12.3 <u>BIOACCUMULATIVE POTENTIAL:</u> Lepomis macrochirus (Bluegill) - 21 d -

0.00343 mg/l

octanol/water partition coefficient: log Pow 2.53

Bio-concentration Factor (BCF): 49

12.4 MOBILITY IN SOIL: No data available

12.5 RESULTS OF PBT AND vPvB:

PBT assessment results: This substance is not classified as PBT or vPvB.

12.6 OTHER ADVERSE EFFECTS: Toxic to aquatic life with long lasting effects.

Heptane:

SKIN CORROSION/IRRITATION: No known significant effects or critical hazards SERIOUS EYE DAMAGE/EYE IRRITATION: Causes skin irritation. Defatting to the

skin.

RESPIRATORY OR SKIN SENSITIZATION: No information available.

MUTAGENIC EFFECTS: No information available.

CARCINOGEN STATUS:

IARC: No component of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.

NTP: No component of this product present at levels greater than or equal to

0.1% is identified as a known or anticipated carcinogen by NTP.

OSHA: No component of this product present at levels greater than or equal to

0.1% is identified as a carcinogen or potential carcinogen by OSHA.

REPRODUCTIVE TOXICITY: No data available.

Specific target organ toxicity (STOT-SE) - single exposure (Globally Harmonized

System): May cause respiratory irritation. May cause drowsiness or dizziness.

Specific target organ toxicity (STOT-RE) - repeated exposure (Globally

Harmonized System): no data available

ASPIRATION HAZARD: May be fatal if swallowed and enters airways.

11.2 ADDITIONAL DATA: No data available

Hexane:

DANGEROUS TO AQUATIC LIFE IN HIGH CONCENTRATIONS

May be dangerous if it enters water intakes.

Notify local health and pollution control officials.

Notify operators of nearby water intakes.

This mixture contains components that are potentially toxic to freshwater and saltwater ecosystems.

n-Hexane

12.1 AQUATIC TOXICITY (Acute):

Toxicity to fish:

LC50 - Pimephales promelas (fathead minnow) - 2.5 mg/l - 96.0 h

Toxicity to daphnia and other aquatic invertebrates:

EC50 - Daphnia magna (Water flea) - 3,878.00 mg/l - 48 h

Toxicity to algae:

EC50 - Chlorella vulgaris (Fresh water algae)-12,840.00 mg/l - 3 h

EC50 - SKELETOMA - 0.30 mg/l - 8 h

12.2 PERSISTANCE AND DEGRADABILITY:

Environmental Fate: This mixture will normally float on water with its lighter components evaporating rapidly. In stagnant or slow flowing waterways, a hydrocarbon layer can cover a large surface area. As a result, this covering layer might limit natural atmospheric oxygen transport into the water. With time, if not removed, oxygen depletion in the waterway might be enough to cause a fish kill or create an anaerobic environment. This coating action can also be harmful or fatal to plankton, algae, aquatic life, and water birds.

12.3 BIOACCUMULATIVE POTENTIAL: No data available

12.4 MOBILITY IN SOIL: This material is highly volatile and will rapidly partition to air. It is not expected to partition to soil or wastewater solids.

12.5 RESULTS OF PBT AND vPvB: No data available.
12.6 OTHER ADVERSE EFFECTS: Toxic to aquatic life with long lasting effects.

13. **DISPOSAL CONSIDERATIONS**

13.1 Waste Disposal Method: Hazard characteristic and regulatory waste stream classification can change with product use. Accordingly it is the responsibility of the user to determine the proper storage, transportation, treatment and or disposal methodologies for spent materials and residues at time of disposition. Dispose in accordance with all applicable disposal regulations.

CONTAMINATED PACKAGING: Dispose of as unused product.

The information offered here is for the product as shipped. Use and/or alterations to the product such as mixing with other materials may significantly change the characteristics of the material and alter the RCRA classification and the proper disposal method.

RCRA: The unused product is a RCRA hazardous waste if discarded. The RCRA ID numbers are: Acetone - U002, Trichloroethylene - U228, Tetrachloroethylene - U210 and D039, Heptane - D018 and D001, Hexane - D001 If the waste is a spent solvent, the appropriate spent solvent code should be used.

DISPOSAL MUST BE IN ACCORDANCE WITH STANDARDS APPLICABLE TO GENERATORS OF HAZARDOUS WASTE, 48 CFR 262

14. TRANSPORT INFORMATION

Land Transport (DOT)
14.1 USDOT ID Number> UN1992
14.2 USDOT Shipping Name> Flammable Liquids, Toxic, n.o.s.
14.3 USDOT Hazard Classification> 3, 6.1 (Flammable Liquid, Toxic)
USDOT Label Codes> 3, 6.1
14.4 USDOT Package Code> II
14.5 Marine Pollutant> Yes
14.6 Special precautions for user> Yes
Emergency Response Guide> 131
Reportable quantity> 909lbs Blend
Sea Transport (IMDG)
14.1 ID Number> UN1992
14.2 Proper shipping name> FLAMMABLE LIQUIDS, TOXIC, N.O.S.
14.3 Hazard Classification> 3, 6.1 (Flammable Liquid, Toxic)

	Label Codes	-> 3, 6.1
14.4	Package Code	>
14.5	Marine Pollutant	> Yes
14.6	Special precautions for user	> Yes
	EMS-Number	> F-E, S-A
Air 1	Fransport (IATA)	
14.1	ID Number	> UN1992
14.2	Proper shipping name	> Flammable Liquids, Toxic, n.o.s.
14.3	Hazard Classification	> 3, 6.1 (Flammable Liquid, Toxic)
	Label Codes	> 3, 6.1
14.4	Package Code	>
14.5	Environmental hazard	> None
14.6	Special precautions for user	> Yes

15. **REGULATORY INFORMATION**

15.1 SAFETY, HEALTH AND ENVIRONMENTAL REGULATIONS/LEGISLATION SPECIFIC FOR THE SUBSTANCE OR MIXTURE:

SARA TITLE III (Superfund Amendment and Reauthorization Act)

SECTION 302 AND 304: Extremely Hazardous Substance List (40 CFR 355) - Not Listed

SECTION 313: Toxic Chemicals Listing (40 CFR 372.65) - Listed Trichloroethylene CAS 79-01-6, Tetrachloroethylene CAS 127-18-4, Hexane CAS 110-54-3.

SECTION 311/312: Hazard Categorization (40 CFR 370) - Acute Health Hazard, Chronic Health Hazard, and Fire Hazard.

<u>CERCLA</u> (Comprehensive Environmental Response, Compensation, and Liability Act)

SECTION 102(A) Hazardous Substances (40 CFR 302.4) - Listed Reportable Quantities: Acetone CAS 67-64-1-5000lbs; Trichloroethylene CAS 79-01-6 -100lbs; Tetrachloroethylene CAS 127-18-4 – 100lbs; Hexane CAS 10-54-3-5000lbs; Blend – 909lbs.

SECTION 101(14) Reportable Quantities: Acetone CAS 67-64-1- 5000lbs; Trichloroethylene CAS 79-01-6 -100 lbs; Tetrachloroethene CAS 127-18-4 – 100lbs; Hexane CAS 10-54-3- 5000lbs; Blend – 909lbs.

Massachusetts Right to Know Components Acetone CAS-No.67-64-1 Trichloroethylene CAS-No.79-01-6 Tetrachloroethylene CAS-No.127-18-4 n-Hexane CAS-No.110-54-3

Pennsylvania Right to Know Components
Acetone CAS-No.67-64-1
Trichloroethylene CAS-No.79-01-6
Tetrachloroethylene CAS-No.127-18-4
Heptanes, mixture of isomers, contains >=25% N-Heptane,
CAS-64742-49-0
n-Hexane CAS-No.110-54-3

New Jersey Right to Know Components
Acetone CAS-No.67-64-1
Trichloroethylene CAS-No.79-01-6
Tetrachloroethylene CAS-No.127-18-4
Heptanes, mixture of isomers, contains >=25% N-Heptane,
CAS-64742-49-0
n-Hexane CAS-No.110-54-3

California Prop. 65 Components WARNING! This product contains chemicals known to the State of California to cause cancer. Trichloroethylene CAS No. 79-01-6; Tetrachloroethylene CAS-No.127-18-4

DEA (Drug Enforcement Agency)

Acetone CAS-No.67-64-1 is subject to the Chemical Diversion and Trafficking Act of 1988 and subject to certain record keeping and reporting requirements. (21 CFR 1310 and 1313)

TSCA (Toxic Substance Control Act)

Acetone CAS-No.67-64-1, Trichloroethylene CAS-No.79-01-6, Tetrachloroethylene CAS-No.127-18-4, Heptanes, mixture of isomers, contains >=25% N-Heptane, CAS-64742-49-0, n-Hexane CAS-No.110-54-3 are listed on the TSCA Inventory.

15.2 CHEMICAL SAFETY ASSESSMENT: A chemical safety assessment has not been carried out for this mixture.

16. OTHER INFORMATION

HMIS (Hazardous Materials Identification System)

Hazard Rating:

4-Extreme

3-High

2-Moderate

1-Slight

0-Insignificant

NFPA RATINGS (SCALE 0-4): Health=2 Fire=3 Reactivity=0

HMIS RATINGS (SCALE 0-4): Health=2 Fire=3 Reactivity=0 PPE=H

Hazard statement(s) from Section 2 and 3:

H225 Highly flammable liquid and vapor.

H303 May be harmful if swallowed.

H315 Causes skin irritation.

H319 Causes serious eye irritation.

H336 May cause drowsiness or dizziness.

H341 Suspected of causing genetic defects.

H350 May cause cancer.

H361f Suspected of damaging fertility or the unborn child.

H373 May cause damage to organs through prolonged or repeated use.

H400 Very Toxic to aquatic life.

H410 Very Toxic to aquatic life with long lasting effects.

Date of preparation----> February 24, 2005

Revision Number----> 1.6

Revision Content-----> General update all sections

Revision Date----> November 8, 2018

Prepared by-----> T.G. Fenstermaker Jr.

Acronyms:

ACGIH - American Conference of Governmental Industrial Hygenists

AIHA - American Industrial Hygiene Association
ANSI - American Nation Standards Institute
API - American Petroleum Institute

CERCLA - Comprehensive Emergency Response, Compensation, and Liability Act

DOT - U.S. Department of Transportation

EPA - U.S. Environmental Protection Agency

HMIS - Hazardous Materials Information System

IARC - International Agency For Research On Cancer

MSHA - Mine Safety and Health Administration NFPA - National Fire Protection Association

NIOSH - National Institute of Occupational Safety and Health

NOIC - Notice of Intended Change (Proposed change to ACGIH TLV)

NTP - National Toxicology Program
OPA - Oil Pollution Act of 1990

OSHA - U.S. Occupational Safety & Health Administration

PEL - Permissible Exposure Limit (OSHA)
RCRA - Resource Conservation and Recovery Act
REL - Recommended Exposure Limit (NIOSH)

SARA - Superfund Amendments and Reauthorization Act of 1986 Title III

SCBA - Self-Contained Breathing Apparatus

STEL - Short-Term Exposure Limit (generally 15 minutes)

TLV - Threshold Limit Value

TSCA - Toxic Substances Control Act TWA - Time Weighted Average (8hr.)

WHMIS - Canadian Workplace Hazardous Materials Information System

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