

Chemwatch GHS Safety Data Sheet
Issue Date: 25-Jan-2013
XC554SP

Hazard Alert Code: MODERATE

CHEMWATCH 8531-92
Version No:4.1.1.1
Page 1 of 10

Section 1 - CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

PRODUCT NAME

A-Gas R404A

PROPER SHIPPING NAME

REFRIGERANT GAS R 404A

PRODUCT USE

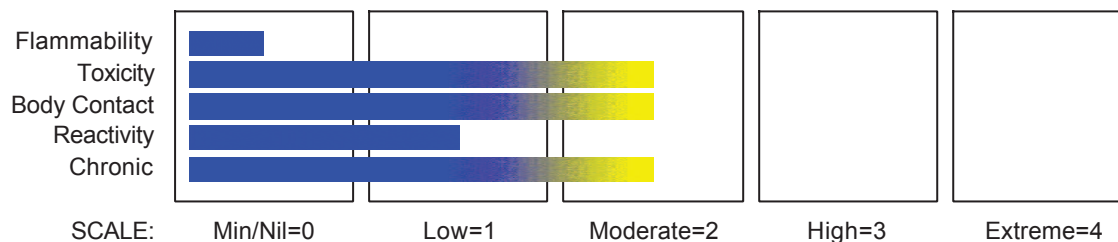
The use of a quantity of material in an unventilated or confined space may result in increased exposure and an irritating atmosphere developing. Before starting consider control of exposure by mechanical ventilation.
Refrigerant.

SUPPLIER

Company: A- Gas (Australia) Pty Ltd
Address:
9- 11 Oxford Road
Laverton North
VIC 3026
Australia
Telephone: [61] (0) 3 93689222
Emergency Tel: **TOLL: [61] 1800 024 973**
Fax: [61] (0) 3 93689233

Section 2 - HAZARDS IDENTIFICATION

CHEMWATCH HAZARD RATINGS



GHS Classification

Gas under Pressure (Liquefied gas)
STOT - SE (Narcosis) Category 3
STOT - SE (Resp. Irr.) Category 3



EMERGENCY OVERVIEW

HAZARD WARNING

Determined by Chemwatch using GHS criteria
H280 Contains gas under pressure; may explode if heated.

continued...

A-Gas R404A

Chemwatch GHS Safety Data Sheet
Issue Date: 25-Jan-2013
XC554SP

Hazard Alert Code: MODERATE

CHEMWATCH 8531-92

Version No:4.1.1.1

Page 2 of 10

Section 2 - HAZARDS IDENTIFICATION

H335 May cause respiratory irritation.
H336 May cause drowsiness or dizziness.
AUH044 Risk of explosion if heated under confinement

PRECAUTIONARY STATEMENTS

Prevention

Code	Phrase
P261	Avoid breathing dust/ fume/ gas/ mist/ vapours/ spray.
P271	Use only outdoors or in a well- ventilated area.

Response

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

Storage

Code	Phrase
P403+P233	Store in a well- ventilated place. Keep container tightly closed.
P405	Store locked up.
P410+P403	Protect from sunlight. Store in a well- ventilated place.

Disposal

Code	Phrase
P501	Dispose of contents/container to ...

Section 3 - COMPOSITION / INFORMATION ON INGREDIENTS

NAME	CAS RN	%
1, 1, 1- trifluoroethane	420-46-2	52
pentafluoroethane	354-33-6	44
tetrafluoroethane	811-97-2	4

Section 4 - FIRST AID MEASURES

SWALLOWED

- Not considered a normal route of entry.
- If poisoning occurs, contact a doctor or Poisons Information Centre.
- Avoid giving milk or oils.
- Avoid giving alcohol.

EYE

- If product comes in contact with eyes remove the patient from gas source or contaminated area.
- Take the patient to the nearest eye wash, shower or other source of clean water.
- Open the eyelid(s) wide to allow the material to evaporate.
- Gently rinse the affected eye(s) with clean, cool water for at least 15 minutes. Have the patient lie or sit down and tilt the head back. Hold the eyelid(s) open and pour water slowly over the eyeball(s) at the inner corners, letting the water run out of the outer corners.

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.
- In case of cold burns (frost-bite):
- Move casualty into warmth before thawing the affected part; if feet are affected carry if possible
 - Bathe the affected area immediately in luke-warm water (not more than 35 deg C) for 10 to 15 minutes, immersing if possible and without rubbing
 - DO NOT apply hot water or radiant heat.
 - Apply a clean, dry, light dressing of "fluffed-up" dry gauze bandage.

INHALED

- Following exposure to gas, remove the patient from the gas source or contaminated area.

continued...

A-Gas R404A

Hazard Alert Code: MODERATE

Chemwatch GHS Safety Data Sheet
Issue Date: 25-Jan-2013
XC554SP

CHEMWATCH 8531-92
Version No:4.1.1.1
Page 3 of 10

Section 4 - FIRST AID MEASURES

- NOTE: Personal Protective Equipment (PPE), including positive pressure self-contained breathing apparatus may be required to assure the safety of the rescuer.
- Prosthesis such as false teeth, which may block the airway, should be removed, where possible, prior to initiating first aid procedures.
- If the patient is not breathing spontaneously, administer rescue breathing.

NOTES TO PHYSICIAN

for intoxication due to Freons/ Halons;

A: Emergency and Supportive Measures

- Maintain an open airway and assist ventilation if necessary
- Treat coma and arrhythmias if they occur. Avoid (adrenaline) epinephrine or other sympathomimetic amines that may precipitate ventricular arrhythmias. Tachyarrhythmias caused by increased myocardial sensitisation may be treated with propranolol, 1-2 mg IV or esmolol 25-100 microg/kg/min IV.

- Monitor the ECG for 4-6 hours

B: Specific drugs and antidotes:

- There is no specific antidote.

for gas exposures:

BASIC TREATMENT

- Establish a patent airway with suction where necessary.
- Watch for signs of respiratory insufficiency and assist ventilation as necessary.
- Administer oxygen by non-rebreather mask at 10 to 15 l/min.
- Monitor and treat, where necessary, for pulmonary oedema .

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.

FIRE FIGHTING

GENERAL

- Alert Fire Brigade and tell them location and nature of hazard.
- Wear breathing apparatus and protective gloves.
- Fight fire from a safe distance, with adequate cover.
- Use water delivered as a fine spray to control fire and cool adjacent area.

FIRE/EXPLOSION HAZARD

- Containers may explode when heated - Ruptured cylinders may rocket
- Fire exposed containers may vent contents through pressure relief devices.
- High concentrations of gas may cause asphyxiation without warning.
- May decompose explosively when heated or involved in fire.

Decomposition may produce toxic fumes of: carbon monoxide (CO), carbon dioxide (CO₂), hydrogen fluoride, other pyrolysis products typical of burning organic material.

Contains low boiling substance: Closed containers may rupture due to pressure buildup under fire conditions.

FIRE INCOMPATIBILITY

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

Section 6 - ACCIDENTAL RELEASE MEASURES

MINOR SPILLS

- Avoid breathing vapour and any contact with liquid or gas. Protective equipment including respirator should be used.
- DO NOT enter confined spaces where gas may have accumulated.
- Increase ventilation.
- Clear area of personnel.

continued...

A-Gas R404A

Chemwatch GHS Safety Data Sheet
Issue Date: 25-Jan-2013
XC554SP

Hazard Alert Code: MODERATE

CHEMWATCH 8531-92
Version No:4.1.1.1
Page 4 of 10

Section 6 - ACCIDENTAL RELEASE MEASURES

MAJOR SPILLS

- Clear area of all unprotected personnel and move upwind.
- Alert Emergency Authority and advise them of the location and nature of hazard.
- Wear breathing apparatus and protective gloves.
- Prevent by any means available, spillage from entering drains and water-courses.
- 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.

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

Section 7 - HANDLING AND STORAGE

PROCEDURE FOR HANDLING

- Consider use in closed pressurised systems, fitted with temperature, pressure and safety relief valves which are vented for safe dispersal.
- The tubing network design connecting gas cylinders to the delivery system should include appropriate pressure indicators and vacuum or suction lines.
- Fully-welded types of pressure gauges, where the bourdon tube sensing element is welded to the gauge body, are recommended.
- Before connecting gas cylinders, ensure manifold is mechanically secure and does not contain another gas. Before disconnecting gas cylinder, isolate supply line segment proximal to cylinder, remove trapped gas in supply line with aid of vacuum pump.
- DO NOT transfer gas from one cylinder to another.

SUITABLE CONTAINER

- DO NOT use aluminium or galvanised containers.
- Cylinder:
 - Ensure the use of equipment rated for cylinder pressure.
 - Ensure the use of compatible materials of construction.
 - Valve protection cap to be in place until cylinder is secured, connected.

STORAGE INCOMPATIBILITY

Haloalkanes:

- are highly reactive: some of the more lightly substituted lower members are highly flammable; the more highly substituted may be used as fire suppressants, not always with the anticipated results.
- may react with the lighter divalent metals to produce more reactive compounds analogous to Grignard reagents.
- may produce explosive compounds following prolonged contact with metallic or other azides
- may react on contact with potassium or its alloys - although apparently stable on contact with a wide range of halocarbons, reaction products may be shock-sensitive and may explode with great violence on light impact; severity generally increases with the degree of halocarbon substitution and potassium-sodium alloys give extremely sensitive mixtures .
- Avoid magnesium, aluminium and their alloys, brass and steel.
- Avoid reaction with oxidising agents.

STORAGE REQUIREMENTS

- Cylinders should be stored in a purpose-built compound with good ventilation, preferably in the open.
 - Such compounds should be sited and built in accordance with statutory requirements.
 - The storage compound should be kept clear and access restricted to authorised personnel only.
 - Cylinders stored in the open should be protected against rust and extremes of weather.
- Storage temperature <52 deg.C.

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	Notes
_____	_____	_____	_____	_____	_____	_____	_____	_____	_____

continued...

A-Gas R404A

Hazard Alert Code: MODERATE

Chemwatch GHS Safety Data Sheet
Issue Date: 25-Jan-2013
XC554SP

CHEMWATCH 8531-92
Version No:4.1.1.1
Page 5 of 10

Section 8 - EXPOSURE CONTROLS / PERSONAL PROTECTION

Source	Material	TWA ppm	TWA mg/m ³	STEL ppm	STEL mg/m ³	Peak ppm	Peak mg/m ³	TWA F/CC	Notes
Australia Exposure Standards	(1, 1, 1, 2- Tetrafluoroethan e)	1000	4240						

The following materials had no OELs on our records

- 1, 1, 1- trifluoroethane: CAS:420- 46- 2 CAS:27987- 06- 0
- pentafluoroethane: CAS:354- 33- 6

MATERIAL DATA

1,1,1-TRIFLUOROETHANE:

AA:

PENTAFLUOROETHANE:

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.

1,1,1-TRIFLUOROETHANE:

PENTAFLUOROETHANE:

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.

AA:

None assigned. Refer to individual constituents.

1,1,1-TRIFLUOROETHANE:

CEL-TWA: 200 mg/m³; STEL: 500 mg/m³

PENTAFLUOROETHANE:

CEL TWA: 1000 ppm, 4240 mg/m³ [DuPont]

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)

EYE

- Chemical goggles.
- Full face shield may be required for supplementary but never for primary protection of eyes
- Contact lenses may pose a special hazard; soft contact lenses may absorb and concentrate irritants. A written policy document,

continued...

A-Gas R404A

Chemwatch GHS Safety Data Sheet
Issue Date: 25-Jan-2013
XC554SP

Hazard Alert Code: MODERATE

CHEMWATCH 8531-92
Version No:4.1.1.1
Page 6 of 10

Section 8 - EXPOSURE CONTROLS / PERSONAL PROTECTION

describing the wearing of lens or restrictions on use, should be created for each workplace or task. This should include a review of lens absorption and adsorption for the class of chemicals in use and an account of injury experience. Medical and first-aid personnel should be trained in their removal and suitable equipment should be readily available. In the event of chemical exposure, begin eye irrigation immediately and remove contact lens as soon as practicable. Lens should be removed at the first signs of eye redness or irritation - lens should be removed in a clean environment only after workers have washed hands thoroughly. [CDC NIOSH Current Intelligence Bulletin 59], [AS/NZS 1336 or national equivalent].

HANDS/FEET

- When handling sealed and suitably insulated cylinders wear cloth or leather gloves.

- Insulated gloves:

NOTE: Insulated gloves should be loose fitting so that may be removed quickly if liquid is spilled upon them.

OTHER

- Protective overalls, closely fitted at neck and wrist.
- Eye-wash unit.
- Ensure availability of lifeline in confined spaces.
- Staff should be trained in all aspects of rescue work.

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

Colourless liquefied gas with slight ethereal odour; does not mix with water.

PHYSICAL PROPERTIES

Gas.

Does not mix with water.

Sinks in water.

State	Liquefied Gas	Molecular Weight	Not Applicable
Melting Range (°C)	Not Available	Viscosity	Not Available
Boiling Range (°C)	- 46.7	Solubility in water (g/L)	Immiscible
Flash Point (°C)	Not Applicable	pH (1% solution)	Not Applicable
Decomposition Temp (°C)	Not Available	pH (as supplied)	Not Applicable
Autoignition Temp (°C)	Not Applicable	Vapour Pressure (kPa)	1270 @ 25 C
Upper Explosive Limit (%)	Not Applicable	Specific Gravity (water=1)	1.05 @ 25 deg.C
Lower Explosive Limit (%)	Not Applicable	Relative Vapour Density (air=1)	Not Available
Volatile Component (%vol)	100	Evaporation Rate	>1 (CL4=1)

Section 10 - CHEMICAL STABILITY

CONDITIONS CONTRIBUTING TO INSTABILITY

- Presence of incompatible materials.
- Product is considered stable.
- Hazardous polymerisation will not occur.
- Extremely high temperatures.

For incompatible materials - refer to Section 7 - Handling and Storage.

continued...

Section 11 - TOXICOLOGICAL INFORMATION

Health hazard summary table:

Acute toxicity	Not applicable
Skin corrosion/irritation	Not applicable
Serious eye damage/irritation	Not applicable
Respiratory or skin sensitization	Not applicable
Germ cell mutagenicity	Not applicable
Carcinogenicity	Not applicable
Reproductive toxicity	Not applicable
STOT- single exposure	STOT SE 3
	STOT SE 3
STOT- repeated exposure	Not applicable
Aspiration hazard	Not applicable

POTENTIAL HEALTH EFFECTS**ACUTE HEALTH EFFECTS****SWALLOWED**

- Overexposure is unlikely in this form.
- 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).
- Vapourising liquid causes rapid cooling and contact may cause cold burns, frostbite, even through normal gloves. Frozen skin tissues are painless and appear waxy and yellow.

SKIN

- Skin contact is not thought to have harmful health effects (as classified under EC Directives); the material may still produce health damage following entry through wounds, lesions or abrasions.
- There is some evidence to suggest that this material can cause inflammation of the skin on contact in some persons.
- Fluorocarbons remove natural oils from the skin, causing irritation, dryness and sensitivity.
- Vapourising liquid causes rapid cooling and contact may cause cold burns, frostbite, even through normal gloves. Frozen skin tissues are painless and appear waxy and yellow.
- 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 vapours may cause drowsiness and dizziness. This may be accompanied by sleepiness, reduced alertness, loss of reflexes, lack of co-ordination, and vertigo.
- Inhalation of vapours or 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 non-toxic gases may cause:
 - CNS effects: headache, confusion, dizziness, stupor, seizures and coma;
 - respiratory: shortness of breath and rapid breathing;
 - cardiovascular: collapse and irregular heart beats;
 - gastrointestinal: mucous membrane irritation, nausea and vomiting.
- Material is highly volatile and may quickly form a concentrated atmosphere in confined or unventilated areas. The vapour may displace and replace air in breathing zone, acting as a simple asphyxiant.
- The use of a quantity of material in an unventilated or confined space may result in increased exposure and an irritating atmosphere developing. Before starting consider control of exposure by mechanical ventilation.
- Exposure to fluorocarbons can produce non-specific flu-like symptoms such as chills, fever, weakness, muscle pain, headache, chest discomfort, sore throat and dry cough with rapid recovery. High concentrations can cause irregular heartbeats and a stepwise reduction in lung capacity.
- Acute intoxication by halogenated aliphatic hydrocarbons appears to take place over two stages. Signs of a reversible narcosis are evident in the first stage and in the second stage signs of injury to organs may become evident, a single organ alone is (almost) never involved.
- Acute intoxication by halogenated aliphatic hydrocarbons appears to take place over two stages. Signs of a reversible narcosis are evident in the first stage and in the second stage signs of injury to organs may become evident, a single organ alone is (almost) never involved.

A-Gas R404A

Chemwatch GHS Safety Data Sheet
Issue Date: 25-Jan-2013
XC554SP

Hazard Alert Code: MODERATE

CHEMWATCH 8531-92
Version No:4.1.1.1
Page 8 of 10

Section 11 - TOXICOLOGICAL INFORMATION

CHRONIC HEALTH EFFECTS

Substance accumulation, in the human body, may occur and may cause some concern following repeated or long-term occupational exposure.

Principal route of occupational exposure to the gas is by inhalation.

Fluorocarbons can cause an increased risk of cancer, spontaneous abortion and birth defects.

TOXICITY AND IRRITATION

■ Not available. Refer to individual constituents.

Section 12 - ECOLOGICAL INFORMATION

This material and its container must be disposed of as hazardous waste.

Ecotoxicity

Ingredient	Persistence: Water/Soil	Persistence: Air	Bioaccumulation	Mobility
1, 1, 1- trifluoroethane	HIGH	No Data Available	LOW	HIGH
pentafluoroethane	HIGH	No Data Available	LOW	MED
tetrafluoroethane	HIGH	No Data Available	LOW	HIGH

Section 13 - DISPOSAL CONSIDERATIONS

- Evaporate residue at an approved site.
- Return empty containers to supplier. If containers are marked non-returnable establish means of disposal with manufacturer prior to purchase.
- Ensure damaged or non-returnable cylinders are gas-free before disposal.

Section 14 - TRANSPORTATION INFORMATION



Labels Required: NON-FLAMMABLE COMPRESSED GAS

HAZCHEM:

2TE (ADG7)

ADG7:

Class or Division:	2.2	Subsidiary Risk:	None
UN No.:	3337	Packing Group:	None
Special Provision:	None	Limited Quantity:	120 ml
Portable Tanks & Bulk Containers - Instruction:	T50	Portable Tanks & Bulk Containers - Special Provision:	None
Packagings & IBCs - Packing Instruction:	P200	Packagings & IBCs - Special Packing Provision:	None
Name and Description:	REFRIGERANT GAS R 404A		

Air Transport IATA:

ICAO/IATA Class:	2.2	ICAO/IATA Subrisk:	None
UN/ID Number:	3337	Packing Group:	-

continued...

A-Gas R404A

Hazard Alert Code: MODERATE

Chemwatch GHS Safety Data Sheet

Issue Date: 25-Jan-2013

XC554SP

CHEMWATCH 8531-92

Version No:4.1.1.1

Page 9 of 10

Section 14 - TRANSPORTATION INFORMATION

Special provisions:	None		
Cargo Only			
Packing Instructions:	200	Maximum Qty/Pack:	150 kg
Passenger and Cargo		Passenger and Cargo	
Packing Instructions:	200	Maximum Qty/Pack:	75 kg
Passenger and Cargo Limited Quantity		Passenger and Cargo Limited Quantity	
Packing Instructions:	Forbidden	Maximum Qty/Pack:	Forbidden

Shipping name:REFRIGERANT GAS R 404A

Maritime Transport IMDG:

IMDG Class: 2.2 IMDG Subrisk: None

UN Number: 3337 Packing Group: None

EMS Number: F-C,S-V Special provisions: None

Limited Quantities: 120 ml

Shipping name:REFRIGERANT GAS R 404A

Section 15 - REGULATORY INFORMATION

POISONS SCHEDULE None

REGULATIONS

Regulations for ingredients

C2-H3-F3 (CAS: 420-46-2, 27987-06-0) 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: Ambient environmental standards (Domestic water supply - inorganic chemicals)", "Australia - Australian Capital Territory - Environment Protection Regulation: Ambient environmental standards (STOCK - inorganic chemicals)", "Australia - Australian Capital Territory - Environment Protection Regulation: Pollutants entering waterways taken to cause environmental harm - Domestic water supply quality", "Australia - Australian Capital Territory - Environment Protection Regulation: Pollutants entering waterways taken to cause environmental harm (Aquatic habitat)", "Australia - Australian Capital Territory - Environment Protection Regulation: Pollutants entering waterways taken to cause environmental harm (IRRIG)", "Australia - Australian Capital Territory - Environment Protection Regulation: Pollutants entering waterways taken to cause environmental harm (STOCK)", "Australia - South Australia Controlled Substances (Poisons) Regulations - Schedule E: Schedule 2 poisons authorised to be sold by holder of a medicine sellers licence", "Australia Customs (Prohibited Exports) Regulations 1958 - Schedule 15 Ozone depleting substances - Part 9 HFCs", "Australia Drinking Water Guideline Values For Physical and Chemical Characteristics", "Australia Hazardous Substances", "Australia Inventory of Chemical Substances (AICS)", "Australia National Pollutant Inventory", "Australia Standard for the Uniform Scheduling of Medicines and Poisons (SUSMP) - Appendix F (Part 3)", "Australia Standard for the Uniform Scheduling of Medicines and Poisons (SUSMP) - Schedule 2", "Australia Standard for the Uniform Scheduling of Medicines and Poisons (SUSMP) - Schedule 4", "Australia Standard for the Uniform Scheduling of Medicines and Poisons (SUSMP) - Schedule 5", "Australia Standard for the Uniform Scheduling of Medicines and Poisons (SUSMP) - Schedule 6", "International Maritime Dangerous Goods Requirements (IMDG Code) - Substance Index", "OECD List of High Production Volume (HPV) Chemicals", "WHO Guidelines for Drinking-water Quality - Guideline values for chemicals that are of health significance in drinking-water"

C2-H-F5 (CAS: 354-33-6) 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: Ambient environmental standards (Domestic water supply - inorganic chemicals)", "Australia - Australian Capital Territory - Environment Protection Regulation: Ambient environmental standards (STOCK - inorganic chemicals)", "Australia - Australian Capital Territory - Environment Protection Regulation: Pollutants entering waterways taken to cause environmental harm - Domestic water supply quality", "Australia - Australian Capital Territory - Environment Protection Regulation: Pollutants entering waterways taken to cause environmental harm (Aquatic habitat)", "Australia - Australian Capital Territory - Environment Protection Regulation: Pollutants entering waterways taken to cause environmental harm (IRRIG)", "Australia - Australian Capital Territory - Environment Protection Regulation: Pollutants entering waterways taken to cause environmental harm (STOCK)", "Australia - South Australia Controlled Substances (Poisons) Regulations - Schedule E: Schedule 2 poisons authorised to be sold by holder of a medicine sellers licence", "Australia Customs (Prohibited Exports) Regulations 1958 - Schedule 15 Ozone depleting substances - Part 9 HFCs", "Australia Drinking Water Guideline Values For Physical and Chemical Characteristics", "Australia Hazardous Substances", "Australia Inventory of Chemical Substances (AICS)", "Australia National Pollutant Inventory", "Australia Standard for the Uniform Scheduling of Medicines and Poisons (SUSMP) - Appendix F (Part 3)", "Australia Standard for the Uniform Scheduling of Medicines and Poisons (SUSMP) - Schedule 2", "Australia Standard for the Uniform Scheduling of Medicines and Poisons (SUSMP) - Schedule 4", "Australia Standard for the Uniform Scheduling of Medicines and Poisons (SUSMP) - Schedule 5", "Australia Standard

continued...

A-Gas R404A

Chemwatch GHS Safety Data Sheet

Issue Date: 25-Jan-2013

XC554SP

Hazard Alert Code: MODERATE

CHEMWATCH 8531-92

Version No:4.1.1.1

Page 10 of 10

Section 15 - REGULATORY INFORMATION

for the Uniform Scheduling of Medicines and Poisons (SUSMP) - Schedule 6", "International Council of Chemical Associations (ICCA) - High Production Volume List", "International Maritime Dangerous Goods Requirements (IMDG Code) - Substance Index", "OECD List of High Production Volume (HPV) Chemicals", "WHO Guidelines for Drinking-water Quality - Guideline values for chemicals that are of health significance in drinking-water"

C2-H2-F4 (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", "Sigma-Aldrich Transport Information"

No data for A-Gas R404A (CW: 8531-92)

Section 16 - OTHER INFORMATION

Denmark Advisory list for selfclassification of dangerous substances

Substance	CAS	Suggested codes
1, 1, 1- trifluoroethane	420- 46- 2	Xn; R22
1, 1, 1- trifluoroethane	27987- 06- 0	Xn; R22
tetrafluoroethane	811- 97- 2	T; R25

INGREDIENTS WITH MULTIPLE CAS NUMBERS

Ingredient Name	CAS
1,1,1-trifluoroethane	420-46-2, 27987-06-0

■ 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.

■ 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.

This document is copyright. Apart from any fair dealing for the purposes of private study, research, review or criticism, as permitted under the Copyright Act, no part may be reproduced by any process without written permission from CHEMWATCH. TEL (+61 3) 9572 4700.

Issue Date: 25-Jan-2013

Print Date: 14-Mar-2013