

SAFETY DATA SHEET

Ardrox 9D1B (Aerosol)

1 IDENTIFICATION OF THE SUBSTANCE/PREPARATION AND THE COMPANY

PRODUCT NAME: Ardrox 9D1B (Aerosol)

PART No.: A9D1B--

APPLICATIONS: Penetrant developer.

SUPPLIER: Chemetall PLC
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2 COMPOSITION/INFORMATION ON INGREDIENTS

INGREDIENT NAME	CAS No.	CONTENTS	HEALTH (class)	RISK (R No.)
ACETONE	67-64-1	60-100 %	Xi	36, 66, 67
PROPAN-2-OL	67-63-0	10-30	Xi	36, 67
TALC (112051)	14807-96-6	10-30	NC	
BUTANE (IN PROPELLANT)	106-97-8	0		
PROPANE (IN PROPELLANT)	74-98-6	0		

COMPOSITION COMMENTS: The product composition (in %w/w) declared above does not include the propellant. This product contains additional ingredients which are either unclassified or below the concentration requiring declaration under the CHIP Regulations. The product is solvent-based.

In the ingredient list above, exposure limit values exist for one or more ingredients. See Section 8 for details.

The propellant consists of a mixture of propane and butane (30-60%).

3 HAZARDS IDENTIFICATION

Highly flammable.
Irritating to eyes.
May be irritating to skin.
The product will have a defatting action on skin.
Repeated exposure may cause skin dryness or cracking.

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Vapours may cause drowsiness and dizziness.

May be harmful by skin absorption, particularly after prolonged contact.

The vapour is heavier than air and can accumulate in low lying areas.

The aerosol package contains an extremely flammable propellant.

When operated continuously for long periods, the aerosol container can become very cold. Care should be taken to avoid skin burns.

4 FIRST AID MEASURES

INHALATION:	Move the exposed person to fresh air at once. Wear protective clothing and breathing apparatus if necessary. When unconscious, loosen tight clothing and position in secured sideposition. Perform artificial respiration if breathing has stopped. Provide rest, warmth and fresh air. Get medical attention if ill effects persist or are severe.
INGESTION:	Not usually applicable to the product as supplied. Ingestion of significant quantities of the product is unlikely to occur when using products supplied in aerosol or pump spray containers. Immediately rinse mouth and provide fresh air. Give the casualty small sips of water (up to a total of 100 ml) if he wants a drink but stop if he feels sick. Do not make the casualty drink a lot of liquid at once as he may vomit which may be dangerous. Do not give victim anything to drink if he is unconscious. When unconscious, loosen tight clothing and position in secured sideposition. Do not induce vomiting. If vomiting occurs, the head should be kept low so that stomach vomit doesn't enter the lungs. Provide fresh air, warmth and rest, preferably in comfortable upright sitting position. Get medical attention immediately!
SKIN:	Remove contaminated clothing. Rinse the skin immediately with lots of water. Continue to rinse for at least 10 minutes. Get medical attention if irritation or dryness persists after washing.
EYES:	Promptly wash eyes with plenty of water while lifting the eye lids. Make sure to remove any contact lenses from the eyes before rinsing. Continue to rinse for at least 10 minutes. Get medical attention if any discomfort continues.

5 FIRE FIGHTING MEASURES

EXTINGUISHING MEDIA:	The aerosol package contains an extremely flammable propellant. Extinguish fires using the following. TO BE USED: Water spray, fog or mist. Alcohol resistant foam. Powder. Carbon dioxide (CO ₂). NOT TO BE USED: Water jets.
SPECIAL FIRE FIGHTING PROCEDURES:	Containers close to fire should be removed or cooled with water. Water jets must not be used on burning product. In a fire, beware of exploding aerosol cans.
UNUSUAL FIRE & EXPLOSION HAZARDS:	The vapour is heavier than air and may spread over a wide area leading to the risk of remote ignition and flashback. The propellant vapour is heavier than air and may spread over a wide area leading to the risk of remote ignition and flashback. The aerosol package comprises the product and an extremely

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flammable propellant in a pressurised container. In a fire, beware of exploding aerosol cans.

HAZARDOUS DECOMPOSITION PRODUCTS:

On heating to total decomposition, the following materials may be produced.
Oxides of carbon. Silica.

PROTECTIVE MEASURES IN FIRE:

On heating to total decomposition, smoke and toxic gases may be produced, hence breathing apparatus should be worn in cases of fire.

6 ACCIDENTAL RELEASE MEASURES

PERSONAL PRECAUTIONS DURING SPILL:

Evacuate the area and keep unauthorised people away from the spillage. Extinguish all sources of ignition. Avoid sparks, flames, heat and smoking. Ventilate area well or wear breathing apparatus. Wear any necessary protective clothing/equipment. See Section 8 for further details.

PRECAUTIONS TO PROTECT ENVIRONMENT:

Contain the spillage to prevent entry into drains or waterways. Notify the local authority if spillage of a large quantity into drains or waterways occurs.

SPILL CLEANUP METHODS:

Spillages from aerosol containers are very unlikely. In the case of aerosols being ruptured, care should be taken due to the rapid escape of the pressurised contents and propellant. If a large number of containers are ruptured, treat as a bulk material spillage as follows. Spillages should be absorbed with sand, earth or mineral granules etc. The contaminated absorbent should then be transferred to polythene containers, using non-sparking shovels eg. rubber or plastic and disposed of via a licensed waste disposal contractor. Wash residues away with plenty of water or allow to evaporate if the quantity remaining is small.

7 HANDLING AND STORAGE

USAGE PRECAUTIONS:

Avoid inhalation of spray or vapour. Use only under conditions of adequate ventilation, or use respiratory protection. Avoid contact with the skin, eyes and clothing. Avoid contact of the product with strong oxidizing agents. Keep away from naked flames, sparks or any other sources of ignition. Do not spray this product on or near any flames or incandescent materials. Protect aerosol containers from sunlight and temperatures in excess of 50°C, even when apparently empty. Do not pierce or burn aerosol containers. Always wear the appropriate personal protective equipment when using or handling this product. Eyewash facilities must be available when handling this product. Do not smoke, eat or drink while handling or using this product. Do not ingest the product. Wash hands after use.

STORAGE PRECAUTIONS:

Store in a cool, well ventilated area. Keep away from heat, sparks and open flame. Keep away from oxidizing agents. Keep separate from food, feedstuffs, fertilizers and other sensitive material. Store and transport the product in its original container kept in an upright position. Containers of this product should be stored in a suitably designed or banded area to minimise the risk of environmental pollution. Store between -10°C and 30°C.

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8 EXPOSURE CONTROLS AND PERSONAL PROTECTION

INGREDIENT NAME	CAS No	STD	LT EXP (8 hrs)	ST EXP (15 min)
ACETONE	67-64-1	OES.	750 ppm	1500 ppm
PROPAN-2-OL	67-63-0	OES.	400 ppm	500 ppm
TALC (112051)	14807-96-6	OES.	1 mg/m ³	No std.
BUTANE (IN PROPELLANT)	106-97-8	OES.	600 ppm	750 ppm
PROPANE (IN PROPELLANT)	74-98-6		No std.	No std.

INGREDIENT COMMENTS: OES = Occupational Exposure Standard (from EH40).

3rd ingredient - The exposure limit values quoted for this ingredient are for Total Inhalable Dust and only refer to the hazard associated with dry dust.

PROTECTIVE EQUIPMENT:



VENTILATION:

General and/or local exhaust ventilation should be provided to keep operator exposure to the concentrated chemical and working solution below any recommended limits specified for the product ingredients. Ventilation also needs to be adequate to maintain the vapour concentration of the flammable/combustible ingredient(s) well below the lower explosive limit (LEL).

When using this product in confined spaces, ventilation needs to be adequate to maintain the vapour concentration of the flammable propellant well below the lower explosive limit (LEL). In some cases, a flameproof exhaust ventilation motor may be needed.

RESPIRATORS:

Wear suitable respiratory protection if exposed to high levels of spray or vapour. In most cases, a respirator with a filter cartridge recommended for the solvent(s) specified above would be satisfactory. Wear breathing apparatus if entering tanks, pits or enclosed spaces.

PROTECTIVE GLOVES:

Wear impermeable gloves complying with an approved standard (eg. BS 1651 or EN374). Suitable gloves would be those manufactured from PVC, nitrile rubber or neoprene.

EYE PROTECTION:

Wear eye/face protection complying with an approved standard (eg. BS 2092 Chemical Grade or EN166-3). In most conditions, this would consist of goggles or face visor.

OTHER PROTECTION:

Wear chemical splash-resistant overalls and chemical and impact-resistant footwear. Wear anti-static footwear to an approved standard (eg. BS 5958). Eyewash stations should be readily accessible near where this product is handled and used.

Monitoring may be required to determine the effectiveness of the ventilation controls and/or the necessity to use respiratory protective equipment.

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9 PHYSICAL AND CHEMICAL PROPERTIES

APPEARANCE:	Cream-like suspension (after stirring).		
COLOUR:	White (after stirring).		
ODOUR/TASTE:	Acetone, ketone. The odour threshold for acetone is approximately 100 ppm.		
PHYSICAL DATA COMMENTS:	The information given in this section relates to the actual product inside the aerosol container. It does not include the propellant. As this product contains only an organic solvent/oil system, with no or negligible water content, a meaningful pH value cannot be determined.		
SOLUBILITY DESCRIPTION:	Partially miscible with water. Partially miscible with hydrocarbons and halogenated hydrocarbons. Talc is insoluble in water and solvents.		
BOILING POINT (°C):	56	MELTING POINT (°C):	<-20
SPECIFIC GRAVITY (Water=1):	0.88	VAPOUR DENSITY (air=1):	>2
FLASH POINT (°C):	-18		
FLASH POINT METHOD:	CC (Closed cup).		

10 STABILITY AND REACTIVITY

STABILITY:	Under normal conditions of storage and use, this product will be stable.
CONDITIONS TO AVOID:	Avoid conditions involving non-intentional contact with the materials specified in the section 'Materials to Avoid'. Avoid heat, flames and other sources of ignition. Welding or cutting should not be carried out on any vessel containing the solvent or vapour.
HAZARDOUS POLYMERIZATION:	Under normal conditions of storage and use, hazardous polymerisation of this product will not occur.
MATERIALS TO AVOID:	This product will react with the following material(s) - strong oxidizing agents. The reaction may be vigorous or violent.
HAZARDOUS DECOMPOSITION PRODUCTS:	On heating to total decomposition, the following materials may be produced. Oxides of carbon. Silica.

11 TOXICOLOGICAL INFORMATION

TOXICOLOGICAL INFORMATION:	No specific toxicological tests have been carried out on this product.
HEALTH HAZARDS, GENERAL:	Very irritating to the following - eyes. This product has a strong defatting action on the skin. Prolonged or frequent skin contact may lead to irritation, dryness and cracking and the risk of developing dermatitis. May be harmful in contact with skin, particularly after prolonged contact. Inhalation of spray or vapour may irritate the respiratory system. Vapour may have a narcotic effect in high concentrations.

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INHALATION:	Inhalation of vapour may cause the following symptoms. Irritation of the nasal tract and respiratory system. Large amounts may cause the following symptoms. Coughing. Shortness of breath. Dizziness. Drowsiness. Nausea. Central nervous system depression. Narcotic effects.
INGESTION:	Not usually applicable under normal conditions of handling and use of products in aerosol/pump spray containers. May cause the following symptoms. Irritation of the mouth, throat and digestive system. Nausea. Vomiting. Drowsiness. Unconsciousness.
SKIN:	Product has a defatting effect on skin. Prolonged or frequent contact may lead to irritation, dryness and cracking. May be harmful by skin absorption after prolonged or extensive contact.
EYES:	Pain or irritation, watering, redness.
HEALTH WARNINGS:	<p>ACUTE HEALTH EFFECTS: A single exposure may lead to irritation of the following - the eyes, skin, nasal tract and respiratory system. High concentrations of vapour may cause adverse central nervous system effects. Absorption through the skin may cause harmful effects.</p> <p>CHRONIC HEALTH EFFECTS: Exposure to sublethal quantities over a prolonged period of time may lead to the following symptoms - skin dryness and cracking and the risk of developing dermatitis.</p>

12 ECOLOGICAL INFORMATION

ENVIRONMENTAL HAZARDS:	Do not allow the product as supplied to enter local authority drains, waterways or sewers, or soil. The solvents in the product do not bio-accumulate. The presence of large quantities of the solvent(s) in this product in surface waters could present a hazard in terms of oxygen depletion.
DEGRADABILITY:	<p>No specific biodegradability tests have been carried out on this product. Incomplete data available on the biodegradability of the ingredients. This product contains the following ingredients/ingredient types that are classified as biodegradable/readily biodegradable. Acetone. Propan-2-ol.</p> <p>This product contains the following ingredients/ingredient types that are classified as non biodegradable. Generally, the inorganic constituents would not be expected to be biodegradable.</p> <p>Incomplete data available on the remainder of the ingredients.</p>
ACUTE FISH TOXICITY:	<p>No specific aquatic toxicity tests have been carried out on this product. Incomplete information available on the toxicity of the product ingredients to aquatic organisms. Based on the information available for some of the ingredients, this product is expected to be as follows - of low toxicity to the aquatic environment (LC50/EC50/IC50=>100 mg/l).</p>

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13 DISPOSAL CONSIDERATIONS

DISPOSAL METHODS:

This product should not be discharged untreated into local authority waterways or sewers. Under normal methods of use, little waste material is produced. Aerosol/pump spray cans (used or unused) should be disposed of, without puncturing, via a licensed waste disposal contractor.

Bulk quantities of unused product and emptied containers should be recycled or disposed of via a licensed waste disposal contractor.
This material and its container must be disposed of as hazardous waste.

Disposal of this product, solutions and any by-products should at all times comply with the requirements of the Environmental Protection Act and its subsidiary regulations and any regional local authority requirements.

14 TRANSPORT INFORMATION

LABEL FOR CONVEYANCE:



ROAD:

UN No:	1950	ADR CLASS No:	2
ADR ITEM No:	5F		
PROPER SHIPPING NAME I:	AEROSOLS, FLAMMABLE.		

RAIL:

RAIL TRANSPORT CLASS No: 2

SEA:

UN SEA:	1950		
SEA TRANSPORT CLASS No:	2	IMDG Page No:	2102
MARINE POLLUTANT:	No.		

AIR:

UN AIR:	1950
AIR TRANSPORT CLASS No:	2.1

15 REGULATORY INFORMATION

LABEL FOR SUPPLY:



EXTREMELY FLAMMABLE



IRRITANT

RISK PHRASES:

R-12	Extremely flammable.
R-36	Irritating to eyes.
R-66	Repeated exposure may cause skin dryness or cracking.

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R-67	Vapours may cause drowsiness and dizziness.
S-16	Keep away from sources of ignition - No Smoking.
S-23A	Do not breathe gas/fumes/vapour/spray.
S-24/25	Avoid contact with skin and eyes.
S-26	In case of contact with eyes, rinse immediately with plenty of water and seek medical advice.
S-37	Wear suitable gloves.
S-51	Use only in well ventilated areas.

SAFETY PHRASES:

UK REGULATORY REFERENCES:

Health and Safety at Work Act 1974.
Control of Substances Hazardous to Health Regulations.
Chemicals (Hazard Information and Packaging for Supply) Regulations.
Environmental Protection Act.
Environmental Protection (Duty of Care) Regulations.
Control of Pollution (Special Waste) Regulations.
European Agreement Concerning The International Carriage of Dangerous Goods by Road (ADR).
Carriage of Dangerous Goods by Road and Rail (Classification, Packaging and Labelling) Regulations.

16 OTHER INFORMATION

USER NOTES:

This Safety Data Sheet has been compiled for the product as supplied. In use, it may be dissolved in/diluted with water or other solvent, mixed with other chemicals/products or used as supplied. The hazards of the working solution will be dependent on its concentration and temperature and will need to be combined with those of any other chemicals/products involved, if applicable. See the appropriate Technical Data Sheet for further information.

It should be noted that this Safety Data Sheet only outlines the hazards of the product specified and does not constitute a users workplace risk assessment as required by other health and safety legislation.

For further safety-related information, please contact:

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RECOMMENDED USES AND RESTRICTIONS:

This product is intended to be used industrially/commercially for the application described in Section 1. It should not be used for domestic purposes or for any other industrial/commercial use without the prior approval of Chemetall.

AEROSOL PRODUCTS - ADDITIONAL NOTES:

The information in Section 15 refers to the Supply Classification, according to the C.H.I.P. Regulations, of the actual product inside the aerosol container, without any additional hazards from the propellant. As the aerosol container

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contains an extremely flammable propellant, the hazard information on the can will be modified as follows.

Additional Hazard Symbols:

Flame symbol (Extremely Flammable). This replaces the Highly Flammable symbol.

Additional Risk Phrases:

Extremely Flammable (R-12). This replaces Highly Flammable (R-11).

INFORMATION SOURCES: Health & Safety Executive Guidance Note EH40 - Occupational Exposure Limits.
Raw material suppliers Safety Data Sheets.
Croner's Dangerous Chemicals Emergency First Aid Guide.

REVISION COMMENTS: The following sections contain revised or additional information.
15.

REVISION DATE: 21-03-01

REVISION No. /REPLACES SDS ISSUED:
5 / 05-01-01

SDS No.: 91/1542/1