

X-DUTY CLEANER

Chemwatch Material Safety Data Sheet
Mar-23-2007
NB293EC

CHEMWATCH 4635-05
Version No:5
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Section 1 - CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

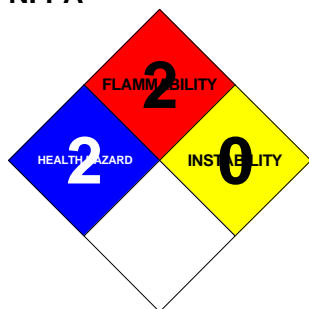
PRODUCT NAME

X-DUTY CLEANER

STATEMENT OF HAZARDOUS NATURE

CONSIDERED A HAZARDOUS SUBSTANCE ACCORDING TO OSHA 29 CFR 1910.1200.

NFPA



SUPPLIER

Company: Dry- Treat Inc.

Address:

1201 Orange Street Suite 600

One Commerce Center

Willmington DE 19801

USA

Telephone: 1 866 667 5119

Telephone: +61 2 9954 3211

Emergency Tel: CHEM- TEL (800) 255- 3924 Outside

USA (813) 248- 0585

Emergency Tel: +61 2 9954 3211

Fax: +61 2 9954 3162

PRODUCT USE

Cleaner for tile, stone, paving and grout.

SYNONYMS

Section 2 - HAZARDS IDENTIFICATION

EMERGENCY OVERVIEW

RISK

May cause SENSITIZATION by skin contact.

HARMFUL - May cause lung damage if swallowed.

Irritating to eyes and skin.

Vapors may cause dizziness or suffocation.

Very toxic to aquatic organisms, may cause long- term adverse effects in the aquatic environment.

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Section 2 - HAZARDS IDENTIFICATION

POTENTIAL HEALTH EFFECTS

ACUTE HEALTH EFFECTS

SWALLOWED

Accidental ingestion of the material may be damaging to the health of the individual. Ingestion may result in nausea, pain, vomiting. Vomit entering the lungs by aspiration may cause potentially lethal chemical pneumonitis.

EYE

This material can cause eye irritation and damage in some persons. The material may produce moderate eye irritation leading to inflammation. Repeated or prolonged exposure to irritants may produce conjunctivitis.

SKIN

This material can cause inflammation of the skin on contact in some persons. Skin contact with the material may damage the health of the individual; systemic effects may result following absorption. The material may cause severe skin irritation after prolonged or repeated exposure and may produce on contact skin redness, swelling, the production of vesicles, scaling and thickening of the skin. Repeated exposures may produce severe ulceration. Entry into the blood-stream, through, for example, cuts, abrasions or lesions, may produce systemic injury with harmful effects. Examine the skin prior to the use of the material and ensure that any external damage is suitably protected. Absorption by skin may readily exceed vapor inhalation exposure. Symptoms for skin absorption are the same as for inhalation.

INHALED

The vapor is discomforting. Inhalation of vapor is more likely at higher than normal temperatures. Inhalation of high concentrations of gas/vapor causes lung irritation with coughing and nausea, central nervous depression with headache and dizziness, slowing of reflexes, fatigue and inco-ordination. Not considered an irritant through normal use.

CHRONIC HEALTH EFFECTS

Limited evidence suggests that repeated or long-term occupational exposure may produce cumulative health effects involving organs or biochemical systems. Skin contact with the material is more likely to cause a sensitization reaction in some persons compared to the general population. Chronic solvent inhalation exposures may result in nervous system impairment and liver and blood changes. [PATTYS].

Section 3 - COMPOSITION / INFORMATION ON INGREDIENTS

NAME	CAS RN	%
N- methyl- 2- pyrrolidone	872-50-4	30-60
d- limonene	5989-27-5	10-30
surfactants		10-30

continued...

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Section 4 - FIRST AID MEASURES

SWALLOWED

- If swallowed do NOT induce vomiting.
- If vomiting occurs, lean patient forward or place on left side (head-down position, if possible) to maintain open airway and prevent aspiration.
- Observe the patient carefully.
- Never give liquid to a person showing signs of being sleepy or with reduced awareness; i.e. becoming unconscious.
- Give water to rinse out mouth, then provide liquid slowly and as much as casualty can comfortably drink.
- Seek medical advice.

EYE

If this product comes in contact with the eyes:

- Immediately hold eyelids apart and flush the eye continuously with running water.
- Ensure complete irrigation of the eye by keeping eyelids apart and away from eye and moving the eyelids by occasionally lifting the upper and lower lids.
- Continue flushing until advised to stop by the Poisons Information Center or a doctor, or for at least 15 minutes.
- Transport to hospital or doctor without delay.
- Removal of contact lenses after an eye injury should only be undertaken by skilled personnel.

SKIN

If skin contact occurs:

- Immediately remove all contaminated clothing, including footwear
- Flush skin and hair with running water (and soap if available).
- Seek medical attention in event of irritation.

INHALED

- If fumes or combustion products are inhaled remove from contaminated area.
- Lay patient down. Keep warm and rested.
- Prostheses such as false teeth, which may block airway, should be removed, where possible, prior to initiating first aid procedures.
- Apply artificial respiration if not breathing, preferably with a demand valve resuscitator, bag-valve mask device, or pocket mask as trained. Perform CPR if necessary.
- Transport to hospital, or doctor.

NOTES TO PHYSICIAN

Treat symptomatically.

Section 5 - FIRE FIGHTING MEASURES

Flash Point (°F): >141.8
Lower Explosive Limit (%): Not available
Upper Explosive Limit (%): Not available
Autoignition Temp (°F): Not available

EXTINGUISHING MEDIA

- Water spray or fog.
- Foam.
- Dry chemical powder.
- BCF (where regulations permit).
- Carbon dioxide.

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Section 5 - FIRE FIGHTING MEASURES

FIRE FIGHTING

- Alert Emergency Responders and tell them location and nature of hazard.
- Wear breathing apparatus plus protective gloves.
- Prevent, by any means available, spillage from entering drains or water course.
- Use water delivered as a fine spray to control fire and cool adjacent area.
- Avoid spraying water onto liquid pools.
- Do not approach containers suspected to be hot.
- Cool fire exposed containers with water spray from a protected location.
- If safe to do so, remove containers from path of fire.

GENERAL FIRE HAZARDS/HAZARDOUS COMBUSTIBLE PRODUCTS

- Combustible.
- Slight fire hazard when exposed to heat or flame.
- Heating may cause expansion or decomposition leading to violent rupture of containers.
- On combustion, may emit toxic fumes of carbon monoxide (CO).
- May emit acrid smoke.
- Mists containing combustible materials may be explosive.

Other combustion products include:

carbon dioxide (CO₂),
nitrogen oxides (NO_x).

FIRE INCOMPATIBILITY

Avoid contamination with oxidizing agents i.e. nitrates, oxidizing acids, chlorine bleaches, pool chlorine etc. as ignition may result.

PERSONAL PROTECTION

Glasses:
Safety Glasses.
Chemical goggles.
Gloves:
Respirator:
Type AK Filter of sufficient capacity

Section 6 - ACCIDENTAL RELEASE MEASURES

MINOR SPILLS

- Remove all ignition sources.
- Clean up all spills immediately.
- Avoid breathing vapors and contact with skin and eyes.
- Control personal contact by using protective equipment.
- Contain and absorb spill with sand, earth, inert material or vermiculite.
- Wipe up.
- Place in a suitable labeled container for waste disposal.

MAJOR SPILLS

- Moderate hazard.
- Clear area of personnel and move upwind.
 - Alert Emergency Responders and tell them location and nature of hazard.
 - Wear breathing apparatus plus protective gloves.
 - Prevent, by any means available, spillage from entering drains or water course.
 - No smoking, naked lights or ignition sources. Increase ventilation.
 - Stop leak if safe to do so.
 - Contain spill with sand, earth or vermiculite.
 - Collect recoverable product into labeled containers for recycling.
 - Absorb remaining product with sand, earth or vermiculite.
 - Collect solid residues and seal in labeled drums for disposal.
 - Wash area and prevent runoff into drains.

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Section 6 - ACCIDENTAL RELEASE MEASURES

- If contamination of drains or waterways occurs, advise emergency services.

EMERGENCY RESPONSE PLANNING GUIDELINES (ERPG)

The maximum airborne concentration below which it is believed that nearly all individuals could be exposed for up to one hour WITHOUT experiencing or developing

life-threatening health effects is:

N-methyl-2-pyrrolidone	400 ppm
d-limonene	350 ppm

irreversible or other serious effects or symptoms which could impair an individual's ability to take protective action is:

N-methyl-2-pyrrolidone	50 ppm
d-limonene	150 ppm

other than mild, transient adverse effects without perceiving a clearly defined odour is:

N-methyl-2-pyrrolidone	15 ppm
d-limonene	90 ppm

The threshold concentration below which most people will experience no appreciable risk of health effects:

N-methyl-2-pyrrolidone	10 ppm
d-limonene	30 ppm

American Industrial Hygiene Association (AIHA)

Ingredients considered according to the following cutoffs

Very Toxic (T+)	>= 0.1%	Toxic (T)	>= 3.0%
R50	>= 0.25%	Corrosive (C)	>= 5.0%
R51	>= 2.5%		
else	>= 10%		

where percentage is percentage of ingredient found in the mixture

Section 7 - HANDLING AND STORAGE

PROCEDURE FOR HANDLING

Avoid generating and breathing mist.

- Avoid all personal contact, including inhalation.
- Wear protective clothing when risk of exposure occurs.
- Use in a well-ventilated area.
- Prevent concentration in hollows and sumps.
- DO NOT enter confined spaces until atmosphere has been checked.
- Avoid smoking, naked lights or ignition sources.
- Avoid contact with incompatible materials.
- When handling, DO NOT eat, drink or smoke.
- Keep containers securely sealed when not in use.
- Avoid physical damage to containers.
- Always wash hands with soap and water after handling.
- Work clothes should be laundered separately.
- Use good occupational work practice.
- Observe manufacturer's storing and handling recommendations.
- Atmosphere should be regularly checked against established exposure standards to ensure safe working conditions.

RECOMMENDED STORAGE METHODS

- Metal can or drum

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Section 7 - HANDLING AND STORAGE

- Packing as recommended by manufacturer.
- Check all containers are clearly labeled and free from leaks.

STORAGE REQUIREMENTS

- Store in original containers.
- Keep containers securely sealed.
- No smoking, naked lights or ignition sources.
- Store in a cool, dry, well-ventilated area.
- Store away from incompatible materials and foodstuff containers.
- Protect containers against physical damage and check regularly for leaks.
- Observe manufacturer's storing and handling recommendations.

Section 8 - EXPOSURE CONTROLS / PERSONAL PROTECTION

EXPOSURE CONTROLS

Source	Material	TWA ppm	TWA mg/m ³	STEL ppm	STEL mg/m ³	Peak ppm	Peak mg/m ³	TWA F/CC
US AIHA Workplace Environmental Exposure Levels (WEELs)	N- methyl- 2- pyrrolidone (n- Methyl- 2- Pyrrolidone)	10						
Canada - Ontario Occupational Exposure Limits	N- methyl- 2- pyrrolidone (N- Methyl- 2- pyrrolidone)		400					
Canada - Yukon Permissible Concentrations for Airborne Contaminant Substances	N- methyl- 2- pyrrolidone (N- Methyl- 2- pyrrolidone)	100	400	125	500			
US AIHA Workplace Environmental Exposure Levels (WEELs)	d- limonene (d- Limonene)	30						

MATERIAL DATA

Not available. Refer to individual constituents.

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Section 8 - EXPOSURE CONTROLS / PERSONAL PROTECTION

INGREDIENT DATA

N-METHYL-2-PYRROLIDONE:

Reports of skin and eye irritation and chronic headaches have been reported in workers exposed to 1-methyl-2-pyrrolidone. The Australian ES is based on a 10-fold uncertainty factor of the no-observable-adverse-effect level (NOAEL) of 24 ppm where adverse respiratory effects were observed in a 4-week inhalation study in rats.

D-LIMONENE:

Sensory irritants are chemicals that produce temporary and undesirable side-effects on the eyes, nose or throat. Historically occupational exposure standards for these irritants have been based on observation of workers' responses to various airborne concentrations. Present day expectations require that nearly every individual should be protected against even minor sensory irritation and exposure standards are established using uncertainty factors or safety factors of 5 to 10 or more. On occasion animal no-observable-effect-levels (NOEL) are used to determine these limits where human results are unavailable. An additional approach, typically used by the TLV committee (USA) in determining respiratory standards for this group of chemicals, has been to assign ceiling values (TLV C) to rapidly acting irritants and to assign short-term exposure limits (TLV STELs) when the weight of evidence from irritation, bioaccumulation and other endpoints combine to warrant such a limit. In contrast the MAK Commission (Germany) uses a five-category system based on intensive odour, local irritation, and elimination half-life. However this system is being replaced to be consistent with the European Union (EU) Scientific Committee for Occupational Exposure Limits (SCOEL); this is more closely allied to that of the USA.

OSHA (USA) concluded that exposure to sensory irritants can:

- cause inflammation
- cause increased susceptibility to other irritants and infectious agents
- lead to permanent injury or dysfunction
- permit greater absorption of hazardous substances and
- acclimate the worker to the irritant warning properties of these substances thus

increasing the risk of overexposure.

CEL TWA: 30 ppm, 165.6 mg/m³ (compare WEEL-TWA*)

A Workplace Environmental Exposure Level* has been established by AIHA (American Industrial Hygiene Association) who have produced the following rationale:

D-limonene is not acutely toxic. In its pure form it is not a sensitiser but is irritating to the skin. Although there is clear evidence of carcinogenicity in male rats, the effect has been attributed to an alpha-2u-globin (a2u-G) renal toxicity which is both species and gender specific. Humans do not synthesise a2u-G, and metabolism studies indicate that 75% to 95% of d-limonene is excreted in 2-3 days with different metabolites identified between humans and rats. In a 2-year study, liver effects were noted in male mice at 500 mg/kg and reduced survival was noted in female rats at 600 mg/kg. The no observable effect levels (NOELs) were 250 and 300 mg/kg, respectively. A WEEL of 30 ppm is recommended to protect against these effects.

PERSONAL PROTECTION

EYE

- Safety glasses with side shields; or as required,
- Chemical goggles.
- Contact lenses pose a special hazard; soft lenses may absorb irritants and all lenses concentrate them.

HANDS/FEET

DO NOT use this product to clean the skin.

Do NOT use rubber or PVC gloves. Use butyl, teflon, nylon, neoprene.

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Section 8 - EXPOSURE CONTROLS / PERSONAL PROTECTION

OTHER

- Overalls.
- Barrier cream.
- Eyewash unit.

RESPIRATOR

Respiratory protection may be required when ANY "Worst Case" vapor-phase concentration is exceeded (see Computer Prediction in "Exposure Standards").

Protection Factor (Min)	Half- Face Respirator	Full- face Respirator	Spray/Mist Spatter
10 x PEL	AK- 1 AK- PAPR- 1	- -	AK- AK- PAPR-
20 x PEL	- -	AK- 1 AK- PAPR- 1	AK- AK- PAPR-
100 x PEL	- -	AK- 2 AK- PAPR- 2	AK- AK- PAPR-

^ - Full-face

Explanation of Respirator Codes:

Class 1 low to medium absorption capacity filters.

Class 2 medium absorption capacity filters.

Class 3 high absorption capacity filters.

PAPR Powered Air Purifying Respirator (positive pressure) cartridge.

Type A for use against certain organic gases and vapors.

Type AX for use against low boiling point organic compounds (less than 65°C).

Type B for use against certain inorganic gases and other acid gases and vapors.

Type E for use against sulfur dioxide and other acid gases and vapors.

Type K for use against ammonia and organic ammonia derivatives

Class P1 intended for use against mechanically generated particulates of sizes most commonly encountered in industry, e.g. asbestos, silica.

Class P2 intended for use against both mechanically and thermally generated particulates, e.g. metal fume.

Class P3 intended for use against all particulates containing highly toxic materials, e.g. beryllium.

The local concentration of material, quantity and conditions of use determine the type of personal protective equipment required.

Use appropriate NIOSH-certified respirator based on informed professional judgement. In conditions where no reasonable estimate of exposure can be made, assume the exposure is in a concentration IDLH and use NIOSH-certified full face pressure demand SCBA with a minimum service life of 30 minutes, or a combination full facepiece pressure demand SAR with auxiliary self-contained air supply. Respirators provided only for escape from IDLH atmospheres shall be NIOSH-certified for escape from the atmosphere in which they will be used.

ENGINEERING CONTROLS

Use in a well-ventilated area.

General exhaust is adequate under normal operating conditions. Local exhaust ventilation may be required in specific circumstances. If risk of overexposure exists, wear an approved respirator. Correct fit is essential to obtain adequate protection. Provide adequate ventilation in warehouse or closed storage areas.

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Section 9 - PHYSICAL AND CHEMICAL PROPERTIES

PHYSICAL PROPERTIES

Liquid.
Mixes with water.

Molecular Weight: Not applicable
Melting Range (°F): Not available.
Solubility in water (g/L): Miscible
pH (1% solution): Not applicable.
Volatile Component (%vol): Not available
Relative Vapor Density (air=1): >1
Lower Explosive Limit (%): Not available
Autoignition Temp (°F): Not available
State: Liquid

Boiling Range (°F): Not available
Specific Gravity (water =1): 1.015
pH (as supplied): Not applicable
Vapor Pressure (mmHg): Not available
Evaporation Rate: Not available
Flash Point (°F): >141.8
Upper Explosive Limit (%): Not available
Decomposition Temp (°F): Not available.
Viscosity: Not Available

APPEARANCE

Very light yellow, clear liquid with solvent odour; dispersible in water.
USA VOC content: < 20 g/litre

Section 10 - CHEMICAL STABILITY AND REACTIVITY INFORMATION

CONDITIONS CONTRIBUTING TO INSTABILITY

- Presence of incompatible materials.
- Product is considered stable.
- Hazardous polymerization will not occur.

STORAGE INCOMPATIBILITY

Avoid reaction with oxidizing agents.

Section 11 - TOXICOLOGICAL INFORMATION

X-Duty Cleaner

TOXICITY AND IRRITATION

Not available. Refer to individual constituents.

N-METHYL-2-PYRROLIDONE:

Oral (rat) LD50: 4200 mg/kg*

Oral (rat) LD50: 3914 mg/kg

Dermal (rabbit) LD50: 8000 mg/kg

The material may produce moderate eye irritation leading to inflammation. Repeated or prolonged exposure to irritants may produce conjunctivitis.

100 mg - moderate

Eye (rabbit):

*[Manufacturer]

D-LIMONENE:

TOXICITY

Oral (rat) LD50: 4400 mg/kg

Inhalation (rat) LC50: 90860 mg/m³

Contact allergies quickly manifest themselves as contact eczema, more rarely as urticaria or Quincke's edema. The pathogenesis of contact eczema involves a cell-mediated (T lymphocytes) immune reaction of the delayed type. Other allergic skin reactions, e.g. contact urticaria, involve antibody-mediated immune reactions. The significance of the

IRRITATION

Nil Reported

Skin (rabbit): 500mg/24h Moderate

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Section 11 - TOXICOLOGICAL INFORMATION

contact allergen is not simply determined by its sensitization potential: the distribution of the substance and the opportunities for contact with it are equally important. A weakly sensitizing substance which is widely distributed can be a more important allergen than one with stronger sensitizing potential with which few individuals come into contact. From a clinical point of view, substances are noteworthy if they produce an allergic test reaction in more than 1% of the persons tested.

The substance is classified by IARC as Group 3:

NOT classifiable as to its carcinogenicity to humans.

Evidence of carcinogenicity may be inadequate or limited in animal testing.

Dermal (rabbit): >5000 mg/kg

Tumorigenic by RTECS criteria

data for similar material l-limonene

MATERIAL	CARCINOGEN	SENSITIZER	SKIN	MUTAGEN	REPROTOXIN
N- methyl- 2- pyrrolidone					CP65:Yes

REPROTOXIN

Californian Proposition 65 - Reproductive Toxicity:

TYPE: N-methyl-2-pyrrolidone: developmental

DATE LISTED: June 15, 2001

Section 12 - ECOLOGICAL INFORMATION

DO NOT discharge into sewer or waterways.

Refer to data for ingredients, which follows:

N-METHYL-2-PYRROLIDONE:

DO NOT discharge into sewer or waterways.

log Kow: -0.44-0.1

D-LIMONENE:

Substances containing unsaturated carbons are ubiquitous in indoor environments. They result from many sources (see below). Most are reactive with environmental ozone and many produce stable products which are thought to adversely affect human health. The potential for surfaces in an enclosed space to facilitate reactions should be considered.

Source of unsaturated substances Occupants (exhaled breath, ski oils, personal care products)	Unsaturated substances (Reactive Emissions) Isoprene, nitric oxide, squalene, unsaturated sterols, oleic acid and other unsaturated fatty acids, unsaturated oxidation products	Major Stable Products produced following reaction with ozone. Methacrolein, methyl vinyl ketone, nitrogen dioxide, acetone, 6MHQ, geranyl acetone, 4OPA, formaldehyde, nonanol, decanal, 9- oxo- nonanoic acid, azelaic acid, nonanoic acid.
Soft woods, wood flooring, including cypress, cedar and silver fir boards, houseplants	Isoprene, limonene, alpha-pinene, other terpenes and sesquiterpenes	Formaldehyde, 4- AMC, pinoaldehyde, pinic acid, pinonic acid, formic acid, methacrolein, methyl vinyl ketone, SOAs including ultrafine particles
Carpets and carpet backing	4- Phenylcyclohexene, 4- vinylcyclohexene, styrene, 2- ethylhexyl acrylate, unsaturated fatty acids and esters	Formaldehyde, acetaldehyde, benzaldehyde, hexanal, nonanal, 2 - nonenal
Linoleum and paints/polishes containing linseed oil	Linoleic acid, linolenic acid	Propanal, hexanal, nonanal, 2- heptenal, 2- nonenal, 2- decenal, 1- pentene- 3 - one,

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Section 12 - ECOLOGICAL INFORMATION

Latex paint Certain cleaning products, polishes, waxes, air fresheners	Residual monomers Limonene, alpha- pinene, terpinolene, alpha- terpineol, linalool, linalyl acetate and other terpinoids, longifolene and other sesquiterpenes	propionic acid, n- butyric acid Formaldehyde Formaldehyde, acetaldehyde, glycoaldehyde, formic acid, acetic acid, hydrogen and organic peroxides, acetone, benzaldehyde, 4- hydroxy- 4- methyl- 5- hexen- 1- al, 5 - ethenyl- dihydro- 5- methyl- 2(3H)- furanone, 4- AMC, SOAs including ultrafine particles
Natural rubber adhesive	Isoprene, terpenes	Formaldehyde, methacrolein, methyl vinyl ketone
Photocopier toner, printed paper, styrene polymers Environmental tobacco smoke	Styrene Styrene, acrolein, nicotine	Formaldehyde, benzaldehyde, hexanal, glyoxal, N- methylformamide, nicotinaldehyde, cotinine
Soiled clothing, fabrics, bedding	Squalene, unsaturated sterols, oleic acid and other saturated fatty acids	Acetone, geranyl acetone, 6MHO, 40PA, formaldehyde, nonanal, decanal, 9 - oxo- nonanoic acid, azelaic acid, nonanoic acid
Soiled particle filters	Unsaturated fatty acids from plant waxes, leaf litter, and other vegetative debris; soot; diesel particles	Formaldehyde, nonanal, and other aldehydes; azelaic acid; nonanoic acid; 9- oxo- nonanoic acid and other oxo- acids; compounds with mixed functional groups (=O, - OH, and - COOH) C5 to C10 aldehydes
Ventilation ducts and duct liners	Unsaturated fatty acids and esters, unsaturated oils, neoprene	
" Urban grime"	Polycyclic aromatic hydrocarbons	Oxidized polycyclic aromatic hydrocarbons
Perfumes, colognes, essential oils (e.g. lavender, eucalyptus, tea tree)	Limonene, alpha- pinene, linalool, linalyl acetate, terpinene- 4- ol, gamma - terpinene	Formaldehyde, 4- AMC, acetone, 4- hydroxy- 4- methyl- 5- hexen- 1- al, 5- ethenyl - dihydro- 5- methyl- 2(3H) furanone, SOAs including ultrafine particles
Overall home emissions	Limonene, alpha- pinene, styrene	Formaldehyde, 4- AMC, pinonaldehyde, acetone, pinic acid, pinonic acid, formic acid, benzaldehyde, SOAs including ultrafine particles

Abbreviations: 4-AMC, 4-acetyl-1-methylcyclohexene; 6MHQ, 6-methyl-5-heptene-2-one, 4OPA, 4-oxopentanal, SOA, Secondary Organic Aerosols

Reference: Charles J Weschler; Environmental Health Perspectives, Vol 114, October 2006.

Drinking Water Standards:

hydrocarbon total: 10 ug/l (UK max.).

Do NOT allow product to come in contact with surface waters or to intertidal areas below the mean high water mark. Do not contaminate water when cleaning equipment or disposing of equipment wash-waters.

Wastes resulting from use of the product must be disposed of on site or at approved waste sites.

DO NOT discharge into sewer or waterways.

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Section 13 - DISPOSAL CONSIDERATIONS

Disposal Instructions

All waste must be handled in accordance with local, state and federal regulations.

- Consult manufacturer for recycling options and recycle where possible .
- Consult Waste Management Authority for disposal.
- Incinerate residue at an approved site.
- Recycle containers where possible, or dispose of in an authorized landfill.

Section 14 - TRANSPORTATION INFORMATION

NOT REGULATED FOR TRANSPORT OF DANGEROUS GOODS:UN, IATA,
IMDG

Section 15 - REGULATORY INFORMATION

REGULATIONS

US EPCRA Section 313 Chemical List For Reporting Year 2004

Ingredient	CAS	% de minimus concentration
N- methyl- 2- pyrrolidone	872- 50- 4	1.0
N-methyl-2-pyrrolidone (CAS: 872-50-4) is found on the following regulatory lists;		
Canada - Ontario Occupational Exposure Limits		
Canada - Yukon Permissible Concentrations for Airborne Contaminant Substances		
Canada Domestic Substances List (DSL)		
Canada National Pollutant Release Inventory (NPRI)		
IMO MARPOL 73/78 (Annex II) - List of Noxious Liquid Substances Carried in Bulk		
International Council of Chemical Associations (ICCA) - High Production Volume List		
OECD Representative List of High Production Volume (HPV) Chemicals		
US - California Proposition 65 - Maximum Allowable Dose Levels (MADLs) for Chemicals Causing Reproductive Toxicity		
US - California Proposition 65 - Reproductive Toxicity		
US - Minnesota Hazardous Substance List		
US ACGIH Biological Exposure Indices (BEI) - Notice of Intended Changes		
US AIHA Workplace Environmental Exposure Levels (WEELs)		
US DOE Temporary Emergency Exposure Limits (TEELs)		
US DOT Coast Guard Bulk Hazardous Materials - List of Flammable and Combustible Bulk Liquid Cargoes		
US EPA High Production Volume Program Chemical List		
US EPCRA Section 313 Chemical List For Reporting Year 2004		
US Toxic Substances Control Act (TSCA) - Inventory		
US TSCA Section 12(b) - List of Chemical Substances Subject to Export Notification Requirements		
US TSCA Section 4 - Chemicals Subject to Testing Consent Orders		
US TSCA Section 4/12 (b) - Sunset Date/Status		
N-methyl-2-pyrrolidone (CAS: 26138-58-9) is found on the following regulatory lists;		
Canada National Pollutant Release Inventory (NPRI)		

d-limonene (CAS: 5989-27-5) is found on the following regulatory lists;
Canada Domestic Substances List (DSL)
Canada Ingredient Disclosure List (SOR/88-64)

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Section 15 - REGULATORY INFORMATION

Canada National Pollutant Release Inventory (NPRI)
International Agency for Research on Cancer (IARC) Carcinogens
OECD Representative List of High Production Volume (HPV) Chemicals
OSPAR List of Substances of Possible Concern
US DOE Temporary Emergency Exposure Limits (TEELs)
US EPA High Production Volume Program Chemical List
US Food Additive Database
US NFPA 30B Manufacture and Storage of Aerosol Products - Chemical Heat of Combustion
US Toxic Substances Control Act (TSCA) - Inventory
d-limonene (CAS: 138-86-3) is found on the following regulatory lists;
Canada Domestic Substances List (DSL)
Canada Ingredient Disclosure List (SOR/88-64)
Canada National Pollutant Release Inventory (NPRI)
IMO MARPOL 73/78 (Annex II) - List of Noxious Liquid Substances Carried in Bulk
OECD Representative List of High Production Volume (HPV) Chemicals
US - New Jersey Right to Know Hazardous Substances
US - New Jersey Right to Know Hazardous Substances (Spanish)
US AIHA Workplace Environmental Exposure Levels (WEELs)
US Department of Transportation (DOT) Marine Pollutants - Appendix B
US DOT Coast Guard Bulk Hazardous Materials - List of Flammable and Combustible Bulk Liquid Cargoes
US EPA High Production Volume Chemicals Additional List
US Toxic Substances Control Act (TSCA) - Inventory

Section 16 - OTHER INFORMATION

INGREDIENTS WITH MULTIPLE CAS NUMBERS

Ingredient Name	CAS
N- methyl- 2- pyrrolidone	872- 50- 4, 26138- 58- 9
d- limonene	5989- 27- 5, 138- 86- 3

REPRODUCTIVE HEALTH GUIDELINES

Ingredient	ORG	UF	Endpoi nt	CR	Adeq TLV
N- methyl- 2- pyrrolidone	0.91 mg/m ³	1000	D	NA	-

These exposure guidelines have been derived from a screening level of risk assessment and should not be construed as unequivocally safe limits. ORGS represent an 8-hour time-weighted average unless specified otherwise.

CR = Cancer Risk/10000; UF = Uncertainty factor:

TLV believed to be adequate to protect reproductive health:

LOD: Limit of detection

Toxic endpoints have also been identified as:

D = Developmental; R = Reproductive; TC = Transplacental carcinogen

Jankovic J., Drake F.: A Screening Method for Occupational Reproductive Health Risk:

American Industrial Hygiene Association Journal 57: 641-649 (1996).

EXPOSURE STANDARD FOR MIXTURES

"Worst Case" computer-aided prediction of vapour components/concentrations:

Composite Exposure Standard for Mixture (TWA) (mg/m³): 165.6 mg/m³

If the breathing zone concentration of ANY of the components listed below is exceeded,

"Worst Case" considerations deem the individual to be overexposed.

Component	Breathing Zone ppm	Breathing Zone mg/m ³	Mixture Conc: (%)
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X-DUTY CLEANER

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Component	Breathing zone (ppm)	Breathing Zone (mg/m ³)	Mixture Conc (%)
d-limonene	30.00	165.6000	30.0

Operations which produce a spray/mist or fume/dust, introduce particulates to the breathing zone.

If the breathing zone concentration of ANY of the components listed below is exceeded, "Worst Case" considerations deem the individual to be overexposed.

At the "Composite Exposure Standard for Mixture" (TWA) (mg/m³): 30 mg/m³

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