

MATERIAL SAFETY DATA SHEET

PRODUCT NAME : XDS BLACK TIP SEAL DUST

1. Product and Company Identification

Product name: Dust generated by a PTFE based XDS scroll pump wall tip seal material, in the normal course of wear with time.

Synonyms: None

Item Numbers: XDS5/10 and 35-i Tip Seal Kits: A726-01-805, A730-01-801

XDS35-i pumps: A730-01-983

The tip seals are also used in XDS pumps with Item Numbers A72X-YY-ZZZ, where:

X is the pump type - 4=XDS5, 5=XDS5C, 6=XDS10, 7=XDS10C.

YY is the variant - 01 to 99.

ZZZ is the voltage - 903 (220-240 V 50/60 Hz), 904 (100/200 V, 50/60 Hz),
905 (200-230/380-460 V, 50/60 Hz) or 906 (110-120 V, 50/60 Hz)

Note :

This MSDS is **not** applicable, and you should instead refer to MSDS P120-30-015, if:

- Your XDS5/10 Tip Seal Kit was supplied after May 2005.
- Your pump has an Item Number of A72X-YY-904 and has a serial number of 056069355 or higher (or has been serviced since January 2005).
- Your pump has an Item Number of A724-YY-ZZZ or A726-YY-ZZZ and has a serial number of 056228591 or higher (or has been serviced since May 2005).
- Your pump has an Item Number of A725-YY-ZZZ or A727-YY-ZZZ and has a serial number of 056258797 or higher (or has been serviced since May 2005).

If you are not certain whether this MSDS applies to your XDS pump, contact Edwards and specify your pump Item Number and Serial Number.

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2. Hazards Identification

EMERGENCY OVERVIEW

A fine black dust may be emitted from the pump if the exhaust is not connected and the pump has run for some time, at or near the pump's ultimate vacuum. The dust may also be encountered when the pump is dismantled for servicing.

This dust may irritate the skin, the eyes and the respiratory system. The dust should not be inhaled.

For short and long term exposure effects see Section 11 Toxicological data.

- Eye Effects: May cause mild Irritation.
- Skin Effects: May cause mild Irritation.
- Ingestion/Oral Effects: May cause gastro-intestinal irritation. Can be harmful.
- Inhalation Effects: May cause upper respiratory tract irritation.

MEDICAL CONDITIONS AGGRAVATED BY EXPOSURE: None known.

NFPA Hazard codes		HMIS Hazard codes		Rating System
Health	1	Health	1	0 = No Hazard
Flammability	0	Flammability	0	1 = Slight Hazard
Instability	0	Reactivity	0	2 = Moderate Hazard
				3 = Serious Hazard
				4 = Severe Hazard

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3. Composition/Information on Ingredients

Ingredient	% Weight (minimum)	% Weight (maximum)	CAS No	Hazard class*	Risk phrase*
Polytetrafluoroethylene	20	100	9002-84-0	Not applicable	Not applicable
Bronze	0	80	-	Not applicable	Not applicable
Peek	0	50	29658-26-2	Not applicable	Not applicable
Polyimide #	0	40	134119-41-8	Not applicable	Not applicable
Calcium Fluoride	0	40	7789-75-5	Not applicable	Not applicable
Activated Carbon	0	35	7440-44-0	Not applicable	Not applicable
Poly (Oxy-1, 4-Phenylene-carbonyl)	0	35	26099-71-8	Not applicable	Not applicable
Calcined Coke (Petroleum)	0	35	64743-05-1	Not applicable	Not applicable
1, 4-Dichlorobenzene-Disodium Sulphide Polymer	0	30	26125-40-6	Not applicable	Not applicable
Molybdenum Sulphide (MoS ₂)	0	25	1317-33-5	Not applicable	Not applicable
Poly (Thio-1, 4-Phenylene)	0	25	25212-74-2	Not applicable	Not applicable
Aluminium Oxide	0	25	1344-28-1	Not applicable	Not applicable
Iron Oxide (Fe ₂ O ₃)	0	5	1309-37-1	Not applicable	Not applicable
C. I. Pigment Blue 36	0	1	68187-11-1	Not applicable	Not applicable
Zinc Iron Chromite Brown Spinel	0	1	68186-88-9	Not applicable	Not applicable

*Hazard class & Risk phrase. These columns are only completed for ingredients which are classified as hazardous under EU Directive No 1272/2008 (as amended) and are present in sufficient concentration to make the overall substance hazardous. In all other situations, the column will be completed as "Not applicable".

Polyimide: 1, 3-Isobenzofurandione, 5, 5'-Carbonylbis-, polymer with 1H, 3H-benzo (1, 2-C:4, 5-C) Difuran-1,3,5,7-Tetrone and 1, 3-Diisocyanatomethylbenzene.

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4. First Aid Measures

- Eyes:** Get immediate medical attention. Immediately flush eyes with plenty of water for at least 15 minutes. Do not attempt to remove the material.
- Skin:** Wash with soap and water. If molten material contacts skin, cool with water and get medical attention. If molten material adheres to skin, cool quickly with water, but do not attempt to peel solidified material from skin.
- Ingestion/Oral:** Do not induce vomiting. Get immediate medical attention. Drink two glasses of water. Never give anything by mouth to an unconscious person.
- Inhalation:** Remove patient to fresh air. If respiratory symptoms develop, get medical attention.
- Other Information:** Inhalation of decomposition products resulting from exposure of the dust to high temperatures, or from smoking fluoroelastomer contaminated tobacco may cause a temporary flu-like illness known as "polymer flu fever". For information on decomposition products, see Section 5.

5. Fire Fighting Measures

- Extinguishing Media:** The dust is non-combustible. Use extinguishing media suitable for the surrounding fire.
- Fire and Explosion Hazard:** Hazardous decomposition products include toxic gases of hydrogen fluoride and perfluorohydrocarbons. Fluoropolymer may undergo degradation to materials which may be toxic and corrosive to skin.
- Special Protective Equipment for Fire Fighters:** Wear full protective clothing, including helmet, self-contained positive pressure or pressure demand breathing apparatus, tunic and trousers (leggings), bands around arms, waist and legs, face mask, and protective covering for exposed areas of the head.

For Flammability Properties - see Section 9.

6. Accidental Release Measures

Avoid discharge into the environment. Keep out of drains, sewers and water courses. Evacuate unprotected and untrained personnel from the hazard area. Qualified personnel must clean up the spill. Ventilate the area with fresh air. Collect as much of the spilled material as possible. Use wet sweeping compound or water to avoid dusting. Sweep up. Clean up residue. Place in a closed container approved for transportation by appropriate authorities. Dispose of collected material as soon as possible. For disposal requirements, see Section 13.

7. Handling and Storage

- Handling:** Avoid contact with eyes: wear safety goggles/glasses with side shields. Avoid prolonged or repeated contact with skin: wear suitable protective gloves. Avoid breathing airborne dust: wear suitable respiratory equipment where necessary.
- Storage:** Store away from sources of heat. Store away from areas where the dust may come into contact with food or pharmaceuticals. Store away from flammable and combustible materials.

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8. Exposure Controls/Personal Protection

Exposure Limits:

Ingredient	ACGIH - TLV -	OSHA - PEL	Occupational Exposure Limits EH40 (UK)
Activated carbon			TWA: 10 mg/m ³ (Total inhalable dust) 4 mg/m ³ (Respiratory dust)
Molybdenum Sulphide			TWA: 10 mg/m ³ as Mo OES STEL: 20 mg/m ³ as Mo OES
Aluminium Oxide			TWA: 10 mg/m ³ (Total inhalable dust) 4 mg/m ³ (Respirable dust)
Iron Oxide			TWA: 10 mg/m ³ (Total inhalable dust) as Rouge 4 mg/m ³ (Respirable dust) as Rouge STEL: 10 mg/m ³ fume as Fe OES
C.I. Pigment Blue 36			(as Co) 0.1 mg/m ³ OES

Personal Protection:

Engineering Measures:	General ventilation is required.
Respiratory Protection:	Avoid breathing airborne dust. Wear suitable respiratory equipment if exposure limits are exceeded.
Hand/Skin Protection:	Wear suitable neoprene or nitrile rubber gloves. Wear suitable protective clothing where there is the possibility of airborne dust.
Eye/Face Protection:	Wear goggles/safety glasses.
Hygiene Measures:	Practice good workplace hygiene. Do not eat or smoke when handling. Wash hands after handling and before eating.
Other/General Protection:	None.

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9. Physical and Chemical Properties

Appearance and Odour	Fine black odourless powder	Boiling point	Not applicable	°C/°F
pH (as supplied)	Not applicable	Freezing Point	Not applicable	°C/°F
Solubility in Water	Insoluble	Auto Ignition	> 500 / 932	°C/°F
Volatile Content by Volume	Not applicable	Flash Point	Not applicable	°C/°F
Specific Gravity	2.0-4.0 g/cc ASTM D792 D1457			
Vapour Pressure (mbar)	Not applicable	Vapour Pressure (Torr)	Not applicable	

Melting point: 327 to 342 °C/620 to 648 °F (ASTM D 1457).

Dust particle size: A small proportion of dust passes through a filter with hole size of 1×10^{-6} m.

10. Stability and Reactivity

Stability: Stable.

Material/Conditions to Avoid: Alkali and alkaline earth metals. Reactions with metals in powder form occur from temperatures of 370 °C/698 °F upwards.
Do not heat the dust in a non-compressed, finely divide powder form above 200 °C/392 °F in air. This could result in an uncontrolled exothermic reaction.

Hazardous Decomposition: Hazardous decomposition products include: Carbon Monoxide and Carbon Dioxide, Hydrogen Fluoride, Perfluoroisobutylene (PFIB), Hexafluoropropylene, Carbonyl Fluoride, Tetrafluoroethylene, toxic vapours, gases or particulates.
Initial decomposition occurs at 380 °C/716 °F, and above 420 °C/788 °F significant decomposition occurs with the formation of decomposition products listed above.

Hazardous Polymerisation: Will not occur.

11. Toxicological Information

For a comprehensive description for the various toxicological (health) effects which may arise if the user comes into contact with the substance or preparation, see Section 2 (Hazards Identification).

Animal data:

LD50 value: No data available.

LC50 value: No data available.

Carcinogenicity:

Does not contain a chemical which is known to cause cancer.

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12. Ecological Information

The material is not readily biodegradable and has the potential to accumulate in the environment.

13. Disposal Considerations

Incinerate only in a suitable industrial or commercial facility. Combustion products will include hydrogen fluoride. All local and national regulations should be followed.

14. Transport Information

This product is not classified as dangerous under transport regulations. If the product is to be transported when removed from the pump, it should be sealed in a closed container.

PARAMETER	EUROPEAN	CANADIAN TDG	UNITED STATES DOT
Proper Shipping Name	Not applicable	Not applicable	Not applicable
Hazard Class	Not applicable	Not applicable	Not applicable
Identification Number	Not applicable	Not applicable	Not applicable
Shipping Label	Not applicable	Not applicable	Not applicable

15. Regulatory Information

European Regulatory Information

This product has been classified in accordance with EU Regulation No 1272/2008 (as amended) on the Classification, Labelling and Packaging of Substances and Mixtures.

Classified as dangerous to supply : No.

Risk Phrases : Not applicable.

Safety Phrases : Not applicable.

Symbols : None.

United States Regulatory Information

All materials contained in this product are listed on the U.S. Toxic Substances Control Act (TSCA).

SARA TITLE III - SECTION 313 SUPPLIER NOTIFICATION:

This product contains the following toxic chemicals subject to the reporting requirements of section 313 of the Emergency Planning and Community Right-to-Know Act (EPCRA) of 1986 and 40 CFR Part 372:

C. I. Pigment Blue 36, Zinc Iron Chromite Brown Spinel, C. I. Pigment yellow 119.

EPCRA Hazardous Waste Number - None (non-hazardous).

EPCRA Hazard Class - Fire hazard: no pressure, no reactivity, no acute, no chronic.

California Proposition 65: This product does not contain chemicals known to the State of California to cause cancer or reproductive toxicity.

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Canadian Regulatory Information

WHMIS Classification: Not applicable.

All ingredients contained in this product are included on the Canadian DSL.

16. Other Information

This MSDS is compiled in accordance with ANSI Z400.1 and Regulation (EC) No 1907/2006 concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH).

Sources of information for this data sheet:

- "DYNEON (TM) PTFE FILLED COMPOUNDS" Material Safety Data Sheet, Document Id: 09-3541-1, Version: 5, Issue Date: 11/11/2003.

Glossary:

ACGIH - American Conference of Governmental Industrial Hygienists; **ANSI** - American National Standards Institute; **ASTM** - American Society for Testing and Materials; **Canadian TDG** - Canadian Transportation of Dangerous Goods; **CAS** - Chemical Abstracts Service; **Chemtrec** - Chemical Transportation Emergency Center (US); **DSL** - Domestic Substances List; **EH40 (UK)** - HSE Guidance Note EH40 Occupational exposure limits; **EINECS** - European Inventory of Existing Commercial Chemical Substances; **EPCRA** - Emergency Planning and Community Right-to-Know Act; **HMIS** - Hazardous Material Information Service; **LC** - Lethal Concentration; **LD** - Lethal Dose; **NFPA** - National Fire Protection Association; **OES** - Occupational Exposure Standard; **OSHA** - Occupational Safety and Health Administration, US department of Labour; **PEL** - Permissible exposure limit; **SARA (Title III)** - Superfund Amendments and Reauthorization Act; **SARA 313** - Superfund Amendments and Reauthorization Act, Section 313; **TLV** - Threshold Limit Value; **TSCA** - Toxic Substances Control Act Public Law 94-469; **TWA** - Time-Weighted Average; **US DOT** - US Department of Transportation; **WHMIS** - Workplace Hazardous Materials Information System.

Revisions:

October 2010 - Data Sheet reviewed and updated to reflect the latest regulatory and supplier safety information.

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