MATERIAL SAFETY DATA SHEET

1. IDENTIFICATION OF THE MATERIAL AND SUPPLIER

Product Name: Acid Klene

Recommended Use: Heavy duty acid suitable for cleaning rust, alloy trays, wheels and parts.

Supplier: Auto Klene Solutions
ABN: 51 417 164 855
Street Address: 1/83 Merrindale Drive
Croydon, Victoria
Australia
Phone Number: +61 3 8761 1900
Facsimile: +61 3 8761 1955

24 Hour Emergency: Poisons Information Centre 131 126

2. HAZARDS IDENTIFICATION

This material is Hazardous according to criteria of NOHSC; HAZARDOUS SUBSTANCE.

Classified as Dangerous Goods by the criteria of the Australian Dangerous Goods Code (ADG Code) for Transport by Road and Rail; DANGEROUS GOODS.

UN Number: 2922
DG Class: 8
Subsidiary Risk: 6.1
Packaging Group: II
Hazchem Code: 2(X)E

Risk Phrases: **R23/24/25 –**Toxic by inhalation, in contact with skin, and if swallowed
R34 – Causes burns

Safety Phrases: **S1/2** - Keep locked up and out of the reach of children -
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 - Wear suitable protective clothing and gloves.
S45 - In case of accident or if you feel unwell, seek medical advice immediately (show the label whenever possible).

Poisons Schedule: S7.

3. COMPOSITION/INFORMATION ON INGREDIENTS

Components/CAS Number	Proportion	Risk Phrases
Hydrofluoric Acid / 7664-39-3	<4%	
Sulphuric Acid / 7664-93-9	<4%	
Dye	<.001%	
Water / 7732-18-5	>92%	

4. FIRST AID MEASURES

First Aiders must wear personal protective clothing such as eye protection, nitrile or rubber gloves, to protect against possible HF exposure when treating patients. For advice, contact a Poisons Information Centre (Phone eg. Australia 131 126; New Zealand 0 800 764766)

Inhalation: If fumes or combustion products are inhaled: Remove to fresh air. Lay patient down. Keep warm and rested. If breathing is shallow or has stopped, ensure clear airway and apply resuscitation. If victim is conscious, give six calcium gluconate or calcium carbonate tablets in water by mouth. Transport to hospital, or doctor, urgently.

Skin Contact: If there is evidence of skin irritation or skin burns: Avoid further contact, strip off contaminated clothing, including footwear. Wash affected parts continuously with copious amounts of running water for at least one minute. Transport to hospital, or doctor, urgently. Avoiding contamination of the hands, massage calcium gluconate gel into affected areas, pay particular attention to creases in skin. Continue gel application for at least 15 minutes after burning sensation ceases. If pain recurs, repeat application of calcium gluconate gel or apply every 20 minutes. If no gel is available, continue washing for at least 15 minutes, using soap if available. If patient is conscious, give six calcium gluconate or calcium carbonate tablets in water by mouth.

Eye Contact: If this product comes in contact with the eyes, DO NOT DELAY: Immediately irrigate continuously by holding the eyes open and washing with fresh running water. Ensure complete irrigation of the eye by keeping eyelids apart and away from eye and moving the eyelids by lifting the upper and lower lids. Irrigate for at least 15 minutes. Transport to hospital or eye clinic or eye specialist, ophthalmologist without delay.

Ingestion: If poisoning occurs, contact a doctor or Poisons Information Centre. If swallowed, do NOT induce vomiting. Transport to hospital immediately.

Medical attention And special Treatment: Consult Poisons Information Centre. (Australia 131 126; New Zealand 0 800 764766)

Advice to Doctor

Following acute or short term repeated exposure to hydrofluoric acid:

Subcutaneous injections of Calcium Gluconate may be necessary around the burnt area. Continue application of Calcium Gluconate Gel or subcutaneous Calcium Gluconate should then continue for 3-4 days at a frequency of 4-6 times per day. If a “burning” sensation recurs, apply more frequently.

Systemic effects of extensive hydrofluoric acid burns include renal damage, hypocalcaemia and consequent cardiac arrhythmias. Monitor haematological, respiratory, renal, cardiac and electrolyte status at least daily. Tests should include FBE, blood gases, chest X-ray, creatinine and electrolytes, urine output, Ca ions, Mg ions and phosphate ions. Continuous ECG monitoring may be required.

Where serum calcium is low, or clinical, or ECG signs of hypocalcaemia develop, infusions of calcium gluconate, or if less serious, oral Sandocal, should be given. Hydrocortisone 500 mg in a four to six hourly infusion may help.

Antibiotics should not be given as a routine, but only when indicated.

Eye contact pain may be excruciating and 2-3 drops of 0.05% pentocaine hydrochloride may be instilled, followed by further irrigation.

Biological Exposure Index – BEI

These represent the determinants observed in specimens collected from a healthy worker exposed at the Exposure Standard (ES or TLV):

Determinant	Index	Sampling Time	Comments
1. Fluorides in urine	3mg/gm Creatinine	Prior to shift	B, NS
	10mg/gm Creatinine	End of shift	B, NS

B: Background levels occur in specimens collected from subjects NOT exposed.
NS: Non-specific determinant; also observed after exposure to other materials.

5. FIRE FIGHTING MEASURES

Hazards from combustion:

Not combustible. Not consider to be a significant fire risk. Acids may react with metals to produce hydrogen, a highly flammable and explosive gas. Heating may cause expansion or decomposition leading to violet rupture of containers. Decomposes on heating an may produce toxic fumes of carbon monoxide (CO). May emit acrid smoke. May emit poisonous fumes. May emit corrosive fumes. Other decomposition products include sulfur oxides (SOx) and fluorides.

Precautions for fire fighters and Special protective equipment:

Alert Fire Brigade 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 courses. Use fire fighting procedures suitable for surrounding area. 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. Equipment should be thoroughly decontaminated after use.

Hazchem Code:

2(X)E

6. ACCIDENTAL RELEASE MEASURES

Minor Spills:

Clean up all spills immediately. Avoid breathing vapours 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 labelled container for waste disposal.

Major Spills:

Clear area of personnel and move upwind. Alert Fire Brigade and tell them location and nature of hazard. Wear full body protective clothing with breathing

apparatus. Prevent, by any means available, spillage from entering drains or watercourse. Stop leak if safe to do so. Contain spill with sand, earth or vermiculite. Collect recoverable product into labelled containers for recycling. Neutralise/decontaminate residue. Collect solid residues and seal in labelled drums for disposal. Wash area and prevent runoff into drains. After clean up operations, decontaminate and launder all protective clothing and equipment before storing and re-using. If contamination of drains or waterways occurs, advise emergency services.

Disposal: Recycle wherever possible or consult manufacturer for recycling options. Consult State Land Waste Authority for disposal. Treat and neutralise at an effluent treatment plant. Use soda ash or slaked lime to neutralise. Recycle containers wherever possible; otherwise dispose of in an authorised landfill.

7. HANDLING AND STORAGE

Suitable Container: Plastic container. Plastic carboy. Check that containers are clearly labelled. Packaging as recommended by manufacturer.

Storage Incompatibility: Segregate from alkalies, oxidising agents and chemicals readily decomposed by acids, i.e. cyanides, sulfides, carbonates.

Storage Requirements: Store in original containers. Keep containers securely sealed. 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.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Exposure Standards

Acid Klene: None assigned for mixture. Refer to individual constituents.

Hydrofluoric Acid: None assigned for mixture. Refer to individual constituents as hydrogen fluoride.
NOHSC Exposure Standards:
TWV: 3ppm, 2.6 mg/m^3 (as F)
ES Peak: 3ppm, 2.5 mg/m^3

Sulphuric Acid: TWA: 1 mg/m^3; STEL: 3 mg/kg A2
Warning: This substance has been classified by the ACGIH as A2 suspected human carcinogen.
ES TWA: 1mg/m^3; STEL: 3mg/m^3

PERSONAL PROTECTION

EYE

Chemical goggles. Full-face shield. Contact lenses pose a special hazard; soft lenses may absorb irritants and all lenses concentrate them.
A written policy document, 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].

HANDS/FEET

Neoprene gloves or Nitrile gloves. Rubber safety gumboots.

OTHER

Long sleeve Acid-resistant overalls, overalls, Apron, PVC protective suit may be required if exposure severe. Eyewash unit. Ensure there is ready access to a safety shower. Always ensure that a supply of calcium gluconate gel or calcium carbonate tablets is on hand. The local concentration of material, quantity and conditions of use determine the type of personal protective equipment required. For further information, consult site-specific CHEMWATCH data (if available), or our Occupational Health and Safety Advisor

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 SAA approved respirator. Correct fit is essential to obtain adequate protection. Provide adequate ventilation in warehouse or closed storage areas.

9. PHYSICAL AND CHEMICAL PROPERTIES

Physical State:	Liquid
Colour:	Clear Green
Odour:	N App
Solubility:	Mixes with water
Specific Gravity:	1.0
Relative Vapour Density (air=1):	N Av
Vapour Pressure (20°C):	N Av
Flash Point (°C):	N App
Flammability Limits (%):	N App
Autoignition Temperature (°C):	N Av
% Volatile by Weight:	N Av
Solubility in water (g/L):	Mixes with water
Melting Point/Range (°C):	0 approx
Boiling Point/Range (°C):	100
Decomposition Point (°C):	N Av
pH:	< 1.00
Viscosity:	N Av
Evaporation Rate:	N Av

10. STABILITY AND REACTIVITY

Chemical Stability: N Av

Conditions to avoid: Avoid contact with foodstuffs.

Incompatible materials: N Av

Hazardous decomposition Products: N Av

Hazardous reactions: This substance is a strong acid, it reacts violently with bases and is corrosive to many metals, in particular zinc and magnesium.

11. TOXICOLOGICAL INFORMATION

Ingestion: The liquid is corrosive and toxic and is capable of causing burns and may be fatal if swallowed.

Eye contact: The liquid is corrosive and extremely irritating to the eyes and is capable of causing severe damage with loss of sight.

Skin contact: The liquid is corrosive and highly irritating to the skin, it is absorbed by the skin and is capable of causing burns. Symptoms of exposure may be delayed. The skin is readily penetrated by the fluoride ion causing liquefaction necrosis of the soft tissues and decalcification and corrosion of bone. Healing is delayed and necrotic changes may continue to occur and spread beneath a layer of tough coagulated skin. The material may accentuate any pre-existing skin condition.

Inhalation: The vapour is highly irritating to the upper respiratory tract and lungs and is toxic if inhaled. Acute effects of fluoride inhalations include irritation of nose and throat, coughing and chest discomfort. A single acute over-exposure may even cause nose bleed. Pre-existing respiratory conditions such as emphysema, bronchitis may be aggravated by exposure. Occupational asthma may result from exposure.

Chronic Effects: Principal Routes of exposure are by accidental skin and eye contact and by inhalation of vapours especially at higher temperatures. Inhalation of vapour may cause irritation of the mucous membranes of the nose, throat and lungs. Symptoms of exposure may be delayed. Hydrofluoric acid is extremely corrosive and continues to cause tissue necrosis until it has been removed or neutralised. All persons suspected of having burns or of having inhaled hydrofluoric acid MUST be treated promptly and rigorously.

Toxicological Data: N Av

12. ECOLOGICAL INFORMATION

Ecotoxicity: A low aquatic environmental hazard can be predicted.

13. DISPOSAL CONSIDERATIONS

Minor spills: Clean up all spills immediately. Avoid breathing vapours 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.

Disposal: Recycle wherever possible or consult manufacturer for recycling options. Consult State Land Waste Authority for disposal. Treat and neutralise at an effluent treatment plant. Use soda ash or slaked lime to neutralise. Recycle containers wherever possible; otherwise dispose of in an authorised landfill.

14. TRANSPORT INFORMATION

Transportation: Class 8: Corrosives shall not be loaded in the same vehicle or packed in the same freight container with:
Class 1: Explosives;
Class 4.3: Dangerous when wet substances;
Class 5.1: Oxidising agents;
Class 5.2: Organic peroxides;
Class 6: Poisonous (toxic) substances (where the poisonous substances are cyanides and the corrosives are acids):
Class 7: Radioactive substances;
Foodstuff and foodstuff empties.

Proper Shipping Name: CORROSIVE LIQUID, N.O.S – (Hydrofluoric/Sulphuric acid solution)

Hazchem Code: 2(X)E.

15. REGULATORY INFORMATION

Classification: This material is Hazardous according to criteria of NOHSC; HAZARDOUS SUBSTANCE.

Risk Phrases: **R23/24/25 –**Toxic by inhalation, in contact with skin, and if swallowed
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Safety Phrases: **S1/2** - Keep locked up and out of the reach of children -
S7/9 - Keep container tightly closed and in a well ventilated place.
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Poisons Schedule: S7.

16. OTHER INFORMATION

This MSDS summarises to our best knowledge at the date of issue, the chemical health and safety hazards of the material and general guidance on how to safely handle the material in the workplace. Since Auto Klene cannot anticipate or control the conditions under which the product may be used, each user must, prior to usage, assess and control the risks arising from its use of the material.