Material Safety Data Sheet
DEOXAL AF

1. Identification of the material and supplier

PRODUCT NAME:	DEOXAL AF
OTHER NAMES	
RECOMMENDED USE	Cleaning oxidised aluminium truck bodies and tanks
COMPANY:	Cleveland Cleaning Supplies Pty Ltd ABN: 61 001 175 748
ADDRESS:	23 Forrester Street Kingsgrove NSW 2208 Australia
BUSINESS TELEPHONE:	(02) 9503 0100 1300 760 765 (Australia wide)
BUSINESS HOURS ONLY:	7AM – 5PM (E.S.T.)
FAX:	(02) 9503 0199
EMAIL:	sales@cleveland.com.au
EMERGENCY TELEPHONE:	000
POISONS INFORMATION CENTRE PHONE	13 11 26
FOR EMERGENCY RESPONSE:	000

2. Hazards identification

Hazardous according to criteria of NOHSC/ASCC
Dangerous According to the Australian Code for the Transport of Dangerous Goods
VERY TOXIC; CORROSIVE

RISK PHRASES	R26/27/28	Very toxic by inhalation, in contact with skin and if swallowed.
	R35	Causes severe burns.
SAFETY PHRASES	S7/9	Keep container tightly closed and in a well ventilated place.
	S26	In case of contact with eyes, rinse immediately with plenty of water and seek medical advice.
	S36/37/39	Wear suitable protective clothing, gloves and eye/face protection.
	S45	In case of accident or if you feel unwell, seek medical advice immediately (show the label whenever possible).
	S27	Take off immediately all contaminated clothing.
	S28	After contact with skin, wash immediately with plenty of soap-suds.

3. Composition/ information on ingredients

NAME	CAS	PROPORTION
HYDROFLUORIC ACID	7664-39-3	< 10 %
SULPHURIC ACID	7664-93-9	< 10 %

The ingredients below are **not** considered hazardous or dangerous goods according to the criteria of NOHSC / ASCC and ADG code (respectively) at the levels used in this product.

WATER	7732-18-5	>60%

4. First Aid measures

SWALLOWED	Never give anything by mouth if victim is rapidly losing consciousness, or is unconscious or convulsing. If swallowed DO NOT induce vomiting. Give 500mL of water containing four tablets (500mg of calcium) or two tablets (1000mg of calcium) of effervescent calcium gluconate every two hours until admitted to hospital. If vomiting occurs naturally, have victim lean forward to reduce risk of aspiration. Obtain medical attention immediately. For advice contact a Poisons information Centre, Phone Australia 13 1126 or a doctor.
EYE	Immediately flush the contaminated eye(s) with lukewarm, gently flowing water for 15 minutes, by the clock, holding the eyelid(s) open. Take care not to rinse contaminated water into non-affected eye. Continue irrigation with normal saline or water until the severe pain of burn is relieved. Obtain medical attention immediately. NOTE: Do not use any of the skin treatment preparation for burns of the eye. Seek immediate medical attention.

SKIN	First aid personnel should avoid contact with this chemical. Wear impervious gloves when assisting patient. Immediately flush contaminated skin area thoroughly with gently running water (lukewarm if possible) for a short period to remove the acid. While washing with water remove contaminated clothing, jewellery, footwear and leather goods e.g. watchbands, belts. Wearing protective gloves, the first aid person should gently massage the 2.5% calcium gluconate gel onto the affected and leave on the skin until medical attention is received. If gel not readily available, continue washing with water. For burns on the skin affecting more than 65 cm2 (approximately the area of the palm of the hand) if the patient is conscious and not convulsing, give 500mL of water containing four tablets (500mg of calcium) or two tablets (1000mg of calcium) of effervescent calcium gluconate in water by mouth every two hours until admitted to hospital. Obtain medical attention immediately. For advice contact a Poisons information Centre, Phone Australia 13 11 26 or a doctor.
INHALED	If symptoms are experienced, remove source of contamination or move victim to fresh air. Rescuer should wear appropriate personal protection to avoid skin contamination and breathing hydrogen fluoride fumes. Move patient from area, resuscitate if necessary. Do not carry out expired air resuscitation if rescuer may become contaminated. Seek medical attention immediately as potentially fatal systemic effects are likely. Transfer promptly to a hospital for possible intensive care
FIRST AID FACILITIES	Ensure eyewash facilities are available in workplace.
ADVICE TO DOCTOR	The damage caused by exposure to this product is far more extensive than that caused by other acids. First aid and medical treatment appropriate to other acids is not beneficial with HF burns. HF penetrates rapidly and deeply below fat layers, binding and depleting tissue calcium. Failure to commence the correct medical treatment promptly may be fatal. Intensive care unit facilities are likely to be needed. SEE SECTION 5.1 for procedures to be considered for treatment of burns

ADDITIONAL INFORMATION
AGGRAVATED MEDICAL CONDITIONS CAUSED BY EXPOSURE

Oral and inhalation exposure can cause fluorosis in humans, a syndrome characterised by weight loss, brittle bones, anaemia and general ill health. Dilute solutions may be absorbed through the skin in the absence of skin damage. FLUORISIS : fluoride tends to accumulate in the bones and excessive amounts will produce weakening and degeneration of the bone structure (osteosclerosis). There may also be heart, nerve, and intestinal problems. Fluorosis may be slowly and partially reversible. Very serious irreversible effects may cause death

5. Fire fighting measures

SUITABLE EXTINGUISHING MEDIA

NON FLAMMABLE
Large fire
Use water spray and fog.
If safe to do so, move undamaged containers from fire area – Do not approach hot containers. Cool containers with water before handling
If impossible to extinguish fire, protect surroundings, withdraw from area and allow fire to burn.
Not flammable. The material itself does not burn but may decompose upon heating to produce corrosive and/or toxic fumes. Fire- exposed containers may rupture/explode.

Hazards from Combustion Products

Material is stable under normal conditions of temperature and pressure. Avoid contact with silica and silicates (e.g glass, fibreglass, ceramics, asbestos, cement), leather and natural rubber. It is extremely reactive in contact with most organic substances and metal carbonates, oxides and hydroxides. Do not store in glass containers. Concentrated HF may react violently on mixing with water as the reaction releases heat. Dilution raises temperature of mixtures and therefore raises the vapour pressure. Fumes of high concentration solutions of HF can react with moisture in the atmosphere to form a white smoggy cloud. In closed containers, hydrogen formation can cause dangerously high pressure. Product is not combustible. HF itself does not burn but may decompose upon heating to produce corrosive and/or toxic fumes. Contact with many metals can lead to the formation of

hydrogen gas, which forms explosive mixtures in air at concentrations between 4% and 75%. Contact with glass, concrete and other bearing materials yield silicon tetra fluoride gas. Pressure build up from this process has been known to blow up glass containers.
Contact with carbonates, sulphides and cyanides product toxic gases such as carbon dioxide, hydrogen sulphide and hydrogen cyanide. Contact with alkalis and some oxides can cause strong violent exothermic reactions.

SPECIAL PROTECTIVE PRECAUTIONS AND EQUIPMENT FOR FIRE FIGHTERS

If large amounts are involved wear SCBA and chemical splash suit.

HAZCHEM CODE 2X

6. Accidental release measures

Because of the hazardous nature of HF, emergency and spill procedures must be effective in avoiding both human and environmental exposure. Make plans in advance to handle possible emergencies Restrict access to area until completion of clean up. Increase ventilation. Evacuate all unnecessary personnel. Use self-contained breathing apparatus (S.C.B.A) and full protective clothing to minimise exposure. Prevent material from entering sewers. Stop or reduce leak if safe to do so. Contain spill with earth, sand or inert absorbent material. Small spills of solution: soak up with absorbent material. Put material in suitable, covered, labelled containers. Flush area with water preventing runoff entering drains. Large spills: contact fire and emergency services for advice. Large quantities of spill may form a mobile cloud when released into the atmosphere. All facilities handling HF should have calcium gluconate antidote trained personnel available and arrangements in advance with local hospital. The Emergency Procedure Guideline (EPG) Australian Standard 1678 is recommended for management of emergencies when transporting HF. The EPG should be carried at all times when HF or HF products are being transported.
Disposal: review federal, state and local government requirements prior to disposal. Do not allow chemical to enter drains, waterways and confined areas. Stop leak if safe to do so without risk. Contain spills with sand, earth or other recommended absorbent material. Dilute with water and where possible, neutralise with lime.

7. Handling and storage

PRECAUTIONS FOR SAFE HANDLING

First aid procedures, equipment, medication and training for the treatment of burns with Hydrofluoric acid should be in place BEFORE the use commences. Company physician, occupational health nurse and first aid personnel should be aware of the nearest hospitals which are familiar with the treatment of hydrofluoric acid burns. Ensure safety shower and eyewash stations are immediately accessible in the workplace. Medication in workplace should include Calcium gluconate tablets each containg 500mg or 1000mg of calcium, Calcium gluconate gel 2.5% by wt. Calcium gluconate products should be checked regularly to ensure that they are within shelf-life and replaced if needed. Ensure sterile water and/or Isotonic saline is available as well as themal blankets. Repeated or prolonged contact with this material should be avoided in order to lessen the possibility of skin disorders. It is essential that all who come into contact with this material, maintain high standards of personal hygiene i.e. washing hands prior to eating, drinking, smoking or going to the toilet. Build-up of mist in the working atmosphere must be prevented. Ensure ventilation is adequate. Prevent concentration in hollows or sumps. DO NOT enter confined spaces where vapour may have collected. Keep containers closed when not in use.

STORAGE REQUIREMENTS

Store in a cool, dry, well-ventilated area, out of direct sunlight. Keep containers closed when not in use and securely sealed and protected against physical damage. Inspect regularly for deficiencies such as damage or leaks. Avoid sparks, flames and other ignition sources. Store away from incompatible materials.

STORAGE INCOMPATIBILITY Avoid contact with incompatibles such as silica, silicates (e.g glass, fibreglass, ceramics, asbestos, cement), leather and natural rubber. It is extremely reactive in contact with most organic substances and metal carbonates, oxides and hydroxides. Hydrogen may make metals brittle.

8. Exposure controls / Personal protection

NATIONAL EXPOSURE STANDARDS

No exposure standards have been established for this material. Exposure standards recommended by Australian Safety and Compensation Council for some ingredients are as follows:

SUBSTANCE	TWA		STEL	
	ppm	mg/m³	ppm	mg/m³
Hydrogen fluoride (as F)	3	2.6	-	-
Sulphuric acid		1		3.0

ENGINEERING CONTROLS Provide sufficient ventilation to keep airborne levels below the exposure limit. Where vapours or mists are generated and exposure standards are exceeded, the use of respiratory protection, or a local exhaust ventilation system is recommended.

PERSONAL PROTECTION

RESPIRATOR TYPE Avoid breathing of vapours, mists or spray. Where ventilation is inadequate and vapours or mists are generated the use of a respirator with filter complying with AS/NZS 1716 is recommended. Filter capacity and respirator type depends on exposure levels.

EYE PROTECTION Safety glasses or chemical goggles. Failure to do so may result in eye damage if an accident occurs. Suitable chemical resistant safety goggles. Refer to Australian Standard AS/ANZ 1337 - Eye Protectors for Industrial Applications.

GLOVE TYPE Suitable impervious PVC or rubber gloves.

CLOTHING Suitable impervious protective clothing. Safety boots with non-slip soles or rubber boots.

Always wash hands before smoking, eating, drinking, or using the toilet. Wash contaminated clothing and other protective equipment before storing or re-using.

9. Physical and chemical properties

APPEARANCE	Clear colourless to pale pink liquid	
ODOUR	sharp irritating odour	
PH	3.4	
VAPOUR PRESSURE	Not Determined	
VAPOUR DENSITY	Not Determined	
BOILING POINT	Not Determined	
BOILINGRANGE	Not Determined	
MELTING POINT	-37°C	
SOLUBILITY IN WATER	Miscible	
SPECIFIC GRAVITY	1.156	water = 1.000
FLASH POINT	Non Flammable	
FLAMMABILITY LIMITS	Not applicable	

10. Stability and reactivity

Chemical Stability Stable under normal conditions of storage and use

Incompatible Materials Avoid contact with incompatibles such as silica, silicates (e.g glass, fibreglass, ceramics, asbestos, cement), leather and natural rubber. It is extremely reactive in contact with most organic substances and metal carbonates, oxides and hydroxides. Hydrogen may make metals brittle.

Hazardous Decomposition Products: Not Determined

Hazardous Polymerization Not Determined

11. Toxicological information

Oral LD50 = not available Dermal LD50 = not available Inhalation LC50 = 4970 ppm (Rat, 5 min) ; 18200 pm (Rat, 5 min) ; 1310 ppm (Rat 1 hour) ; 1108 ppm (Rat, 1 hour) ; 6247 ppm (Mice, 5 min) ; 4320 ppm (Guinea pig, 15 min) ; 1774 ppm (Monkey, 1 hour) Carcinogenicity : No specific data is available. There is no evidence of an association between human cancer and exposure to inorganic fluorides. Teratogenicity and Embryotoxicity : There is inconclusive data from animal studies suggesting possible reproductive effects. There are no report of effects on humans. Toxicological Synergistic Materials : Insufficient information Mutagenicity : Insufficient data There is a potential for fluoride to be stored in the bone, but it may be eliminated over a number of years.

Health effects from acute exposure

INHALED Very toxic by inhalation. Exposure to low concentrations can irritate nose, throat and respiratory tract. Onset of symptoms may be delayed for several hours. Exposure to high concentrations can cause severe nose and throat burns, lung inflammation and pulmonary oedema that can lead to death. Exposure to concentrations of Hydrofluoric acid at and above 2.5 mg/m3 for one hour or longer increases upper airway symptoms (itching, soreness). Inhalation of high concentrations of hydrogen

	fluoride vapours is very irritating and its absorption into the blood stream can be fatal in the same way as skin absorption.
SWALLOWED	Very toxic if swallowed. Can cause severe burning of mouth, throat and stomach. Can be fatal if swallowed. Possible fatal hypocalcemia (low blood calcium level) can occur unless medical treatment is promptly initiated..
SKIN	Very toxic if in contact with skin. Product will penetrate skin and attack tissues and bone. Calcium depletion and electrolyte disorders may be fatal. A skin burn involving more than 1% of body area (less than the size of a hand) with 50% or more concentration of hydrofluoric acid or more than 5% body area with any lesser concentrations may be associated with systemic effects and may cause death. Dermal contact with Hydrofluoric acid causes second and third degree skin burns. Burns from dilute solutions are reported to cause delayed pain if not recognised and treated. Severe pain is experienced shortly after exposure to concentrated Hydrofluoric acid and burns tend to heal very slowly.
EYE	Hydrogen fluoride vapour is reported to cause irritation at concentrations as low as 1 mg/3. Solutions as dilute as 2% or lower may cause burns. A splash of of hydrofluoric acid into the eye can rapidly and permanently damage sight and urgent eye irrigation is required followed by immediate medical advice.

HEALTH EFFECTS FROM CHRONIC EXPOSURE
No data

12. Ecological information

No other Data

13. Disposal considerations

Disposal: Review federal, state and local government requirements prior to disposal.

14. Transport information

Not classified as Dangerous Good according to Australian Code for the Transport of Dangerous Goods by Road and Rail (6th Edition).

UN CLASS	2922
PROPER SHIPPING NAME	Corrosive liquids Toxic NOS
DG CLASS	8
SUBSIDARY RISK	6.1
PACKAGING GROUP	II
HAZCHEM CODE	2X
RECOMMENDED USE	Cleaning oxidised aluminium truck bodies and tanks

15 Regulatory information

POISONS SCHEDULE 7

16. Other information

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END OF REPORT