

**MATERIAL SAFETY DATA SHEET**  
**ARDROX HF-D/9D1B**

(Please ensure that this MSDS is received by appropriate person)

Date: August 2017

Version: 02

Ref.: MS137

**1 PRODUCT AND COMPANY**

**IDENTIFICATION PRODUCT IDENTIFICATION**  
Product Name **ARDROX HF-D/9D1B**  
Chemical Formula Formulated chemical  
Company Identification AFROX Malawi limited  
Johnstone Road  
Ginnery Corner  
Blantyre  
Tel. No: +265(1)871 611  
Fax No: +265(1)871 260  
EMERGENCY No **+265(1)871 611 (24HRS)**

**2 COMPOSITION / INFORMATION ON INGREDIENTS**

Chemical Name **Dimethylketone**  
CAS No. 67-64-1  
Concentration (%) 60-75  
EC No. 200-662-2  
Classification F; R11  
Xi; R36  
R66, R67  
  
Chemical Name **Propanol**  
CAS No. 71-23-8  
Concentration (%) 15-30  
EC No. 200-746-9  
Classification F; R11  
Xi; R41  
R67

**3 HAZARDS**

**IDENTIFICATION Main Hazards**

**Adverse Health Effects** Irritating to skin. Harmful: danger of serious damage to health by prolonged exposure through inhalation. Possible risk of impaired fertility.

**Chemical Hazards** N/A

**Biological Hazards** N/A

**Inhalation** Toxic by inhalation

**Eye Contact** Irritating to eyes

**Skin Contact** Harmful in contact with skin

**Ingestion** Harmful if swallowed

**4 FIRST AID MEASURES**

**Eye Contact** Immediately flush eyes with running water for at least 15 minutes, keeping eyelids open. Cold water may be used. Check for and remove any contact lenses. Seek medical attention.

**Skin Contact** In case of contact, immediately flush skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes. Cover the irritated skin with an emollient. Cold water may be used. Wash clothing before re-use. Get medical attention immediately.

**Ingestion** Have conscious person drink several glasses of water. DO NOT induce vomiting. Seek medical attention.

**Inhalation** Allow the victim to rest in a well-ventilated area. If the victim is not breathing, perform mouth-to-mouth resuscitation. Seek medical attention.

**Effects and Symptoms:**

**Skin Contact** Very hazardous in case of skin contact (permeator). Slightly hazardous in case of skin contact (irritant). Skin inflammation is characterized by itching, scaling, reddening, or, occasionally, blistering.

**Inhalation** Very hazardous in case of inhalation.

**Ingestion** Very hazardous in case of ingestion.

**Eye Contact** Hazardous in case of eye contact (irritant).

**Aggravating Conditions:** Repeated exposure to toxic material may produce general deterioration of health by an accumulation in human organs.

**5 FIRE FIGHTING MEASURES**

**Extinguishing Media** SMALL FIRE: Use DRY chemical powder.  
LARGE FIRE: Use water spray, fog or foam.  
Do not use water jet.

**Special Fire-Fighting Procedures** Fire fighters should wear positive pressure self-contained breathing apparatus (SCBA) and full turnout gear.

**Specific Hazards** This product can accumulate static charges which can cause an incendiary electrical discharge if sprayed or pumped at high pressures or flow rates. AEROSOLS: In a fire, beware of exploding aerosols cans.

**Hazardous** These products are carbon oxides (CO, CO2)

**6 ACCIDENTAL RELEASE MEASURES**

**Personal precautions** Splash goggles. Overalls. Vapour respirator. Boots. Gloves.

**Environmental precautions** FLAMMABLE. Be careful that the product is not present at a concentration level above TLV. Check TLV on the MSDS and with local authorities. Warn personnel to move away. Prevent entry into sewers, basements or confined areas; dike if needed.

**Spillages** Absorb with DRY earth, sand or other non-combustible material and put the spilled material in a suitable waste disposal container for subsequent safe disposal. Do not use metal tools or equipment. Finish cleaning by spreading water on the contaminated surface and allow to evaporate. Vapour may cause explosive mixture with air.

**7 HANDLING AND STORAGE**

**Handling** Keep locked up. Keep away from heat. Keep away from source of ignition. Ground all equipment containing material. Do not ingest. Do not breathe gas / fumes / vapour / spray. In case of insufficient ventilation, wear suitable respiratory equipment. If ingested, seek medical advice immediately and show the container or the label. Avoid contact with skin and eyes. Keep away from incompatibles such as oxidizing agents, reducing agents.

**Storage** Keep only in the original container in a cool, well-ventilated place away from sources of ignition, oxidizing materials and foodstuffs.

**8 EXPOSURE CONTROLS/PERSONAL PROTECTION**

**Occupational Exposure** Ingredient name: Ardrox HF-D/9D1B  
ACGIH TLV (United States 2003). Notes: Weight averaged theoretically calculated.  
STEL: 285ppm 15 minute(s).

Form: Vapour or mist.

STEL: 161 mg/m<sup>3</sup> 15 minute(s).

Form: Vapour or mist.

TWA: 228ppm 8 hour(s)

Form: Vapour or mist.

TWA: 1250mg/m<sup>3</sup> 8 hour(s).

Form: Vapour or mist.

**Personal Protection** Wash hands, forearms, and face thoroughly after handling compounds and before eating, smoking, using toilet, and at end of the day.

**Engineering Control Measures** Local exhaust ventilation should be provided. concentrations of vapours below their respective occupational exposure limits. Ensure that eye wash stations and safety showers are proximal to the work-station location.

**Hazards Respiratory** Vapour respirator. Be sure to use an approved / certified respirator or equivalent. Wear appropriate respirator when ventilation is inadequate.

**Skin & Body** Overalls

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<b>Hands</b>	Gloves
<b>Eyes</b>	Splash goggles
<b>9 PHYSICAL AND CHEMICAL PROPERTIES PHYSICAL DATA</b>	
Density	0.84 - 0.87g/cm <sup>3</sup>
Vapour Density	Weighted average: 1.77 (Air = 1)
Vapour Pressure	Weighted average: 21.82 kPa (163.66mmHg) (at 20°C).
Evaporation Rate (butyl acetate=1)	1.3 (Propanol) compared to Butyl acetate.
Colour	Clear liquid with white powder dispersion
Odour	Acetone odour
Odour Threshold	Weighted average: 86.5ppm
Physical state	White fluid suspension
Boiling Point	Weighted average: 58.33°C (137°F)
Melting Point	Weighted average: -95.96°C (-140.7°F)
Solubility	Easily soluble in cold water, hot water, methanol, diethyl ether. Partially soluble in n-octanol.
Octanol / water partition coefficient	The product is more soluble in water.
pH	Neutral
Flash point	The lowest known value is: Closed cup: -20°C (-4°F). Open cup: -20°C (-4°F). (Cleveland). (Dimethylketone).
Fire Hazards in Presence of various Substances	Extremely flammable in presence of open flames, sparks and static discharge, of heat. Flammable in presence of oxidizing materials of reducing materials. Slightly flammable to flammable in presence of combustible materials.
Auto-ignition temp	The lowest known value is 400°C (752°F) (Propanol).
Explosive properties	Flammable liquid
Lower explosion limit	LEL : 1.1% (v/v) UEL : 7.4% (v/v)
Viscosity	Kinetic: The highest known value is 2.25 cSt (Propanol)

<b>10 STABILITY AND REACTIVITY</b>	
<b>Stability</b>	The product is stable.
<b>Conditions to avoid</b>	Heat, sources of ignition.
<b>Incompatible Materials</b>	Slightly reactive to reactive with oxidizing agents, strong acids and alkalis.
<b>Hazardous Decomposition Products</b>	These products are carbon oxides (CO, CO <sub>2</sub> ).

<b>11 TOXICOLOGICAL INFORMATION</b>	
Skin	Slightly hazardous in case of skin contact (irritant).
Eyes	Hazardous in case of eye contact (irritant).
Acute Toxicity	Acute oral toxicity (LD50): 1280 mg/kg (Rat - weighted average theoretically calculated). Acute dermal toxicity (LD50): 12756 MG/KG (rabbit). (Calculated value for the mixture). Acute toxicity of the vapour (LC50): 29853ppm 4 hours (Rat). (Dimethylketone).
Chronic Toxicity	Repeated exposure to toxic material may produce general deterioration of health by an accumulation in human organs.
Carcinogenicity	Classified None, by NIOSH. (Dimethylketone). Classified A4 (Not classifiable for human or animal) by ACGIH (Dimethylketone). Classified None by OSHA. Classified None by NIOSH (Propanol).
Mutagenicity	No known data.
Reproductive Hazards	

Teratogenic Classified None for human (Dimethylketone).

<b>12 ECOLOGICAL INFORMATION</b>	
<b>Persistence / Degradability</b>	<b>BOD and COD:</b> The BOD is 80.8% [5 day(s)].
<b>Ecotoxicity</b>	Ecotoxicity in water: (LC50): 6500 mg/l (Weight averaged theoretically calculated), 96 hours [Fish (mosquito fish)].

<b>13 DISPOSAL CONSIDERATIONS</b>	
<b>Disposal Methods</b>	Product must be removed by a reputable waste disposal company. Recover or recycle if possible, otherwise incineration. Aerosol cans (used or unused) should be disposed of, without puncturing, via a licensed waste disposal contractor.
<b>Disposal of packaging</b>	DO NOT RE-USE CONTAINERS. Puncture all plastic containers. Flatten all metal containers. Shred all polywoven bags.
<b>Waste Classification</b>	A3140
<b>Hazardous Waste</b>	The classification of the product may meet the criteria for a hazardous waste.

<b>14 TRANSPORT INFORMATION</b>	
<b>ROAD TRANSPORTATION</b>	
UN No.	1090
ERG No	126
Class	3
Packaging Group	11
Label	Flammable
Proper Shipping Name	Dimethylketone
<b>SEA TRANSPORTATION</b>	
UN No.	1090
Class	3
Packaging group	11
Label	Flammable
Proper Shipping Name	Dimethylketone
<b>AIR TRANSPORTATION</b>	
UN No.	1090
Class	3
Packaging group	11
Label	Flammable
Proper shipping Name	Dimethylketone

<b>15 REGULATORY INFORMATION</b>	
EEC Hazard class:	Highly flammable. Irritant.
National legislation:	OHSact and Regulations 85 of 1993.
Reference:	SANS 10234 and its supplement.

<b>16 OTHER INFORMATION</b>	
Other Special Considerations:	No known data.
<b>EXCLUSION OF LIABILITY</b>	
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