Revision Number: 007.0

Issue date: 02/19/2025

1. IDENTIFICATION

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

IDH number: 1238804

Product type/ Recommended use: EMC product

Restriction of Use: None identified

Region: United States

Company address:
Henkel Corporation
One Henkel Way
Rocky Hill, Connecticut 06067

Contact information:
Telephone: +1 (860) 571-5100
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
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

DANGER:

H225 - HIGHLY FLAMMABLE LIQUID AND VAPOUR.
H315 - CAUSES SKIN IRRITATION.
H317 - MAY CAUSE AN ALLERGIC SKIN REACTION.
H319 - CAUSES SERIOUS EYE IRRITATION.
H336 - MAY CAUSE DROWSINESS OR DIZZINESS.
H351 - SUSPECTED OF CAUSING CANCER.
H361 - SUSPECTED OF DAMAGING FERTILITY OR THE UNBORN CHILD.
H372 - CAUSES DAMAGE TO ORGANS THROUGH PROLONGED OR REPEATED EXPOSURE.

H373 - MAY CAUSE DAMAGE TO ORGANS THROUGH PROLONGED OR REPEATED EXPOSURE.

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

PICTOGRAM(S)

Precautionary Statements

Prevention:

P201 - Obtain special instructions before use.
P202 - Do not handle until all safety precautions have been read and understood.
P210 - Keep away from heat, sparks, open flames, hot surfaces - no smoking.

	P233 - Keep container tightly closed. P240 - Ground and bond container and receiving equipment. P241 - Use explosion-proof equipment. P242 - Use non-sparking tools. P243 - Take action to prevent static discharges. P260 - Do not breathe vapors, mist, or spray. P264 - Wash affected area thoroughly after handling. P270 - Do not eat, drink or smoke when using this product. P271 - Use only outdoors or in a well-ventilated area. P272 - Contaminated work clothing should not be allowed out of the workplace. P280 - Wear protective gloves, clothing, eye and face protection.
Response:	P303+P361+P353 - If on skin (or hair): Take off immediately all contaminated clothing. P304+P340+P312 - IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing. Call a POISON CENTER or physician if you feel unwell. P305+P351+P338 - IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. P308+P313 - IF exposed or concerned: Get medical attention. P333+P313 - If skin irritation or rash occurs: Get medical attention. P337+P313 - If eye irritation persists: Get medical attention. P362+P364 - Take off contaminated clothing and wash it before reuse. P370+P378 - In case of fire: Use foam, dry chemical or carbon dioxide to extinguish.
Storage:	P403+P233 - Store in a well-ventilated place. Keep container tightly closed. P403+P235 - Store in a well-ventilated place. Keep cool. P405 - Store locked up.
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 %*
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
Silane, dichlorodimethyl-, reaction products with silica	68611-44-9	1 - 5
Xylenes	1330-20-7	1 - 5
Ethylbenzene	100-41-4	0.1 - 1
Methyl methacrylate	80-62-6	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: 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. Thoroughly clean shoes 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. 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.
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:	Not available.

5. FIRE FIGHTING MEASURES

Extinguishing media:	Carbon dioxide, foam, powder
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:	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 3. 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. Evacuate and ventilate spill area; dike spill to prevent entry into water system; wear full protective equipment during clean-up. Refer to Section 8 "Exposure Controls / Personal Protection" prior to clean up. Soak up with inert absorbent material (e.g. sand, silica gel, acid binder, universal binder, sawdust). Scrape up spilled material and place in a closed container for disposal.

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. Keep container closed.
Storage:	For safe storage, store between 5 °C (41°F) and 30 °C (86°F) Keep container tightly closed and in a cool, well-ventilated place away from incompatible materials. Store away from heat, sparks, flames, or other sources of ignition. Keep out of 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
Nickel	1.5 mg/m3 TWA Inhalable fraction.	1 mg/m3 PEL (as Ni)	None	None
n-butyl acetate	50 ppm TWA 150 ppm STEL	150 ppm (710 mg/m3) PEL	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/m3) PEL	None	None
Silane, dichlorodimethyl-, reaction products with silica	3 mg/m3 TWA Respirable particles. 10 mg/m3 TWA Inhalable particles.	0.8 mg/m3 TWA 20 MPPCF TWA 50 MPPCF TWA Total dust. 15 mg/m3 TWA Total dust. 5 mg/m3 TWA Respirable fraction. 15 MPPCF TWA Respirable fraction.	None	None
Xylenes	20 ppm TWA	100 ppm (435 mg/m3) PEL	None	None
Ethylbenzene	20 ppm TWA	100 ppm (435 mg/m3) PEL	None	None
Methyl methacrylate	50 ppm TWA 100 ppm STEL (Dermal sensitization)	100 ppm (410 mg/m3) 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.

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 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 / Grey
Odor: Solvent
Odor threshold: Not available.
pH: Not applicable, Product is non-soluble (in water).
Vapor pressure: < 30 hPa (20 °C (68°F)) < 150 hPa (50 °C (122°F))
Boiling point/range: > 100 °C (> 212°F)
Melting point/ range: Not applicable, Product is a liquid
Density/Relative density: 2.025
Relative vapor density: > 1 20 °C
Flash point: 17 °C (62.6 °F)
Flammable/Explosive limits - lower: 1.2 %
Flammable/Explosive limits - upper: 19 %
Autoignition temperature: Not available.
Flammability: Flammable liquid
Evaporation rate: Not available.
Solubility: Insoluble Water
Partition coefficient n-octanol/water (logarithmic value): Not available.

VOC content:	30 % (calculated)
Dynamic viscosity:	4,500 - 7,000 mPa.s
Kinematic viscosity:	> 1,000 mm2/s
Particle characteristics:	Not applicable, Product is a liquid
Decomposition temperature:	Not available.

10. STABILITY AND REACTIVITY

Stability:	Stable at normal conditions.
Hazardous reactions:	None under normal processing.
Hazardous decomposition products:	Oxides of carbon. Oxides of Metals in Section 3. Toxic fumes. Irritating vapors.
Incompatible materials:	Strong acids and oxidizing agents.
Reactivity:	Not available.
Conditions to avoid:	Keep away from heat, ignition sources and incompatible materials. Protect from direct sunlight.

11. TOXICOLOGICAL INFORMATION

Likely routes of exposure:	Skin, Inhalation, Eyes, Ingestion

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. Not expected under normal conditions of use. May cause an aspiration hazard if swallowed. Aspirated material can enter lungs and cause damage. This product contains nanoparticles. The particle size-related health effects of nanoparticles have not been fully investigated.

Hazardous Component(s)	LD50s and LC50s
Nickel	None
n-butyl acetate	Oral LD50 (Rat) = 14,000 mg/kg Oral LD50 (Rat) = 14,130 mg/kg Inhalation LC50 (Rat, 4 h) = > 21 mg/l Inhalation LC50 (Rat, 4 h) = > 23.4 mg/l Inhalation LC50 (Rat, 4 h) = > 6.6 mg/l Inhalation LC50 (Rat, 4 h) = 0.74 mg/l Inhalation LC50 (Rat, 4 h) = 1.802 mg/l Inhalation LC50 (Rat, 4 h) = > 4.9 mg/l Inhalation LC50 (Rat, 4 h) = 1109 ppm Inhalation LC50 (Rat, 4 h) = 1087 ppm Inhalation LC50 (Rat, 4 h) = > 71.5 mg/l Inhalation LC50 (Rat, 4 h) = > 21.1 mg/l Inhalation LC50 (Rat, 4 h) = 1096 ppm
Propanol, 1(or 2)-ethoxy-	None
Toluene	Oral LD50 (Rat) = 2.6 g/kg Dermal LD50 (Rabbit) = 12,124 mg/kg Inhalation LC50 (Rat, 4 h) = 12.5 - 28.8 mg/l Inhalation LC50 (Rat, 4 h) = 25.7 mg/l Inhalation LC50 (Rat, 4 h) = 28.1 mg/l Inhalation LC50 (Rat, 4 h) = 30 mg/l
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 (Mouse) = 3,450 mg/kg Oral LD50 (Rat) = 10.6 g/kg Oral LD50 (Rat) = 7,060 mg/kg Inhalation LC50 (Rat, 4 h) = 133.8 mg/l Inhalation LC50 (Rat, 4 h) = 124.7 mg/l Inhalation LC50 (Rat, 4 h) = > 115.9 mg/l Inhalation LC50 (Rat, 4 h) = 130.7 mg/l Inhalation LC50 (Rat, 4 h) = 128.2 mg/l Inhalation LC50 (Rat, 4 h) = 116.9 mg/l Inhalation LC50 (Mouse, 4 h) = 39 mg/l
Silane, dichlorodimethyl-, reaction products with silica	None
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) = 6580 ppm Inhalation LC50 (Rat, 4 h) = 6247 ppm Inhalation LC50 (Rat, 4 h) = 5922 ppm Inhalation LC50 (Rat, 4 h) = 6700 ppm Inhalation LC50 (Rat, 4 h) = 6350 ppm
Ethylbenzene	Oral LD50 (Rat) = 5.46 g/kg Oral LD50 (Rat) = 3,500 mg/kg Dermal LD50 (Rabbit) = 17,800 mg/kg Inhalation LC50 (Rat, 4 h) = 4000 ppm
Methyl methacrylate	Oral LD50 (Rat) = 7,800 mg/kg Oral LD50 (Rabbit) = 6,000 mg/kg Oral LD50 (Rat) = 9,400 mg/kg

Hazardous Component(s)	Immediate Health Effects	Delayed Health Effects	Chronic Health Effects
Nickel			
n-butyl acetate	Irritant		Central nervous system
Propanol, 1(or 2)-ethoxy-	Irritant		Central nervous system Kidney

Toluene	Irritant		Behavioral Cardiac Central nervous system Developmental Ear
Ethanol	Irritant		Central nervous system
Silane, dichlorodimethyl-, reaction products with silica			
Xylenes	Irritant		Cardiac Central nervous system Kidney Liver
Ethylbenzene	Irritant		Central nervous system
Methyl methacrylate	Irritant	Allergen	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	Known To Be Human Carcinogen.	Group 1	No
Silane, dichlorodimethyl-, reaction products with silica	No	No	No
Xylenes	No	No	No
Ethylbenzene	No	Group 2B	No
Methyl methacrylate	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: 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 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). 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/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: 1,9,11

Prepared by: Product Safety and Regulatory Affairs

Issue date: 02/19/2025

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