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1. PRODUCT AND COMPANY IDENTIFICATION

Product name: LOCTITE EDAG 440 AS E&C known as **IDH number:** 1238804
ELECTRODAG 440 AS 5 KG

Product type: Coating
Restriction of Use: None identified
Company address: United States
Henkel Electronic Materials LLC
14000 Jamboree Road
Irvine, CA 92606

Contact information:
Telephone: +1 (888) 943-6535
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.henkel.com/electronics

2. HAZARDS IDENTIFICATION**EMERGENCY OVERVIEW**

DANGER: HIGHLY FLAMMABLE LIQUID AND VAPOR.
CAUSES SKIN IRRITATION.
MAY CAUSE AN ALLERGIC SKIN REACTION.
CAUSES SERIOUS EYE IRRITATION.
MAY CAUSE RESPIRATORY IRRITATION.
MAY CAUSE DROWSINESS OR DIZZINESS.
SUSPECTED OF CAUSING CANCER.

HAZARD CLASS	HAZARD CATEGORY
FLAMMABLE LIQUID	2
SKIN IRRITATION	2
EYE IRRITATION	2A
SKIN SENSITIZATION	1
CARCINOGENICITY	2
SPECIFIC TARGET ORGAN TOXICITY - SINGLE EXPOSURE	3

PICTOGRAM(S)**Precautionary Statements****Prevention:**

Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Keep away from heat, sparks, open flames, hot surfaces - no smoking. Keep container tightly closed. No release into water. Use explosion-proof equipment. Use only non-sparking tools. Take precautionary measures against static discharge. Avoid breathing vapors, mist, or spray. Wash thoroughly after handling. Use only outdoors or in a well-ventilated area. Contaminated work clothing should not be allowed out of the workplace. Wear protective gloves, eye protection, and face protection. Use personal protective equipment as required.

Response:

If on skin (or hair): Take off immediately all contaminated clothing. IF INHALED: Remove person to fresh air and keep comfortable for breathing. IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. IF exposed or concerned: Get medical attention. If skin irritation or rash occurs: Get medical attention. If eye irritation persists: Get medical attention. Take off contaminated clothing. In

Storage: case of fire: Use foam, dry chemical or carbon dioxide to extinguish.
Store in a well-ventilated place. Keep container tightly closed. Store in a well-ventilated place.
Keep cool. Store locked up.

Disposal: Dispose of contents and/or container according to Federal, State/Provincial and local governmental regulations.

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	Percentage*
Nickel	7440-02-0	30 - 60
n-Butyl acetate	123-86-4	10 - 30
Propanol, 1(or 2)-ethoxy-	52125-53-8	5 - 10
Toluene	108-88-3	5 - 10
Ethanol	64-17-5	1 - 5
Xylenes	1330-20-7	1 - 5
Ethylbenzene	100-41-4	0.1 - 1
Methyl methacrylate	80-62-6	0.1 - 1

* Exact percentage is a trade secret. Concentration range is provided to assist users in providing appropriate protections.

4. FIRST AID MEASURES

Inhalation: Move to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical attention.

Skin contact: Immediately flush skin with plenty of water (using soap, if available). Remove contaminated clothing and footwear. 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. If vomiting occurs, prevent aspiration by keeping the patient's head below the knees. Never give anything by mouth to an unconscious person. Get medical attention.

Symptoms: See Section 11.

5. FIRE FIGHTING MEASURES

Extinguishing media: Carbon dioxide, foam, powder

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: Closed containers may rupture (due to build up of pressure) when exposed to extreme heat. Vapors are heavier than air and may travel along the ground or be moved by ventilation and subsequently ignited by heat, pilot lights or other ignition sources at locations distant from the material handling point.

Hazardous combustion products:

Oxides of carbon. Oxides of Metals in Section 2. Toxic and irritating vapors.

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:

Do not allow product to enter sewer or waterways.

Clean-up methods:

Remove all sources of ignition. Ensure adequate ventilation. Isolate area. Keep unnecessary personnel away. Soak up with inert absorbent material (e.g. sand, silica gel, acid binder, universal binder, sawdust). Store in a closed container until ready for disposal. Refer to Section 8 "Exposure Controls / Personal Protection" prior to clean up.

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. Refer to Section 8.

Storage:

For safe storage, store between 5 °C (41°F) and 30 °C (86°F)
Store away from heat, sparks, flames, or other sources of ignition. Keep out of direct sunlight. Keep closed in a cool, dry area. Keep container closed. Store in original container until ready to use.

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
Nickel	1.5 mg/m ³ TWA Inhalable fraction.	1 mg/m ³ PEL (as Ni)	None	None
n-Butyl acetate	150 ppm TWA 200 ppm STEL	150 ppm (710 mg/m ³) PEL	None	None
Propanol, 1(or 2)-ethoxy-	None	None	None	None
Toluene	20 ppm TWA	200 ppm TWA 300 ppm Ceiling 500 ppm MAX. CONC 10 minutes	None	None
Ethanol	1,000 ppm STEL	1,000 ppm (1,900 mg/m ³) PEL	None	None
Xylenes	100 ppm TWA 150 ppm STEL	100 ppm (435 mg/m ³) PEL	None	None
Ethylbenzene	20 ppm TWA	100 ppm (435 mg/m ³) PEL	None	None
Methyl methacrylate	50 ppm TWA 100 ppm STEL (Dermal sensitization)	100 ppm (410 mg/m ³) PEL	None	50 ppm

Engineering controls:

Provide adequate local exhaust ventilation to maintain worker exposure below exposure limits. Use explosion-proof mechanical ventilation and local exhaust to control contaminants to within their occupational exposure limits during the use of this product.

Respiratory protection:

Use a NIOSH approved air-purifying respirator if the potential to exceed established exposure limits exists.

Eyeface 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 chemical resistant, impermeable clothing including gloves and either an apron or body suit to prevent skin contact.

9. PHYSICAL AND CHEMICAL PROPERTIES

Physical state:	Liquid
Color:	Gray
Odor:	Solvent
Odor threshold:	Not available.
pH:	Not applicable
Vapor pressure:	Not available.
Boiling point/range:	110 °C (230°F)
Melting point/ range:	Not available.
Specific gravity:	2.025
Vapor density:	Not available.
Flash point:	17 °C (62.6 °F)
Flammable/Explosive limits - lower:	1.2 %
Flammable/Explosive limits - upper:	19 %
Autoignition temperature:	Not available.
Evaporation rate:	Not available.
Solubility in water:	Insoluble
Partition coefficient (n-octanol/water):	Not available.
VOC content:	30 % (calculated)
Viscosity:	4,500 - 7,000 mPa.s
Decomposition temperature:	Not available.

10. STABILITY AND REACTIVITY

Stability:	Stable at normal conditions.
Hazardous reactions:	None under normal processing.
Hazardous decomposition products:	Upon decomposition, this product emits carbon monoxide, carbon dioxide and/or low molecular weight hydrocarbons.
Incompatible materials:	Strong acids and oxidizing agents.
Reactivity:	Not available.
Conditions to avoid:	Heat, flames, sparks and other sources of ignition. This product may react with strong acids or oxidizing agents.

11. TOXICOLOGICAL INFORMATION

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

Inhalation:	May cause respiratory tract irritation. May cause central nervous system effects with nausea, dizziness and headache. Drowsiness.
Skin contact:	Causes skin irritation. May cause allergic skin reaction.
Eye contact:	Causes serious eye irritation.
Ingestion:	May cause gastrointestinal tract irritation if swallowed. May cause an aspiration hazard if swallowed. Aspirated material can enter lungs and cause damage.

Hazardous Component(s)	LD50s and LC50s	Immediate and Delayed Health Effects
Nickel	None	No Data
n-Butyl acetate	Oral LD50 (RAT) = 14,000 mg/kg Oral LD50 (RAT) = 14,130 mg/kg Inhalation LC50 (, 4 h) = 160 mg/l	Irritant, Central nervous system
Propanol, 1(or 2)-ethoxy-	None	Central nervous system, Irritant, Kidney
Toluene	Oral LD50 (RAT) = 2.6 g/kg Oral LD50 (RAT) = 5,000 mg/kg Dermal LD50 (RABBIT) = 12,124 mg/kg Inhalation LC50 (RAT, 1 h) = 26700 ppm Inhalation LC50 (RAT, 2 h) = 12200 ppm Inhalation LC50 (RAT, 4 h) = 8000 ppm	Behavioral, Cardiac, Central nervous system, Developmental, Ear, Irritant
Ethanol	Oral LD50 (RAT) = 9.9 g/kg Oral LD50 (RAT) = 6.2 g/kg Oral LD50 (RAT) = 17.8 g/kg Oral LD50 (RAT) = 11.5 g/kg Oral LD50 (RAT) = 10.6 g/kg Oral LD50 (RAT) = 7,060 mg/kg Inhalation LC50 (RAT, 10 h) = 20000 ppm	Central nervous system, Irritant
Xylenes	Oral LD50 (RAT) = 6,670 mg/kg Oral LD50 (RAT) = 3,523 - 8,600 mg/kg Oral LD50 (RAT) = 4,300 mg/kg Dermal LD50 (RABBIT) = > 43 g/kg Inhalation LC50 (RAT, 4 h) = 6,350 mg/l	Cardiac, Central nervous system, Irritant, Kidney, Liver
Ethylbenzene	Oral LD50 (RAT) = 5.46 g/kg Oral LD50 (RAT) = 3,500 mg/kg Dermal LD50 (RABBIT) = 17,800 mg/kg	Irritant, Central nervous system
Methyl methacrylate	Oral LD50 (RAT) = 7,800 mg/kg Oral LD50 (RABBIT) = 6,000 mg/kg Oral LD50 (RAT) = 9,400 mg/kg Inhalation LC50 (RAT, 8 h) = 3750 ppm	Allergen, Irritant, Kidney, Liver, Mutagen, Nervous System, Respiratory

Hazardous Component(s)	NTP Carcinogen	IARC Carcinogen	OSHA Carcinogen (Specifically Regulated)
Nickel	Reasonably Anticipated to be a Human Carcinogen.	Group 2B	No
n-Butyl acetate	No	No	No
Propanol, 1(or 2)-ethoxy-	No	No	No
Toluene	No	No	No
Ethanol	No	No	No
Xylenes	No	No	No
Ethylbenzene	No	Group 2B	No
Methyl methacrylate	No	No	No

12. ECOLOGICAL INFORMATION

Ecological information: No data 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.

Hazardous waste number: If discarded, this product is considered a RCRA ignitable waste, D001. This product may contain traces of: D018: Benzene (Check TCLP Level).

14. TRANSPORT INFORMATION

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

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

Proper shipping name: Flammable liquids, n.o.s. (n-Butylacetate, Toluene)
Hazard class or division: 3
Identification number: UN 1993
Packing group: II
DOT Hazardous Substance(s): Nickel, Xylene (mixed)

International Air Transportation (ICAO/IATA)

Proper shipping name: Flammable liquid, n.o.s. (n-Butylacetate, Toluene)
Hazard class or division: 3
Identification number: UN 1993
Packing group: II

Water Transportation (IMO/IMDG)

Proper shipping name: FLAMMABLE LIQUID, N.O.S. (n-Butylacetate, Toluene)
Hazard class or division: 3
Identification number: UN 1993
Packing group: II

15. REGULATORY INFORMATION

United States Regulatory Information

TSCA 8 (b) Inventory Status: All components are listed or are exempt from listing on the Toxic Substances Control Act 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: Immediate Health, Delayed Health, Fire

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). Nickel (CAS# 7440-02-0). Toluene (CAS# 108-88-3). Xylenes (CAS# 1330-20-7). Ethylbenzene (CAS# 100-41-4).

CERCLA Reportable quantity: Nickel (CAS# 7440-02-0) 100 lbs. (45.4 kg)
n-Butyl acetate (CAS# 123-86-4) 5,000 lbs. (2,270 kg)
Toluene (CAS# 108-88-3) 1,000 lbs. (454 kg)
Ethanol (CAS# 64-17-5) 100 lbs. (45.4 kg)
Xylenes (CAS# 1330-20-7) 100 lbs. (45.4 kg)

California Proposition 65: This product contains a chemical known in the State of California to cause cancer. This product contains a chemical known to the State of California to cause birth defects or other reproductive harm.

Canada Regulatory Information

CEPA DSL/NDL 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: New Safety Data Sheet format.

Issue date: 05/04/2023

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