Section 1 - CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

PRODUCT NAME
CHAIN LUBE FG AEROSOL #631-0915

SYNONYMS
"Manufacturer's Code: 631-0915"

PROPER SHIPPING NAME
AEROSOLS

PRODUCT USE
■ Application is by spray atomisation from a hand held aerosol pack.
Lubricants.

SUPPLIER

Company: RS Components Pty Ltd
Address:
25 Pavesi Street
Smithfield
NSW, 2164
Australia
Telephone: +1 300 656 636
Emergency Tel: 1800 039 008 (24 hours)
Emergency Tel: +61 3 9573 3112
Fax: +1 300 656 696

Company: RS Components Pty Ltd
Address:
Units 30 & 31, 761 Great South Road
Penrose
Auckland, 1006
New Zealand
Telephone: +64 9 526 1600
Fax: +64 9 579 1700

Section 2 - HAZARDS IDENTIFICATION

STATEMENT OF HAZARDOUS NATURE
HAZARDOUS SUBSTANCE. DANGEROUS GOODS. According to the Criteria of NOHSC, and the ADG Code.

RISK
■ Limited evidence of a carcinogenic effect.
■ Risk of explosion if heated under confinement.
■ Harmful to aquatic organisms, may cause long- term adverse effects in the aquatic environment.
■ Possible risk of irreversible effects.

SAFETY
• Do not breathe gas/fumes/vapour/spray.
• Avoid contact with skin.

• Wear suitable protective clothing.

• Wear suitable gloves.
• To clean the floor and all objects contaminated by this material, use water and detergent.
• Keep away from food, drink and animal feeding stuffs.
• If swallowed, IMMEDIATELY contact Doctor or Poisons Information Centre. (show this container or label).
• This material and its container must be disposed of as hazardous waste.

Section 3 - COMPOSITION / INFORMATION ON INGREDIENTS

NAME	CAS RN	%
alkylamines, C11- 14- branched , mono- & dihexyl phosphates	80939-62-4	0-1
2, 6- di- tert- butyl- 4- methylphenol	128-37-0	0-1
tetrafluoroethane	811-97-2	5-10
carbon dioxide	124-38-9	0-1

continued...

Section 4 - FIRST AID MEASURES

SWALLOWED
■ Not considered a normal route of entry.

EYE
■ If aerosols come in contact with the eyes:
• Immediately hold the eyelids apart and flush the eye with fresh 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.
• Seek medical attention without delay; if pain persists or recurs seek medical attention.
• Removal of contact lenses after an eye injury should only be undertaken by skilled personnel.

SKIN
■ If solids or aerosol mists are deposited upon the skin:
• Flush skin and hair with running water (and soap if available).
• Remove any adhering solids with industrial skin cleansing cream.
• DO NOT use solvents.
• Seek medical attention in the event of irritation.

INHALED
■ If aerosols, fumes or combustion products are inhaled:
• Remove to fresh air.
• 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.
• If breathing is shallow or has stopped, ensure clear airway and apply resuscitation, preferably with a demand valve resuscitator, bag-valve mask device, or pocket mask as trained. Perform CPR if necessary.

NOTES TO PHYSICIAN
■ Treat symptomatically.
• Heavy and persistent skin contamination over many years may lead to dysplastic changes. Pre-existing skin disorders may be aggravated by exposure to this product.
• In general, emesis induction is unnecessary with high viscosity, low volatility products, i.e. most oils and greases.
• High pressure accidental injection through the skin should be assessed for possible incision, irrigation and/or debridement.
NOTE: Injuries may not seem serious at first, but within a few hours tissue may become swollen, discoloured and extremely painful with extensive subcutaneous necrosis.

Section 5 - FIRE FIGHTING MEASURES

EXTINGUISHING MEDIA
■ SMALL FIRE: Use extinguishing agent suitable for type of surrounding fire.
LARGE FIRE: Cool cylinder.
DO NOT direct water at source of leak or venting safety devices as icing may occur.
SMALL FIRE:
• Water spray, dry chemical or CO2
LARGE FIRE:
• Water spray or fog.

FIRE FIGHTING
• Alert Fire Brigade and tell them location and nature of hazard.
• May be violently or explosively reactive.
• Wear breathing apparatus plus protective gloves.
• Prevent, by any means available, spillage from entering drains or water course.

FIRE/EXPLOSION HAZARD
• Non combustible.
• Not considered to be a significant fire risk.
• Heating may cause expansion or decomposition leading to violent rupture of containers.
• Aerosol cans may explode on exposure to naked flames.
Decomposition may produce toxic fumes of: carbon dioxide (CO2), other pyrolysis products typical of burning organic material.
CARE: Water in contact with hot liquid may cause foaming and a steam explosion with wide scattering of hot oil and possible severe burns. Foaming may cause overflow of containers and may result in possible fire.

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FIRE INCOMPATIBILITY
• Avoid contamination with oxidising agents i.e. nitrates, oxidising acids, chlorine bleaches, pool chlorine etc. as ignition may result.

HAZCHEM
2YE

Section 6 - ACCIDENTAL RELEASE MEASURES

MINOR SPILLS
• Clean up all spills immediately.
• Avoid breathing vapours and contact with skin and eyes.
• Wear protective clothing, impervious gloves and safety glasses.
• Shut off all possible sources of ignition and increase ventilation.

MAJOR SPILLS
• Remove leaking cylinders to a safe place.
• Fit vent pipes. Release pressure under safe, controlled conditions
• Burn issuing gas at vent pipes.
• DO NOT exert excessive pressure on valve; DO NOT attempt to operate damaged valve.
• Clear area of personnel and move upwind.
• Alert Fire Brigade and tell them location and nature of hazard.
• May be violently or explosively reactive.
• Wear breathing apparatus plus protective gloves.

Personal Protective Equipment advice is contained in Section 8 of the MSDS.

Section 7 - HANDLING AND STORAGE

PROCEDURE FOR HANDLING
• 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.

SUITABLE CONTAINER
• Aerosol dispenser.
• Check that containers are clearly labelled.

STORAGE INCOMPATIBILITY
■ Carbon dioxide:
• reacts violently with strong bases and alkali metals (especially their dusts)
• may ignite or explode when heated or in suspended chemically active metals (and their hydrides) such as aluminium, chromium, manganese, magnesium (above 775 C), titanium (above 550 C), uranium (above 750 C) or zirconium , diethylmagnesium
• is incompatible with water, acrolein, acrylaldehyde, amines, anhydrous ammonia, aziridine, metal acetylides (such as lithium acetylide), caesium monoxide (moist), lithium, potassium, sodium, sodium carbide, sodium-potassium alloy, sodium peroxide, titanium
• may build up static electricity when discharged at high flow rates from storage cylinders or fire extinguishers - this may produce sparks resulting in ignition of flammables or explosives.
CARE: Water in contact with heated material may cause foaming or a steam explosion with possible severe burns from wide scattering of hot material. Resultant overflow of containers may result in fire.
• Compressed gases may contain a large amount of kinetic energy over and above that potentially available from the energy of reaction produced by the gas in chemical reaction with other substances.
• Avoid reaction with oxidising agents.

STORAGE REQUIREMENTS
• Keep dry to avoid corrosion of cans. Corrosion may result in container perforation and internal pressure may eject contents of can.

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Section 8 - EXPOSURE CONTROLS / PERSONAL PROTECTION

EXPOSURE CONTROLS

Source	Material	TWA ppm	TWA mg/m³	STEL ppm	STEL mg/m³
Australia Exposure Standards	alkylamines, C11- 14-branched , mono- & dihexyl phosphates (Inspirable dust (not otherwise classified))		10		
Australia Exposure Standards	tetrafluoroethane (1, 1, 1, 2-Tetrafluoroethane)	1000	4240		
Australia Exposure Standards	carbon dioxide (Carbon dioxide in coal mines)	12500	22500	30000	54000
Australia Exposure Standards	carbon dioxide (Carbon dioxide)	5000	9000	30000	54000

MATERIAL DATA

2,6-DI-TERT-BUTYL-4-METHYLPHENOL:
CHAIN LUBE FG AEROSOL #631-0915:

■ 2,6-di-tert-butyl-4-methylphenol (syn: butylated hydroxytoluene - BHT)

Because high dose levels are required to produce toxic effects and because there is little evidence of either acute or chronic effects amongst workers the recommended TLV-TWA is identical to that proposed for nuisance particulates.

CARBON DIOXIDE:
CHAIN LUBE FG AEROSOL #631-0915:

■ For carbon dioxide:

NOTE: Detector tubes for carbon dioxide, measuring in excess of 0.01 % vol.,are commercially available. Long-term measurements (4 hrs) may be conducted to detect concentrations exceeding 250 ppm.<</>.

CARBON DIOXIDE:
TETRAFLUOROETHANE:

■ May act as a simple asphyxiants; these are gases which, when present in high concentrations, reduce the oxygen content in air below that required to support breathing, consciousness and life; loss of consciousness, with death by suffocation may rapidly occur in an oxygen deficient atmosphere.

CARE: Most simple asphyxiants are odourless or possess low odour and there is no warning on entry into an oxygen deficient atmosphere.

ALKYLAMINES, C11-14-BRANCHED , MONO- & DIHEXYL PHOSPHATES:
TETRAFLUOROETHANE:

■ 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.

CHAIN LUBE FG AEROSOL #631-0915:

■ Toxicity and Irritation data for petroleum-based mineral oils are related to chemical components and vary as does the composition and source of the original crude.

A small but definite risk of occupational skin cancer occurs in workers exposed to persistent skin contamination by oils over a period of years.

Petroleum oils which are solvent refined/extracted or severely hydrotreated, contain very low concentrations of both.

TETRAFLUOROETHANE:

Studies show that HFC 134a is practically nontoxic by inhalation. The acute lethal effects occur at levels exceeding 500000 ppm whilst the threshold for cardiac sensitisation occurs at about 75000 ppm. Repeated exposures at 50000 ppm for 13 weeks did not produce significant toxicity in animals. Limited studies have shown the substance not to be a carcinogen, or to exhibit mutagenic effects. Exposures up to 300000 ppm and 40000 ppm did not produce teratogenic effects in rats and rabbits respectively. The workplace environmental exposure level (WEEL), recommended by the AIHA, is thought to be protective against cardiac sensitisation and systemic injury.

PERSONAL PROTECTION

RESPIRATOR

•Type AX Filter of sufficient capacity. (AS/NZS 1716 & 1715, EN 143:2000 & 149:2001, ANSI Z88 or national equivalent)

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EYE
■ No special equipment for minor exposure i.e. when handling small quantities.
OTHERWISE: For potentially moderate or heavy exposures:
• Safety glasses with side shields.
• NOTE: Contact lenses pose a special hazard; soft lenses may absorb irritants and ALL lenses concentrate them.

HANDS/FEET
• No special equipment needed when handling small quantities.
• OTHERWISE:
• For potentially moderate exposures:
• Wear general protective gloves, eg. light weight rubber gloves.

OTHER
■ No special equipment needed when handling small quantities.
OTHERWISE:
• Overalls.
• Skin cleansing cream.
• Eyewash unit.
• Do not spray on hot surfaces.

ENGINEERING CONTROLS
■ Engineering controls are used to remove a hazard or place a barrier between the worker and the hazard. Well-designed engineering controls can be highly effective in protecting workers and will typically be independent of worker interactions to provide this high level of protection.
The basic types of engineering controls are:
Process controls which involve changing the way a job activity or process is done to reduce the risk.
Enclosure and/or isolation of emission source which keeps a selected hazard "physically" away from the worker and ventilation that strategically "adds" and "removes" air in the work environment.

Section 9 - PHYSICAL AND CHEMICAL PROPERTIES

APPEARANCE
Off-white liquid aerosol with a characteristic odour; insoluble in water.

PHYSICAL PROPERTIES
Liquid.
Gas.
Does not mix with water.
Floats on water.

State	Liquid	Molecular Weight	Not Applicable
Melting Range (°C)	Not Available	Viscosity	425 mPas @ 25°C
Boiling Range (°C)	Not Available	Solubility in water (g/L)	Immiscible
Flash Point (°C)	>260 (OC)	pH (1% solution)	Not Applicable
Decomposition Temp (°C)	Not Available	pH (as supplied)	Not Applicable
Autoignition Temp (°C)	>200	Vapour Pressure (kPa)	Not Available
Upper Explosive Limit (%)	Not Available	Specific Gravity (water=1)	0.93 @ 20C
Lower Explosive Limit (%)	Not Available	Relative Vapour Density (air=1)	Not Available
Volatile Component (%vol)	Not Available	Evaporation Rate	Not Applicable

carbon dioxide
log Kow (Sangster 1997): 0.83

Section 10 - STABILITY AND REACTIVITY

CONDITIONS CONTRIBUTING TO INSTABILITY
• Elevated temperatures.
• Presence of open flame.
• Product is considered stable.
• Hazardous polymerisation will not occur.
For incompatible materials - refer to Section 7 - Handling and Storage.

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Section 11 - TOXICOLOGICAL INFORMATION

POTENTIAL HEALTH EFFECTS

ACUTE HEALTH EFFECTS

SWALLOWED
■ Not normally a hazard due to physical form of product.
Considered an unlikely route of entry in commercial/industrial environments.

EYE
■ Although the material is not thought to be an irritant (as classified by EC Directives), direct contact with the eye may produce transient discomfort characterised by tearing or conjunctival redness (as with windburn).
Not considered to be a risk because of the extreme volatility of the gas.

SKIN
■ There is some evidence to suggest that this material can cause inflammation of the skin on contact in some persons.
Spray mist may produce discomfort.
The liquid may be miscible with fats or oils and may degrease the skin, producing a skin reaction described as non-allergic contact dermatitis. The material is unlikely to produce an irritant dermatitis as described in EC Directives .
Open cuts, abraded or irritated skin should not be exposed to this material.
The material may accentuate any pre-existing dermatitis condition.
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.

INHALED
■ Inhalation of aerosols (mists, fumes), generated by the material during the course of normal handling, may be damaging to the health of the individual.
There is some evidence to suggest that the material can cause respiratory irritation in some persons. The body's response to such irritation can cause further lung damage.
Inhalation of toxic gases may cause:
- Central Nervous System effects including depression, headache, confusion, dizziness, stupor, coma and seizures;
- respiratory: acute lung swellings, shortness of breath, wheezing, rapid breathing, other symptoms and respiratory arrest;
- heart: collapse, irregular heartbeats and cardiac arrest;
- gastrointestinal: irritation, ulcers, nausea and vomiting (may be bloody), and abdominal pain.

Inhalation hazard is increased at higher temperatures.
Inhalation of oil droplets or aerosols may cause discomfort and may produce chemical inflammation of the lungs.
WARNING:Intentional misuse by concentrating/inhaling contents may be lethal.
Spray mist may produce discomfort.

CHRONIC HEALTH EFFECTS
■ There has been concern that this material can cause cancer or mutations, but there is not enough data to make an assessment.
Based on experience with animal studies, exposure to the material may result in toxic effects to the development of the foetus, at levels which do not cause significant toxic effects to the mother.
Laboratory (in vitro) and animal studies show, exposure to the material may result in a possible risk of irreversible effects, with the possibility of producing mutation.
Substance accumulation, in the human body, may occur and may cause some concern following repeated or long-term occupational exposure.
Based on experience with similar materials, there is a possibility that exposure to the material may reduce fertility in humans at levels which do not cause other toxic effects.
Principal route of occupational exposure to the gas is by inhalation.
Oil may contact the skin or be inhaled. Extended exposure can lead to eczema, inflammation of hair follicles, pigmentation of the face and warts on the soles of the feet. There are few systemic effects, but prolonged exposure may lead to a higher incidence of lung scarring.

TOXICITY AND IRRITATION
■ No significant acute toxicological data identified in literature search.
The materials included in the Lubricating Base Oils category are related from both process and physical-chemical perspectives;
The potential toxicity of a specific distillate base oil is inversely related to the severity or extent of processing the oil has undergone, since:
• The adverse effects of these materials are associated with undesirable components, and
• The levels of the undesirable components are inversely related to the degree of processing;
• Distillate base oils receiving the same degree or extent of processing will have similar toxicities;
• The potential toxicity of residual base oils is independent of the degree of processing the oil receives.
Highly and Severely Refined Distillate Base Oils
Acute toxicity: Multiple studies of the acute toxicity of highly & severely refined base oils have been reported. Irrespective of the crude source or the method or extent of processing, the oral LD50s have been observed to be >5 g/kg (bw) and the dermal LD50s have ranged from >2 to >5g/kg (bw).
When tested for skin and eye irritation, the materials have been reported as “non-irritating” to “moderately irritating”
Testing in guinea pigs for sensitization has been negative
Repeat dose toxicity: . Several studies have been conducted with these oils.

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CARCINOGEN			
Butylated hydroxytoluene (BHT)	International Agency for Research on Cancer (IARC) - Agents Reviewed by the IARC Monographs	Group	3
REPROTOXIN			
carbon dioxide	ILO Chemicals in the electronics industry that have toxic effects on reproduction	Reduced fertility or sterility	

Section 12 - ECOLOGICAL INFORMATION

Harmful to aquatic organisms, may cause long-term adverse effects in the aquatic environment.
This material and its container must be disposed of as hazardous waste.

Ecotoxicity

Ingredient	Persistence: Water/Soil	Persistence: Air	Bioaccumulation	Mobility
alkylamines, C11- 14- branched , mono- & dihexyl phosphates	No Data Available	No Data Available		
2, 6- di- tert- butyl- 4- methylphenol	HIGH	No Data Available	LOW	LOW
tetrafluoroethane	HIGH	No Data Available	LOW	HIGH
carbon dioxide	LOW	No Data Available	LOW	HIGH

Section 13 - DISPOSAL CONSIDERATIONS

• DO NOT allow wash water from cleaning or process equipment to enter drains.
• It may be necessary to collect all wash water for treatment before disposal.
• In all cases disposal to sewer may be subject to local laws and regulations and these should be considered first.
• Where in doubt contact the responsible authority.
• Consult State Land Waste Management Authority for disposal.
• Discharge contents of damaged aerosol cans at an approved site.
• Allow small quantities to evaporate.
• DO NOT incinerate or puncture aerosol cans.

Section 14 - TRANSPORTATION INFORMATION

Labels Required: NON-FLAMMABLE COMPRESSED GAS

HAZCHEM:
2YE (ADG7)

ADG7:

Class or Division	2.2	Subsidiary Risk:	None
UN No.:	1950	Packing Group:	None
Special Provision:	63 190 277 327	Limited Quantity:	See SP 277
Portable Tanks & Bulk Containers - Instruction:	None	Portable Tanks & Bulk Containers - Special Provision:	None
Packagings & IBCs - Packing Instruction:	PP17 PP87 L2	Packagings & IBCs - Special Packing Provision:	P003 LP02

Name and Description: AEROSOLS

continued...

Land Transport UNDG:

Class or division	2.2	Subsidiary risk:	None
UN No.:	1950	UN packing group:	None
Shipping Name:AEROSOLS			

Air Transport IATA:

ICAO/IATA Class:	2.1	ICAO/IATA Subrisk:	None
UN/ID Number:	1950	Packing Group:	-
Special provisions:	A145		

Shipping name:AEROSOLS

Maritime Transport IMDG:

IMDG Class:	2	IMDG Subrisk:	SP63
UN Number:	1950	Packing Group:	None
EMS Number:	F- D, S- U	Special provisions:	63 190 277 327 344 959
Limited Quantities:	See SP277		
Shipping name:AEROSOLS			

Section 15 - REGULATORY INFORMATION

POISONS SCHEDULE None

REGULATIONS

Regulations for ingredients

alkylamines, C11-14-branched , mono- & dihexyl phosphates (CAS: 80939-62-4) is found on the following regulatory lists;
"Australia Exposure Standards","Australia Inventory of Chemical Substances (AICS)","Australia National Pollutant Inventory"

2,6-di-tert-butyl-4-methylphenol (CAS: 128-37-0) is found on the following regulatory lists;
"Australia Exposure Standards","Australia Hazardous Substances","Australia Inventory of Chemical Substances (AICS)","FEMA Generally Recognized as Safe (GRAS) Flavoring Substances 23 - Examples of FEMA GRAS Substances with Non-Flavor Functions", "GESAMP/EHS Composite List - GESAMP Hazard Profiles","International Agency for Research on Cancer (IARC) - Agents Reviewed by the IARC Monographs","International Council of Chemical Associations (ICCA) - High Production Volume List","International Fragrance Association (IFRA) Survey: Transparency List","OECD List of High Production Volume (HPV) Chemicals","OSPAR National List of Candidates for Substitution – United Kingdom","United Nations Consolidated List of Products Whose Consumption and/or Sale Have Been Banned, Withdrawn, Severely Restricted or Not Approved by Governments"

tetrafluoroethane (CAS: 811-97-2) is found on the following regulatory lists;
"Australia - Australian Capital Territory - Environment Protection Regulation: Ambient environmental standards (AQUA/1 to 6 - non-pesticide anthropogenic organics)","Australia - Australian Capital Territory - Environment Protection Regulation: Pollutants entering waterways taken to cause environmental harm (Aquatic habitat)","Australia Customs (Prohibited Exports) Regulations 1958 - Schedule 15 Ozone depleting substances - Part 9 HFCs","Australia Exposure Standards","Australia Hazardous Substances","Australia High Volume Industrial Chemical List (HVICL)","Australia Inventory of Chemical Substances (AICS)","OECD List of High Production Volume (HPV) Chemicals"

carbon dioxide (CAS: 124-38-9) is found on the following regulatory lists;
"Australia Exposure Standards","Australia Hazardous Substances","Australia High Volume Industrial Chemical List (HVICL)", "Australia Inventory of Chemical Substances (AICS)","CODEX General Standard for Food Additives (GSFA) - Additives Permitted for Use in Food in General, Unless Otherwise Specified, in Accordance with GMP","OECD List of High Production Volume (HPV) Chemicals"

No data for Chain Lube FG Aerosol #631-0915 (CW: 31-6044)

Section 16 - OTHER INFORMATION

Denmark Advisory list for selfclassification of dangerous substances

Substance	CAS	Suggested codes
2, 6- di- tert- butyl- 4- methylphenol	128- 37- 0	Carc3; R40 Mut3; R68 Xn; R22 Xi; R38 N; R50/53
tetrafluoroethane	811- 97- 2	T; R25

■ Classification of the preparation and its individual components has drawn on official and authoritative sources as well as independent review by the Chemwatch Classification committee using available literature references.
A list of reference resources used to assist the committee may be found at:
www.chemwatch.net/references.

continued...

■ The (M)SDS is a Hazard Communication tool and should be used to assist in the Risk Assessment. Many factors determine whether the reported Hazards are Risks in the workplace or other settings.

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This is the end of the MSDS.