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1. IDENTIFICATION

Product name:	ELECTRODAGPF-407C	IDH number:	1225950
Product type/	PTF ink		
Recommended use:		Region:	United States
Restriction of Use:	None identified	Contact information:	
Company address:		Telephone:	+1 (860) 571-5100
Henkel Corporation		MEDICAL EMERGENCY Phone:	Poison Control Center
One Henkel Way			1-877-671-4608 (toll free) or 1-303-592-1711
Rocky Hill, Connecticut 06067		TRANSPORT EMERGENCY Phone:	CHEMTREC
			1-800-424-9300 (toll free) or 1-703-527-3887
		MEDICAL EMERGENCY Phone:	Poison Control Center
			1-877-671-4608 (toll free) or 1-303-592-1711
		TRANSPORT EMERGENCY Phone:	CHEMTREC
			1-800-424-9300 (toll free) or 1-703-527-3887
		Internet:	www.henkelna.com

2. HAZARDS IDENTIFICATION

EMERGENCY OVERVIEW	
WARNING:	H227 - COMBUSTIBLE LIQUID. H302 - HARMFUL IF SWALLOWED. H319 - CAUSES SERIOUS EYE IRRITATION.

HAZARD CLASS	HAZARD CATEGORY
FLAMMABLE LIQUID	4
ACUTE TOXICITY ORAL	4
EYE IRRITATION	2A



Precautionary Statements

Prevention:	P210 - Keep away from heat, sparks, open flames, hot surfaces - no smoking. P264 - Wash affected area thoroughly after handling. P270 - Do not eat, drink or smoke when using this product.
Response:	P280 - Wear protective gloves, clothing, eye and face protection. P301+P312+P330 - IF SWALLOWED: Call a POISON CENTER or doctor/ physician if you feel unwell. Rinse mouth. P305+P351+P338 - IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. P337+P313 - If eye irritation persists: Get medical attention. P370+P378 - In case of fire: Use foam, dry chemical or carbon dioxide to extinguish.
Storage:	P403 - Store in a well-ventilated place.
Disposal:	P501 - Dispose of contents and/or container according to Federal, State/Provincial and local governmental regulations.

Other hazards Not available.

Classification complies with OSHA Hazard Communication Standard (29 CFR 1910.1200) and is consistent with the provisions of the United Nations Globally Harmonized System of Classification and Labeling of Chemicals (GHS).

See Section 11 for additional toxicological information.

3. COMPOSITION / INFORMATION ON INGREDIENTS

Hazardous Component(s)	CAS Number	Weight %*
Diethylene glycol monobutyl ether	112-34-5	30 - 60
Butoxyethyl acetate	112-07-2	10 - 30
Graphite	7782-42-5	10 - 30
Carbon black - Nano	1333-86-4	5 - 10
2-Butoxyethanol	111-76-2	0.1 - 1

* Exact percentages may vary or are trade secret. Concentration range is provided to assist users in providing appropriate protections.

4. FIRST AID MEASURES

First Aid Measures by likely routes of exposure

Inhalation:	If inhaled, immediately remove the affected person to fresh air. If symptoms develop and persist, get medical attention.
Skin contact:	Remove contaminated clothing and footwear. Immediately flush skin with plenty of water (using soap, if available). If symptoms develop and persist, get medical attention. Wash clothing before reuse.
Eye contact:	Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. Get medical attention.
Ingestion:	DO NOT induce vomiting unless directed to do so by medical personnel. Get medical attention.
Most important symptoms and effects (acute and delayed):	The most important known symptoms and effects, both acute and delayed, are described in Section 11: Toxicological Information.
Indication of any immediate medical attention / special treatment needed:	Treat symptomatically and supportively.

5. FIRE FIGHTING MEASURES

Extinguishing media:	Water spray (fog), foam, dry chemical or carbon dioxide.
Improper extinguishing agents:	Not available.
Special firefighting procedures:	Wear self-contained breathing apparatus and full protective clothing, such as turn-out gear. In case of fire, keep containers cool with water spray.
Unusual fire or explosion hazards:	This product is combustible at high temperatures. Closed containers may rupture (due to build up of pressure) when exposed to extreme heat.
Hazardous combustion products:	Upon decomposition, this product emits carbon monoxide, carbon dioxide and/or low molecular weight hydrocarbons. Oxides of nitrogen.

6. ACCIDENTAL RELEASE MEASURES

Use personal protection recommended in Section 8, isolate the hazard area and deny entry to unnecessary and unprotected personnel.

Environmental precautions:	Eliminate ignition sources including sources of electrical, static or frictional sparks. Do not allow product to enter sewer or waterways. Wear appropriate protective equipment and clothing during clean-up. Prevent further leakage or spillage if safe to do so. Ventilate area.
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Clean-up methods:

Absorb spill with inert material. Shovel material into appropriate container for disposal. Dispose of according to Federal, State and local governmental regulations.

7. HANDLING AND STORAGE

Handling:

Use only with adequate ventilation. Prevent contact with eyes, skin and clothing. Do not breathe vapor and mist. Wash thoroughly after handling. For industrial use only. Wash thoroughly after handling. Ground and bond all equipment as required (when transferring products).

Storage:

For safe storage, store between -20 °C (-4°F) and 50 °C (122°F) Keep away from heat, spark and flame. Keep container closed. Storage within given temperature limit Store in original container until ready to use. Keep out of reach of children and away from food and drink. Protect from direct sunlight.

For information on product shelf life, please review labels on container or check the Technical Data Sheet.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

Employers should complete an assessment of all workplaces to determine the need for, and selection of, proper exposure controls and protective equipment for each task performed.

Hazardous Component(s)	ACGIH TLV	OSHA PEL	AIHA WEEL	OTHER
Diethylene glycol monobutyl ether	10 ppm TWA Inhalable fraction and vapor.	None	None	50 ppm TWA 75 ppm STEL
Butoxyethyl acetate	20 ppm TWA	None	None	None
Graphite	2 mg/m3 TWA Respirable fraction.	5 mg/m3 PEL Respirable fraction. 15 mg/m3 PEL Total dust. 5 mg/m3 PEL Respirable fraction. 15 mg/m3 PEL Total dust.	None	None
Carbon black - Nano	3 mg/m3 TWA Inhalable fraction.	3.5 mg/m3 PEL 5 mg/m3 TWA Respirable fraction. 50 MPPCF TWA Total dust. 15 MPPCF TWA Respirable fraction. 15 mg/m3 TWA Total dust.	None	None
2-Butoxyethanol	20 ppm TWA	50 ppm (240 mg/m3) PEL (SKIN)	None	None

Engineering controls:

Ventilation should effectively remove and prevent buildup of any vapor/mist/fume/dust generated from the handling of this product.

Respiratory protection:

When dusts or thermal processing fumes are generated and ventilation is not sufficient to effectively remove them, appropriate NIOSH/MSHA approved respiratory protection must be provided.

Eye/face protection:

Safety goggles or safety glasses with side shields. Full face protection should be used if the potential for splashing or spraying of product exists. Safety showers and eye wash stations should be available.

Skin protection:

Use impermeable gloves and protective clothing as necessary to prevent skin contact. Wear impervious gloves for prolonged contact.

9. PHYSICAL AND CHEMICAL PROPERTIES

Physical state:

Liquid

Color:

Black

Odor:

Mild

Odor threshold:

Not available.

pH:

Not applicable, Product is non-soluble (in water).

Vapor pressure:

< 1 hPa (20 °C (68°F))

Boiling point/range:	> 186.0 °C (> 366.8 °F)
Melting point/ range:	Not applicable, Product is a liquid
Density/Relative density:	1.13
Relative vapor density:	5.5000 20 °C (Air = 1)
Flash point:	78 °C (172.4 °F)
Flammable/Explosive limits - lower:	0.7 % 0.85 %
Flammable/Explosive limits - upper:	26.4 %
Autoignition temperature:	204 °C (399.2 °F)
Flammability:	The product is not flammable.
Evaporation rate:	Less than butyl acetate.
Solubility:	Insoluble Water
Partition coefficient n-octanol/water (logarithmic value):	Not available.
VOC content:	711 g/l
Dynamic viscosity:	35,000 - 50,000 cp
Kinematic viscosity:	> 10,000 mm ² /s
Particle characteristics:	Not applicable, Product is a liquid
Decomposition temperature:	Not available.

10. STABILITY AND REACTIVITY

Stability:	Stable under normal conditions of storage and use.
Hazardous reactions:	Not applicable
Hazardous decomposition products:	Oxides of nitrogen. Upon decomposition, this product emits carbon monoxide, carbon dioxide and/or low molecular weight hydrocarbons.
Incompatible materials:	This product may react with strong acids, bases and oxidizing agents.
Reactivity:	Not available.
Conditions to avoid:	Keep away from heat, ignition sources and incompatible materials.

11. TOXICOLOGICAL INFORMATION

Likely routes of exposure:	Skin, Inhalation, Eyes, Ingestion
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Potential Health Effects/Symptoms

Inhalation: May cause respiratory tract irritation.
Skin contact: May cause skin irritation.
Eye contact: Causes serious eye irritation.
Ingestion: Not expected under normal conditions of use. Ingestion can cause gastrointestinal irritation, nausea, vomiting and diarrhea. Harmful if swallowed.

Hazardous Component(s)	LD50s and LC50s
Diethylene glycol monobutyl ether	Oral LD50 (Rabbit) = 2,200 mg/kg Oral LD50 (Rat) = 4,500 mg/kg Oral LD50 (Rat) = 5,660 mg/kg Oral LD50 (Rat) = 7,292 mg/kg Oral LD50 (Mouse) = 2,400 mg/kg Oral LD50 (Rat) = 6,600 mg/kg Oral LD50 (Rat) = 6,560 mg/kg Dermal LD50 (Rabbit) = 2,700 mg/kg Dermal LD50 (Rabbit) = 4,120 mg/kg
Butoxyethyl acetate	Oral LD50 (Rat) = 2,400 mg/kg Oral LD50 (Rat) = 3,000 mg/kg Dermal LD50 (Rabbit) = 1,500 mg/kg
Graphite	Inhalation LC50 (Rat, 4 h) = > 2,000 mg/m3 Inhalation LC50 (Rat, 4 h) = > 2,000 mg/m3
Carbon black - Nano	Oral LD50 (Rat) = > 8,000 mg/kg
2-Butoxyethanol	Oral LD50 (Rat) = 560 mg/kg Oral LD50 (Mouse) = 1.2 g/kg Oral LD50 (Rabbit) = 0.32 g/kg Oral LD50 (Rat) = 1.48 g/kg Oral LD50 (Mouse) = 1,519 mg/kg Dermal LD50 (Rabbit) = 400 mg/kg Inhalation LC50 (Rat, 4 h) = 523 ppm Inhalation LC50 (Rat, 4 h) = 545 ppm

Hazardous Component(s)	Immediate Health Effects	Delayed Health Effects	Chronic Health Effects
Diethylene glycol monobutyl ether	Irritant		Blood Central nervous system Kidney
Butoxyethyl acetate	Irritant		Behavioral Blood Bone Marrow Central nervous system Kidney Liver Lung
Graphite			Lung
Carbon black - Nano			
2-Butoxyethanol	Irritant		Blood Central nervous system Kidney Liver

Hazardous Component(s)	NTP Carcinogen	IARC Carcinogen	OSHA Carcinogen (Specifically Regulated)
Diethylene glycol monobutyl ether	No	No	No
Butoxyethyl acetate	No	No	No
Graphite	No	No	No
Carbon black - Nano	Known To Be Human Carcinogen.	Group 2B	No
2-Butoxyethanol	No	No	No

12. ECOLOGICAL INFORMATION

Ecological information: Not available.

13. DISPOSAL CONSIDERATIONS

Information provided is for unused product only.

Recommended method of disposal: Follow all local, state, federal and provincial regulations for disposal.

14. TRANSPORT INFORMATION

The transport information provided in this section only applies to the material/formulation itself, and is not specific to any packaging.

U.S. Department of Transportation Ground (49 CFR)

Proper shipping name: Combustible liquid, n.o.s. (2-Butoxyethyl acetate)
Hazard class or division: Combustible Liquid
Identification number: NA 1993
Packing group: III

International Air Transportation (ICAO/IATA)

Proper shipping name: Not regulated
Hazard class or division: None
Identification number: None
Packing group: None

Water Transportation (IMO/IMDG)

Proper shipping name: Not regulated
Hazard class or division: None
Identification number: None
Packing group: None

15. REGULATORY INFORMATION

United States Regulatory Information

TSCA 8 (b) Inventory Status: All components are listed as active or are exempt from listing on the Toxic Substances Control Act (TSCA) inventory.
TSCA 12 (b) Export Notification: None above reporting de minimis.
CERCLA/SARA Section 302 EHS: None above reporting de minimis.
CERCLA/SARA Section 311/312: Please refer to the GHS classification in Section 2
CERCLA/SARA Section 313: 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 of 1986 (40 CFR 372). Diethylene glycol monobutyl ether (CAS# 112-34-5). Butoxyethyl acetate (CAS# 112-07-2). 2-Butoxyethanol (CAS# 111-76-2).
California Proposition 65: This product contains a chemical known in the State of California to cause cancer.

Canada Regulatory Information

CEPA DSL/NDSL Status: All components are listed on or are exempt from listing on the Canadian Domestic Substances List.

16. OTHER INFORMATION

This safety data sheet contains changes from the previous version in sections: 3,8,15

Prepared by: Product Safety and Regulatory Affairs

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