

Safety Data Sheet according to Regulation (EC) No. 453/2010

Date of issue: 18 January 2016

Revision date: 18 January 2016

Version: 3.3

SECTION 1: Identification of the substance/mixture and of the company/undertaking**1.1. Product identifier**

Chemical type :Preparation
Trade name : AIRCO SEAL PRO
Chemical characterization : Refrigerant leak sealant

1.2. Relevant identified uses of the substance or mixture and uses advised against**1.2.1. Relevant identified uses**

Main use category : Refrigerant leak sealant

1.2.2. Uses advised against

No additional information available

1.3. Details of the supplier of the safety data sheet

PRIMALEC (R J Doran & Co Ltd) Green Farm, Nettlestead Green
MAIDSTONE - ME18 5HD, England
T +44 (01)1622 816955 customers@primalec.co.uk

1.4. Emergency telephone number

Emergency number +44 (01)1622 816955 : Other - specify

SECTION 2: Hazards identification**2.1. GHS Classification of the substance or mixture**

Flammable liquids (Category 2)
Skin irritation (Category 2)
Skin Sensitization (Category 1)
Serious eye damage (Category 1)

Adverse physicochemical, human health and environmental effects: No additional information available

2.2. Label elements

Labelling according to Regulation (EC) No. 1272/2008 [CLP]: No special Labelling applicable

**Hazard statements:**

H225 Highly flammable liquid and vapour- Trimethoxymethylsilane
H315 Causes skin irritation - 2-methylpropan-1-ol
H317 May cause an allergic skin reaction- N-(3-(trimethoxysilyl)propyl)ethylenediamine
H318 Causes serious eye damage- N-(3-(trimethoxysilyl)propyl)ethylenediamine; 2-methylpropan-1-ol

Precautionary statements:

P210 Keep away from heat, hot surfaces, open flames and other ignition sources. No smoking.
P280 Wear protective gloves and eye protection.
P261 Avoid breathing mist, vapour or spray.
P273 Avoid release to the environment.
P302 + P352 IF ON SKIN: Wash with soap and plenty of water.
P305 + P351 + P338 + P310 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Immediately seek medical attention.
P501 Dispose of contents and container in accordance with local, state and national regulations.

2.3. Other hazards

None known

Safety Data Sheet according to Regulation (EC) No. 453/2010

Date of issue: 18 January 2016

Revision date: 18 January 2016

Version: 3.3

SECTION 3: Composition/information on ingredients

Ingredient Name	Cas No	EC No	Hazard class	Hazard Statement	Compositi on Wt%	Pictogram
Trimethoxyvinylsilane	2768-02-7	220-449-8	Flam liq.3	H226	25-30	GHS07 GHS02 Dgr
			Acute. Tox.4	H332		
2-methylpropan-1-ol	78-83-1	201-148-0	Flam liq.3	H226	15	GHS07 GHS02 GHS05 Dgr
			Skin Irrit.2	H315		
			Eye Dam 1	H318		
			STOT SE 3	H335		
			STOT SE 3	H336		
N-(3-(trimethoxysilyl)propyl)ethylene diamine	1760-24-3	217-164-6	Skin Sens 1	H317	10-20	GHS05 GHS07 Dgr
			Eye Dam 1	H318		
			Acute. Tox.4	H332		
Trimethoxymethylsilane	1185-55-3	214-685-0	Flam liq 2	H225	1-1.5	GHS02 Dgr
4-Hydroxy-4-methylpentan-2-one	123-42-2	204-626-7	Eye Irrit.2	H319	0.5-1.5	GHS07 Warning

Remaining components of these products are not classified as hazardous under the GHS, 29 CFR 1910.1200, WHMIS 2015, or (EC) No 1272/2008

Description : Refrigeration lubricant

SECTION 4: First aid measures**4.1 Description of First Aid Measures****First-aid measures general:**

Information to Physicians: Treat symptomatically

First-aid measures after inhalation:

Remove to fresh air. Give artificial respiration if not breathing. If breathing is difficult, oxygen may be given by qualified personnel. Obtain medical attention

First-aid measures after skin contact:

Immediately wash skin with soap and plenty of water. If irritation persists or if contact has been prolonged, obtain medical attention. Wash contaminated clothing before reuse.

First-aid measures after eye contact:

Remove contact lenses and immediately flush eyes with water and continue to wash for several minutes. Obtain medical attention.

Safety Data Sheet according to Regulation (EC) No. 453/2010

Date of issue: 18 January 2016

Revision date: 18 January 2016

Version: 3.3

First-aid measures after ingestion:

Do NOT induce vomiting. Wash out mouth with water provided person is conscious. Call a physician.

4.2. Most important symptoms and effects, both acute and delayed

This product is expected to react with moisture in the gastrointestinal tract to form methanol. Symptoms may be delayed and include headache, dizziness, nausea, lack of coordination, and confusion.

4.3. Indication of any immediate medical attention and special treatment needed

Get medical treatment immediately.

SECTION 5: Firefighting measures**5.1. Extinguishing media**

Suitable extinguishing media: DO NOT USE WATER STREAM.

Use carbon dioxide, dry chemical powder, alcohol-resistant foam or water spray.

5.2. Special hazards arising from the substance or mixture

Reactivity:

Vapours from this product may travel or be moved by air currents and ignited by pilot light or other flames and ignition sources at locations distant from product handling point. Burning can produce oxides of carbon, nitrogen and silicon.

5.3. Advice for firefighters

Firefighting instructions: Standard procedure for chemical fires. Cool tanks/drums with water spray/remove them into safety.

Protection during firefighting: Self-contained breathing apparatus and protective clothing.

Other information: Contaminated fire-fighting water must be collected separately.

SECTION 6: Accidental release measures**6.1. Personal precautions, protective equipment and emergency procedures**

General measures: Avoid contact with skin, eyes and clothing. Avoid breathing dust/fume/gas/mist/vapours/spray. When using do not eat, drink or smoke.

6.1.1. For non-emergency personnel

Protective equipment: Wear personal protection equipment. Refer to chapter 8.

Emergency procedures: Ensure adequate ventilation. Wear suitable respiratory equipment in case of insufficient ventilation. Keep unprotected persons from entering.

6.1.2. For emergency responders

Protective equipment: Wear personal protection equipment. Refer to chapter 8.

Emergency procedures: Ensure adequate ventilation. Wear suitable respiratory equipment in case of insufficient ventilation. Keep unprotected persons from entering.

6.2. Environmental precautions

Do not empty into drains or the aquatic environment.

6.3. Methods and material for containment and cleaning up

Methods for cleaning up : Clean up any spills as soon as possible, using an absorbent material to collect it. Wash away remainder with plenty of water.

6.4. Reference to other sections

See also section 8 & 13.

Safety Data Sheet according to Regulation (EC) No. 453/2010

Date of issue: 18 January 2016

Revision date: 18 January 2016

Version: 3.3

SECTION 7: Handling and storage**7.1. Precautions for safe handling**

Precautions for safe handling : Reduce/avoid exposure and/or contact. Keep away from sources of ignition - No smoking.

Hygiene measures : Handle in accordance with good industrial hygiene and safety practice. Do not drink, eat or smoke in the workplace.

7.2. Conditions for safe storage, including any incompatibilities

This product should be stored and handled in closed equipment to keep vapours in and moisture out. When this is done, general room ventilation is expected to be satisfactory. Keep away from sparks or open flame

Storage conditions : Keep away from heat. Protect from freezing. Keep out of the reach of children.

Prohibitions on mixed storage : Keep away from food, drink and animal feedingstuffs.

Storage area : Ensure adequate ventilation of the storage area. Keep container tightly closed. Store in a cool dry place.

7.3. Specific end use(s)

No additional information available

SECTION 8: Exposure controls/personal protection**8.1. Control parameters**

COMPONENT	CAS No.	VALUE	CONTROL PARAMETERS
Trimethoxyvinylsilane	2768-02-7	Z_INTL_OEL	5 ppm
2-methylpropan-1-ol	78-83-1	STEL	75 ppm 231 mg/m ³
		TWA	50 ppm 154 mg/m ³
4-Hydroxy-4-methylpentan-2-one	123-42-2	STEL	75 ppm 362 mg/m ³
		TWA	50 ppm 241 mg/m ³

8.2. Exposure controls

Appropriate engineering controls: Ventilate area. Emergency eye wash fountains and safety showers should be available in the immediate vicinity of any potential exposure.

Personal protective equipment: Gloves. Protective clothing. Safety glasses.



Hand protection:

Wear suitable gloves resistant to chemical penetration (to European standard EN 374 or equivalent), e.g. PVC or nitrile rubber. Since the product

Safety Data Sheet according to Regulation (EC) No. 453/2010

Date of issue: 18 January 2016

Revision date: 18 January 2016

Version: 3.3

	consists of several substances, it is not possible to estimate the durability of the glove material beforehand and it therefore needs to be tested before use
Eye protection:	Tightly sealed safety glasses.
Skin and body protection	Wear suitable protective clothing. Wash contaminated clothing before re-use.
Respiratory protection:	With correct and proper use, and under normal conditions, breathing protection is not required.
Environmental exposure controls:	Avoid release to the environment.
Other information:	Keep away from food, drink and animal feedingstuffs.

SECTION 9: Physical and chemical properties**9.1. Information on basic physical and chemical properties**

Physical state	: Liquid
Appearance	: Clear pale yellow liquid.
Colour	: Colourless / pale yellow.
Odour	: Ethereal.
Odour threshold	: No data available
pH	: Not applicable
Relative evaporation rate (butylacetate=1)	: No data available
Melting point	: No data available
Pour point	: No data available
Boiling point	: Decomposes before boiling
Flash point	: 20 °C (ASTM D6450)
Self ignition temperature	: No data available
Decomposition temperature	: No data available
Flammability (solid, gas)	: No data available
Vapour pressure	: No data available
Relative vapour density at 20 °C	: No data available
Relative density	: 0.95 g/cm ³ @ 25°C
Solubility	: No data available
Log Pow	: No data available
Log Kow	: No data available
Viscosity, kinematic	: No data available
Viscosity,@40°C	: No data available

9.2. Other information

No additional information available

SECTION 10: Stability and reactivity**10.1. Reactivity**

Reacts with water.

10.2. Chemical stability

The product is stable under recommended handling- and storage conditions.

10.3. Possibility of hazardous reactions

Unlikely

Safety Data Sheet according to Regulation (EC) No. 453/2010

Date of issue: 18 January 2016

Revision date: 18 January 2016

Version: 3.3

10.4. Conditions to avoid

Moisture, heat, flames, sparks.

10.5. Incompatible materials

Acids and strong oxidising agents.

10.6. Hazardous decomposition products

Reacts with water or moisture to form ethanol.

SECTION 11: Toxicological information**11.1. Information on toxicological effects**

Acute toxicity : Not classified

Airco-Lube PAG46Z - AC2173

LD50 Oral Rat > 5000 mg/kg

Skin corrosion/irritation : Not classified

Serious eye damage/irritation : Not classified

Respiratory or skin sensitisation : Not classified

Germ cell mutagenicity : Not classified

Carcinogenicity : Not classified

Reproductive toxicity : Not classified

Specific target organ toxicity (single exposure) : Not classified

Specific target organ toxicity (repeated exposure) : Not classified

Aspiration hazard : Not classified

The toxicological properties of this product have not been investigated. Information for hazardous components is provided below.

Acute toxicity

Oral LD50 rat:	Trimethoxyvinylsilane:	7340-7460 mg/kg
	2-methylpropan-1-ol:	2460 mg/kg
	N-(3-(trimethoxysilyl)propyl)ethylenediamine:	2995 mg/kg
	Trimethoxy(methyl)silane:	11,685 mg/kg
	4-hydroxy-4-methylpentan-2-one:	2520 mg/kg

Inhalation LC50 rat:	Trimethoxyvinylsilane:	16.79 mg/l
	4 h 2-methylpropan-1-ol:	8000 ppm
	N-(3-(trimethoxysilyl)propyl)ethylenediamine:	1490-2440 mg/l
	Trimethoxy(methyl)silane:	>42.1 mg/l
	4-hydroxy-4-methylpentan-2-one:	>10 mg/l

Skin LD50 rabbit:	Trimethoxyvinylsilane:	3460-4000 mg/kg
	2-methylpropan-1-ol:	3400 mg/kg
	N-(3-(trimethoxysilyl)propyl)ethylenediamine:	>2000 mg/kg
	4-hydroxy-4-methylpentan-2-one:	13,500 mg/kg

Skin LD50 rat:	Trimethoxy(methyl)silane:	>9,500 mg/kg
----------------	---------------------------	--------------

Skin corrosion/irritation

Skin irritation rabbit:	Trimethoxyvinylsilane:	no skin irritation
	2-methylpropan-1-ol:	mild skin irritation

Safety Data Sheet according to Regulation (EC) No. 453/2010

Date of issue: 18 January 2016

Revision date: 18 January 2016

Version: 3.3

	N-(3-(trimethoxysilyl)propyl)ethylenediamine: no skin irritation
	Trimethoxy(methyl)silane: no skin irritation
Serious eye damage/irritation	
Rabbit:	Trimethoxyvinylsilane: no eye irritation
	2-methylpropan-1-ol: moderate eye irritation
	N-(3-(trimethoxysilyl)propyl)ethylenediamine: strongly irritating
	Trimethoxy(methyl)silane: no eye irritation
	4-hydroxy-4-methylpentan-2-one: severe eye irritation – 24 h
Respiratory or skin sensitization	
Guinea pig:	Trimethoxyvinylsilane - did not cause sensitization
	2-methylpropan-1-ol: dermatitis
	N-(3-(trimethoxysilyl)propyl)ethylenediamine - may cause sensitization by skin contact
	Trimethoxy(methyl)silane – did not cause sensitization
Repeated Dose Toxicity	
No Observed Adverse Effect Level (NOAEL)	
Oral rat:	Trimethoxyvinylsilane: 62.5 mg/kg (lowest observable effect: 62.5 mg/kg)
	N-(3-(trimethoxysilyl)propyl)ethylenediamine: >500 mg/kg
	Trimethoxy(methyl)silane: 50 mg/kg
Vapour inhalation rat:	Trimethoxyvinylsilane: 10 mg/l (lowest observable effect: 100 mg/kg)
Germ cell mutagenicity	
	Trimethoxyvinylsilane: negative (bacteria)
	N-(3-(trimethoxysilyl)propyl)ethylenediamine: negative (Ames test)
	Trimethoxy(methyl)silane: negative (bacteria)
Carcinogenicity	
None of the components of this product is identified as a carcinogen by IARC, ACGIH, NTP or OSHA.	
Reproductive toxicity	
Trimethoxyvinylsilane - oral - No Observed Adverse Effect Level (NOAEL)	
Rat males - NOAEL P1 1000 mg/kg - NOAEL F1 1000 mg/kg	
Rat females NOAEL P1 250 mg/kg - NOAEL F1 1000 mg/kg	
N-(3-(trimethoxysilyl)propyl)ethylenediamine – No Observed Adverse Effect Level (NOAEL) 500 mg/kg/day (developmental and maternal toxicity)	
Specific target organ toxicity – single exposure	
2-methylpropan-1-ol: May cause respiratory irritation. May cause drowsiness.	
Aspiration hazard	
No data available	
Potential Health Effects:	
Swallowing:	May be harmful if swallowed.
Inhalation:	May be irritating to mucous membranes and upper respiratory tract.
Skin:	Causes skin irritation.
Eye Contact:	Causes eye damage.

SECTION 12: Ecological information

Safety Data Sheet according to Regulation (EC) No. 453/2010

Date of issue: 18 January 2016

Revision date: 18 January 2016

Version: 3.3

12.2 Toxicity

No data are available for the ecological effects of this product; information on some components is provided below. The silane components of the product degrade through hydrolysis into alcohols and silanol and/or siloxanol compounds. The product is not expected to be readily biodegradable

Toxicity to fish

N-(3-(trimethoxysilyl)propyl)ethylenediamine

LC50

Species: Lepomis macrochirus

Result: >100 mg/l

Trimethoxyvinylsilane

LC50

Species: Brachydanio rerio

Result: >100 mg/l

2-methylpropan-1-ol

LC50

Species: Pimephales promelas

Result: 1.22 mg/l

4-hydroxy-4-methylpentan-2-one

LC50

Species: Lepomis macrochirus

Result: 420 mg/l

Toxicity to other organisms

N-(3-(trimethoxysilyl)propyl)ethylenediamine

EC50

Species: Daphnia magna

Result: 87.4 mg/l

Exposure time: 48 h

Trimethoxyvinylsilane

EC50

Species: Daphnia magna

Result: 87.4 mg/l

Exposure time: 48 h

4-hydroxy-4-methylpentan-2-one

LC50

Species: Daphnia magna

Result: 9000 mg/l

Exposure time: 24 h

Toxicity to algae

N-(3-(trimethoxysilyl)propyl)ethylenediamine

EC50

Species: Pseudokirchneriella subcapitata

Result: 8.8 mg/l

Exposure time: 96 h

NOEC

Species: Pseudokirchneriella subcapitata

Result: 3.1 mg/l

Trimethoxyvinylsilane

EC50

Safety Data Sheet according to Regulation (EC) No. 453/2010

Date of issue: 18 January 2016

Revision date: 18 January 2016

Version: 3.3

Species: Desmodemus subspicatus

Result: >100 mg/l

Exposure time: 72 h

12.2 Persistence and degradabilityTrimethoxyvinylsilane

This component is not readily biodegradable (28 d) when tested according to OECD - Guideline 150°C

12.3 Bioaccumulative potentialTrimethoxyvinylsilane

This component is not bioaccumulating

12.4 Mobility in soil

No data available

12.5 Results of PBT assessment

No data available

12.6. Other adverse effects

No data available

SECTION 13: Disposal considerations**13.1. Waste treatment methods**

Regional legislation (waste) : Observe regulations when disposing. EU (E.W.C) is 13-02-06

Sewage disposal recommendations: Substance must not be discharged into the sewer.

Waste disposal recommendations : Consider recycling after cleansing. Remove to an authorized waste incinerator.

Product

Contact a licensed professional waste disposal service to dispose of this material. Burn in a chemical incinerator equipped with an afterburner and scrubber but exert extra care in igniting as this material is flammable. Observe all federal, state, and local environmental regulations.

Contaminated packaging

Dispose of as product

SECTION 14: Transport information

In accordance with ADR / RID / ADNR / IMDG / ICAO / IATA 14.1. UN number

Shipping Name: FLAMMABLE LIQUID, N.O.S. (Trimethoxyvinylsilane)

UN #: 1993

Transport hazard Class: 3

Packing Group: II

SECTION 15: Regulatory information**15.1. Safety, health and environmental regulations/legislation specific for the substance or mixture****Regulation (EC) No. 453/2010**

Statutory Instruments: Chemicals (Hazard Information and Packaging) regulations.

Approved code of practice: Classification and labelling of Substances and Preparations dangerous for supply. Safety data sheets for substances and preparations.

Guidance notes: Workplace Exposure limits EH40. CHIP for everyone HSG(108)

15.1.2. National regulations

No additional data available

Safety Data Sheet according to Regulation (EC) No. 453/2010

Date of issue: 18 January 2016

Revision date: 18 January 2016

Version: 3.3

15.2. Chemical safety assessment

No additional information available

SECTION 16: Other information

Health	Fire	Physical
2	3	1

This version 3.2 (9 January 2015) has been updated to conform to the requirements of the GHS, OSHA Hazard Communications Standard 2012, WHMIS 2015 and (EU) No 453/2010.

Indication of changes: Section 2 has been revised to reflect potential hazards to the aquatic environment. No other changes have been made to the classification of the mixture, description of the product or to instructions for its safe use, transportation, handling and storage.

Data sources : This information is based on the present data (producers, chemical safety cards, <http://echa.europa.eu/>, <http://ecb.jrc.ec.europa.eu/esis/>, ...).

This information is based on our current knowledge and is intended to describe the product for the purposes of health, safety and environmental requirements only. It should not therefore be construed as guaranteeing any specific property of the product.

The above information describes exclusively the safety requirements of the product and is based on our present-day knowledge. The information is intended to give you advice about the safe handling of the product named in this safety data sheet, for storage, processing, transport and disposal. The information cannot be transferred to other products. In the case of mixing the product with other products or in the case of processing, the information on this safety data sheet is not necessarily valid for the new made-up material.