

TLS/FD-9
SAFETY DATA SHEET

Revision Date: May 31, 2023
Revision Number: 11 supersedes 10

1. Identification of the substance/mixture and of the company

1.1 Product identifier

**Product Name: Type FD™
Electrical Contact Cleaner Aerosol**

Product ID numbers: FD-9, FD-9M

1.2 Relevant identified uses of the mixture and uses advised against

Identified uses: Electrical Cleaner/Degreaser

List of advices against: Not applicable.

1.3 Details of the supplier of the safety data sheet

Supplier/Manufacturer:

American Polywater Corporation

11222 - 60th Street North

Stillwater, MN 55082 USA

Tel: 1-651-430-2270

Email: sds@polywater.com

1.4 Emergency telephone numbers

INFOTRAC: 1-800-535-5053 (USA) 1-352-323-3500 (INT'L)

2. Hazards Identification

2.1 Classification of the substance or mixture

Classification according to USA OSHA 29 CFR 1910.1200 (2012) and Canada HPR (SOR/2015-17; WHMIS 2015).

Flam Aerosol 1	H222, H229
Skin Irrit. 2	H315
STOT SE 3	H336
Rep. Tox. 2	H361

2.2 Label elements

This product is intended for consumer use and is labeled according to CPSC guidelines and not to GHS guidelines listed below. It is safe for consumers and other users under normal and reasonably foreseeable use. The SDS contains valuable information for industrial workplace conditions.

Contains: Isohexanes, Ethanol, n-Pentane, n-Hexane, Isopropanol, Carbon Dioxide



Pictograms:

Signal word: Danger

Hazard Statements:

H222	Extremely flammable aerosol.
H229	Pressurized container: May burst if heated.
H315	Causes skin irritation.
H336	May cause drowsiness or dizziness
H361	Suspected of damaging fertility or the unborn child

Precautionary Statements:

- P210 Keep away from sparks, flames and hot surfaces. No smoking.
- P211 Do not spray on an open flame or other ignition source.
- P251 Do not pierce or burn, even after use.
- P280 Wear protective gloves.
- P261 Avoid breathing vapor.
- P271 Use only outdoors or in a well-ventilated area.
- P303 + P361 + P353 IF ON SKIN: Take off immediately all contaminated clothing. Rinse skin with water.

- P332 + P313 If skin irritation occurs: Get medical attention.

- P304 + P340 IF INHALED: Remove person to fresh air and keep comfortable for breathing.
- P308 + P313 If exposed or concerned: Get medical advice.
- P410 + P412 Protect from sunlight. Do not expose to temperatures exceeding 50°C/122°F.
- P501 Dispose of contents/container in accordance with local and national regulations.
- Notes:** Aspiration classification not applied due to the physical form of the product.
- 2.3 Other hazards:** No information available.

3. Composition/Information on Ingredients

<u>Component</u>	<u>CAS #</u>	<u>EC #</u>	<u>Wt. %</u>
Isohexanes	107-83-5	203-523-4	80 -95%
Ethanol	64-17-5	200-578-6	<15%
n-Pentane	109-66-0	203-692-4	<3%
n-Hexane	110-54-3	203-777-6	<3%
Isopropanol	67-63-0	200-661-7	<2%
Carbon Dioxide	124-38-9	204-6969-9	<8%

4. First Aid Measures

4.1 Description of first aid measures

- Eye Contact:** If eye irritation from exposure to vapors develops, move to fresh air. Flush eyes with clean water. If irritation persists, seek medical attention. For direct eye contact, flush with large quantity of water for 15 minutes. Seek medical attention.
- Skin Contact:** Remove contaminated clothing; flush skin thoroughly with water. If irritation occurs, seek medical attention.
- Inhalation (Breathing):** If irritation of nose or throat develops, move to fresh air. If irritation persists, seek medical attention. If breathing is difficult, provide oxygen. If not breathing, give artificial respiration. Seek immediate medical attention.
- Ingestion (Swallowing):** Do not induce vomiting or give anything by mouth unless directed to do so by medical personnel. Get medical attention if symptoms appear.

4.2 Most important symptoms and effects, both acute and delayed

Refer to Section 11 for more information.

4.3 Indication of immediate medical attention and special treatment needed.

Aspiration hazard. If ingested, material may be aspirated into the lungs and cause chemical pneumonitis. This route not expected in aerosol package.

5. Firefighting Measures

5.1 Extinguishing media:

Carbon dioxide, water fog, dry chemical or foam.

5.2 Special hazards arising from the substance or mixture

Flammable aerosol product. Vapors may travel considerable distance to source of ignition and flash back. May burn with nearly invisible flame.

Hazardous decomposition and by-products:

Burning generates carbon monoxide, carbon dioxide.

5.3 Advice for firefighters

Wear full protective clothing, including self-contained, positive pressure or pressure-demand breathing apparatus. Sealed container can build up pressure when exposed to high heat. Use water spray to cool fire exposed containers. Aerosol cans can build up pressure and explode when exposed to temperatures greater than 120°F (49°C).

6. Accidental Release Measures

6.1 Personal precautions, protective equipment and emergency procedures:

Keep away from heat/sparks/open flames/hot surfaces. No smoking. For a spill in a confined space, provide mechanical ventilation to disperse or exhaust vapors. For emergency responders: use respiratory protection: half-face or full-face respirator with filter(s) for organic vapor for spills in a confined space. Chemical goggles are recommended if splashes or contact with eyes is possible. For small spills: normal antistatic work clothes are usually adequate.

6.2 Environmental precautions:

Avoid release to the environment. Dike the spill to prevent entry into waterways, sewers, basements or confined areas.

6.3 Methods materials for containment and cleaning up:

Absorb spill with sand or absorbents. Collect as much of the spilled material as possible using non-sparking tools and transfer to a container. Seal the container. Remember, adding an absorbent material does not change the toxicity or flammability hazard.

6.4 Reference to other sections:

Refer to Sections 4, 5, 8, and 13 for more information.

7. Handling and Storage

7.1 Precautions for safe handling

Extremely flammable aerosol. Keep containers cool, dry, and away from sources of ignition. Do not expose container to direct sunlight or temperatures above 50°C/122°F. Do not transport or store near heat sources. No smoking. Avoid breathing vapors or spray. Do not get in eyes, on skin, or on clothing. Do not eat, drink or smoke when using this product. Wash thoroughly after handling. Wash contaminated clothing before reuse. Use only outdoors or in a well-ventilated area. For industrial or professional use only.

7.2 Conditions for safe storage, including incompatibilities

Do not transport or store near heat sources. Keep cans dry and away from sources of ignition. Do not puncture or incinerate container. Store this product with adequate ventilation.

7.3 Specific end uses

See technical data sheet on this product for further information.

8. Exposure Controls / Personal Protection

8.1 Control parameters

Exposure limits and recommendations:

Isohexane (107-83-5)

Country/Source	Long-term exposure limit – 8 hr. TWA	Short-term exposure limit – 15 min
USA, ACGIH	500 ppm	1000 ppm
USA, NIOSH TWA	100 ppm, 350 mg/m ³	510 ppm, 1800 mg/m ³
Alberta	1760 mg/m ³ , 500 ppm	3500 mg/m ³ , 1000 ppm

Quebec	1760 mg/m ³ , 500 ppm	3500 mg/m ³ , 1000 ppm
Saskatchewan*	500 ppm	1000 ppm

Ethanol (64-17-5)

Country/Source	Long-term exposure limit – 8 hr. TWA	Short-term exposure limit – 15 min
USA, OSHA NIOSH	1900 mg/m ³ , 1000 ppm	--
USA, ACGIH	1881 mg/m ³ , 1000 ppm	--
Alberta	1880 mg/m ³ , 1000 ppm	--
Ontario	--	1000 ppm
Quebec	1880 mg/m ³ , 1000 ppm	--
Saskatchewan*	1000 ppm	1250 ppm

n-Pentane (109-66-0)

Country/Source	Long-term exposure limit – 8 hr. TWA	Short-term exposure limit – 15 min
USA, OSHA NIOSH	1000 ppm	
British Columbia		
Alberta	600 ppm, 1700 mg/m ³	--
Ontario	600 ppm	--
Quebec	120 ppm, 350 mg/m ³	--
Saskatchewan	600 ppm	750 ppm

n-Hexane (110-54-3)

Country/Source	Long-term exposure limit – 8 hr. TWA	Short-term exposure limit – 15 min
USA, OSHA, NIOSH	180 mg/m ³ , 50 ppm	
USA, ACGIH	50 ppm	
British Columbia	200 ppm	400 ppm
Alberta	176 mg/m ³ , 50 ppm	--
Ontario (skin)	50 ppm	--
Quebec	176 mg/m ³ , 50 ppm	--
Saskatchewan (skin)	50 ppm	62.5 ppm

Isopropanol, 2-propanol (67-63-0)

Country/Source	Long-term exposure limit – 8 hr. TWA	Short-term exposure limit – 15 min
USA, OSHA NIOSH	980 mg/m ³ , 400 ppm	1,225 mg/m ³ , 500 ppm
USA, ACGIH	200 ppm	400 ppm
British Columbia	200 ppm	400 ppm
Alberta	492 mg/m ³ , 200 ppm	984 mg/m ³ , 400 ppm
Ontario	200 ppm	400 ppm
Quebec	985 mg/m ³ , 400 ppm	1,230 mg/m ³ , 500 ppm
Saskatchewan*	200 ppm	400 ppm

* Manitoba, Newfoundland and Labrador, Nova Scotia, and Prince Edward Island are all based on the current ACGIH TLVs. New Brunswick is based on an older version ACGIH. Nunavet and Northwest Territories are based heavily on current ACGIH TLVs.

8.2 Exposure controls

Respiratory protection:

Normal ventilation is adequate. If exposure exceeds recommended limits, respirator protection is recommended. Use a respirator or gas mask with cartridges for organic vapors (NIOSH-approved) or use supplied air equipment.

Protective gloves:

For repeated or prolonged skin contact, the use of impermeable gloves is recommended to prevent drying and possible irritation.

Eye protection:

Safety glasses recommended.

Other protective equipment:

It is suggested that a source of clean water be available in work area for flushing eyes and skin. Impervious clothing should be worn as needed.



9. Physical and Chemical

9.1 Information of basic physical and chemical properties (bulk liquid)

Appearance:	Clear, colorless liquid; mild odor.
Odor threshold:	Not available
pH:	Does not apply
Freezing point:	Not available
Boiling point:	144°F / 62°C
Flash point:	>0°F / -18°C (TCC)
Evaporation rate:	1.7 (n-butyl acetate = 1)
Flammability (solid, gas):	Not applicable to liquids
Flammability limits:	LEL: 1.2%
Vapor pressure:	Not available
Vapor density (Air = 1):	>1 (Air = 1)
Specific gravity (H₂O = 1):	0.67
Solubility in water:	Not available
Coefficient of Water/Oil	
Distribution:	Not available
Auto-ignition temperature:	750.2°F / 399°C
Decomposition temperature:	Not available
Viscosity:	Not available

9.2 Other Information

Volatiles (Weight %):	100%
VOC Content:	670 g/l

10. Stability and Reactivity

10.1 Reactivity:

See remaining headings in Section 10.

10.2 Chemical stability:

Stable

10.3 Possibility of hazardous reactions:

None known.

10.4 Conditions to avoid:

Avoid heat, flame, and sparks.

10.5 Incompatible materials :

Strong oxidizing agents.

10.6 Hazardous decomposition products:

Carbon dioxide, carbon monoxide.

11. Toxicological Information

11.1 Information on toxicological effects:

Acute toxicity

Eye contact:

Direct eye contact may cause eye irritation. This irritation is minimal and expected to be transient.

Skin contact:

Prolonged or repeated skin exposure can remove oils, causing redness, drying and cracking. Persons with pre-existing skin disorders may be more susceptible to skin irritation from this material.

Irritation and Sensitization Potential:

Product may be irritating to skin and eyes. It is not a sensitizer.

Inhalation (Breathing):

Concentrated solvent vapors may cause irritation of the nose and throat. Prolonged exposure to excessively high vapor concentrations can result in central nervous system depression (e.g., drowsiness, dizziness, loss of coordination, and fatigue).

Ingestion:

Ingestion of large quantities may cause irritation of the digestive tract, nervous system depression (e.g., drowsiness, dizziness, loss of coordination, and fatigue).

Toxicity to Animals:

Ethanol	LD ₅₀ (oral rat) 9000 mg/kg Draize test, rabbit eye 500 mg/24 hours Mild LC ₅₀ (inhl rat) 20000, 10 hours
n-Pentane	LC ₅₀ (inhl rat) 364000 mg/m ³ , 4 hours
n-Hexane	LD ₅₀ (oral rat) 25000 mg/kg LC ₅₀ (inhl rat) 48000, 4 hours
Isopropanol	LD ₅₀ (oral rat) 5000 mg/kg LD ₅₀ (dermal rabbit) 12800 mg/kg LC ₅₀ (inhl rat) 12000, 8 hours

Chronic Exposure:

Reproductive Toxicity: No data available.

Mutagenicity: No data available

Teratogenicity: No data available

Specific Target Organ Toxicity (STOT) No end point data.

Toxicologically Synergistic Products: Not available.

Carcinogenic Status: This substance has not been identified as a carcinogen or probable carcinogen by NTP, IARC, or OSHA, nor have any of its components. ACGIH classifies a component, n-hexane as Class A4, not classifiable for human or animal and IARC classifies it as Class 3, not classifiable for human.

12. Ecological Information

12.1 Toxicity:

Ecotoxicity:	No information available. Toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.
Aquatic Toxicity:	
n-Hexane	96 h LC ₅₀ Fathead Minnow (fish) 2.5 mg/l 48 h EC ₅₀ Daphnia magna (water flea) 3,878 mg/l

Isopropanol

3 h EC₅₀ Fresh water algae 12,840 mg/l
 96 h LC₅₀ Fathead Minnow (fish)> 1000 µl/l
 48 h LC₅₀ Golden Orfe 8970 - 9280 mg/l
 96 h LC₅₀ Daphnid (crustacean)> 1000 µl/l

12.2 Persistence and degradability: No information available
12.3 Bioaccumulation potential: No information available
12.4 Mobility in soil: No information available
12.5 Results of PBT and vPvB Assessment: This product is not, nor does it contain a substance that is a PBT or vPvB.
12.6 Other adverse effects: None known.

13. Disposal Considerations

Dispose of product in accordance with National and Local Regulations.

14. Transport Information

UN Number: 1950
UN Proper shipping name: AEROSOLS, Flammable, less than 1 liter each, Class 2.1, LTD QTY
Transport hazard class(es): Class 2.1
Packing group: Not Applicable
Environmental hazards: None known
Special precautions: None known
TDG: Not Regulated
ICAO/IATA-DGR: Consumer Commodity, ID 8000, Class 9, LTD QTY, Per S.P. A112
IMDG: UN 1950, AEROSOLS, Flammable, less than 1 liter each, Class 2.1, LTD QTY

15. Regulatory Information

15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture

USA Federal and State

All components are listed on the TSCA inventory.

Hazard Categories for SARA Section 311/312 Reporting	Acute Yes	Chronic No	Fire Yes	Pressure No	Reactive No
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Components	CERCLA/SARA Sec 302 Hazardous Substance RQ	EHS TPQ	SARA Sec. 313 Toxic Release
n-Hexane	Yes (5000 lbs.)	No	Yes (1%)

NFPA Ratings: Health: 1
 Fire: 3
 Reactivity: 0

National Fire Protection Association (NFPA) hazard ratings are designed for use by emergency response personnel during spill, fire or similar emergencies. Hazard ratings are based on physical and toxic properties of combustion or decomposition.

California Proposition 65

WARNING: This product can expose you to chemicals including n-hexane which is known to the state of California to cause birth defects or other reproductive harm. For more information, go to www.p65warnings.ca.gov.

European Union

Product complies with the communication requirements of REACH Regulation (EC) No. 1907/2006. All components are listed on the European Inventory of Existing Chemical Substances (EINECS). Contains no substance on the REACH candidate list $\geq 0.1\%$ SCL. Does not contain notified substances from the ELINCS List, Directive 92/32/EEC. Contains no REACH substances with Annex XVII restrictions.

Canada

All components are listed on the DSL inventory.

This product has been classified according to the hazard criteria of the CPR and the SDS contains all the information required by the CPR.

Australia

All components are listed on the AICS.

Hazardous according to criteria of NOHSC Australia.

15.2 Chemical Safety Assessment

No chemical safety assessment has been carried out for the mixture by the supplier.

16. Other Information

Abbreviations and acronyms:

OSHA = Occupational Safety and Health Administration

CLP = Classification, Labeling and Packaging Regulation

STOT = Specific Target Organ Toxicity

LD₅₀ = Median Lethal Dose

DNEL = Derived No Effect Level

ACGIH = American Conference of Governmental Industrial Hygienists

TSCA = Toxic Substances Control Act (USA)

DSL = Domestic Substances List (Canada)

AICS = Australian Inventory of Chemical Substances

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Indication of Changes:	Section 14 updated. Written in accordance with the provisions of OSHA 1910.1200 App D (2012) and Canada HPR (SOR/2015-17) (WHMIS 2015). (GHS format)

The information and recommendations contained herein are believed to be reliable. However, the supplier makes no warranties, express or implied, concerning the use of this product. The buyer must determine conditions of safe usage and assumes all risk and liability in handling this product.