

SDS

In compliance with HCS/HazCom 2012



SAFETY DATA SHEET

Product: EP310N-A

Revision: 00

Date: 9/13/2021

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1 - IDENTIFICATION

Product identifier	EP310N-A
Product code	QKW5-1YTH-N5NU-Y2FD
Recommended use of the chemical and restrictions on use	Adhesive, sealants
Company	Hottinger Brüel & Kjaer
Address	19 Bartlett st. Marlborough, MA 01590
Telephone number	+1.508.804.3268
Emergency telephone number	Chemtrec: 1-800-424-9300. International: 1-703-527-3887
E-mail	support@hbm.com

2 - HAZARDS IDENTIFICATION

Classification of the chemical	Flammable liquids – Category 2 Skin sensitization – Category 1 Serious eye damage/eye irritation – Category 1 Respiratory sensitization – Category 1 Specific target organ toxicity – Single exposure – Category 3 Hazardous to the aquatic environment short-term Acute – Category 3
Signal word	DANGER
Hazard statement(s)	H225 Highly flammable liquid and vapour. H317 May cause an allergic skin reaction. H318 Causes serious eye damage. H334 May cause allergy or asthma symptoms or breathing difficulties if inhaled. H336 May cause drowsiness or dizziness. H402 Harmful to aquatic life.

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Symbol(s)



Precautionary statement(s)

PREVENTION

P210 Keep away from heat, hot surfaces, sparks, open flames, and other sources. No smoking.

P233 Keep container tightly closed.

P240 Ground and bond container and receiving equipment.

P241 Use explosions-proof electrical, ventilating, lighting equipment.

P242 Use non-sparking tools.

P243 Take action to prevent static discharges.

P264 Wash hands thoroughly after handling.

P272 Contaminated work clothing should not be allowed not of the workplace.

P280 Wear protective gloves, protective clothing, eye protection, face protection, hearing protection.

RESPONSE

P303 + P361 + P353 IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water or shower.

P305 + P351 + P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

P342 + P316 If experiencing respiratory symptoms: Get emergency medical help immediately.

P370 + P378 In case of fire: Use water jet or fog, chemical powder, carbon dioxide (CO₂) to extinguish.

DISPOSAL

P501 Dispose of contents and container in accordance with

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Classification system adopted
Other hazards which do not result in classification

current regulations.
Hazard Communication Standard (HCS) 29 CFR: 1910.1200 - Appendix A.
Adoption of the Globally Harmonized System of Classification and Labeling of Chemicals (GHS), United Nations, 8 ed.
The product has no other hazards.

3 – COMPOSITION / INFORMATION ON INGREDIENTS

MIXTURE

Impurities and stabilizing additives contributing to the hazard (%m):

Components	Concentration %	Number CAS	GHS classification*
Acetone; propan-2-one; propanone	90 - < 95%	67-64-1	H225; H319; H336
Benzene-1,2:4,5- tetracarboxylic dianhydride	5 - < 10%	89-32-7	H317; H318; H334; H401

* Hazard statements are described in section 16.

4 - FIRST-AID MEASURES

Inhalation
Skin contact
Eye contact

Remove victim to fresh air and keep at rest in a comfortable position for breathing. Monitor respiratory function. If you feel unwell, contact a POISON CENTER or doctor. Take this SDS.
Wash exposed skin with enough soap and water to remove the material, if necessary, take a shower. Contact a POISON CENTER or doctor immediately. Take this SDS.
Rinse with plenty of water, keeping the eyelids open to eliminate all the product. If using contact lenses, remove them if it is easy. Continue rinsing. If necessary, contact a POISON CENTER or a

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Ingestion	<p>doctor. Take this SDS.</p> <p>Do not induce vomiting. Do not give anything by mouth to an unconscious person. Rinse victim's mouth with plenty of water. If vomiting occurs, tilt the patient forward or place the patient on the left side (if possible upwards) to keep the airway open and prevent aspiration. Keep the patient silent and maintain normal body temperature. Consult a POISON CENTER or doctor. Take this SDS.</p>
Most important symptoms and effects, acute and delayed	<p>Exposure to the product can cause allergic skin reactions with dermatitis and itching. Exposure to the product causes serious eye damage with pain, burning, redness and tearing. May cause allergy or asthma symptoms or breathing difficulties if inhaled. May cause drowsiness or dizziness with cough and sneezes.</p>
Indication of any immediate medical attention and special treatment needed	<p>Avoid contact with the product when helping the victim. Exposure treatment should be directed towards the control of the patient's symptoms and clinical condition. In case of contact with the skin, do not rub the affected area.</p>

5 - FIRE-FIGHTING MEASURES

Extinguishing media	<p>Suitable: Compatible with water jet or fog, foam, chemical powder, carbon dioxide (CO₂).</p> <p>Not suitable: Direct water jets.</p> <p>Extremely dangerous when exposed to excessive heat or other sources of ignition such as sparks, open flames or match and cigarette flames, welding operations, pilot lights and electric motors. May accumulate static charge by flow or agitation.</p>
Specific hazards arising from the chemical product	<p>Vapors of heated liquid may ignite by static discharge. Vapors may be denser than air and tend to accumulate in low or confined areas such as manholes and basements. They can travel long distances, causing the flame to recede or new fires in open and confined environments. Containers may explode if heated. Combustion of the chemical or its packaging can form</p>

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irritating and toxic gases such as monoxide and carbon dioxide.

If material is on fire or involved in fire: Submerge with water. Cool all affected containers with plenty of water. Approach fire against wind to avoid hazardous vapors and toxic decomposition products. Use large amounts of water in containers involved in fire. If necessary, use water spray to cool fire-exposed containers.

Self-contained breathing apparatus (SCBA) operated in positive pressure mode and complete protective clothing.

Specific extinguishing methods

6- ACCIDENTAL RELEASE MEASURES

Personal precautions Prevent sparks or flames. Do not smoke. Do not touch damaged containers or spilled material without wearing suitable clothing. Avoid exposure to the product. Stay away from low areas, with the wind behind you. Use personal protective equipment as described in section 8.

Protective equipment Wear PPE complete with safety glasses, protective gloves, suitable protective clothing, and closed shoes.

Emergency procedures In case of large leaks, where exposure is large, it is recommended to use respiratory protection with a filter against vapors. Evacuate the area within a radius of at least 300 meters. If the tank or cargo is involved in the fire, isolate the area within a radius of 800 meters in all directions. Keep unauthorized persons away from the area. Stop the leak if it can be done without risk.

Environmental precautions Prevent spilled product from reaching water courses and sewage system.

Methods and materials for containment Containment techniques may include bunding, covering of drains and capping procedures.

Methods and materials for cleaning up Use water mist or vapor suppressing foam to reduce the dispersion of the vapors. Use natural barriers or containment of

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spillage. Collect spilled product and place in appropriate containers. Adsorb the remaining product with dry sand, earth, vermiculite, or other inert material. Place the adsorbed material in appropriate containers and remove them to a safe place. For disposal, proceed according to Section 13 of this SDS.

7- HANDLING AND STORAGE

Precautions for safe handling

Handle in a ventilated area or with a general local ventilation / exhaust system. Avoid formation of vapors. Avoid exposure to the product. Avoid contact with incompatible materials. Ground all equipment. Use explosion-proof electrical equipment and lighting. Ground the lines and equipment used during the transfer to reduce the possibility of a fire or explosion initiated by a static spark. Use personal protective equipment as described in section 8. Wash hands and face thoroughly after handling and before eating, drinking, smoking, or going to the bathroom. Contaminated clothing should be changed and washed before reuse. Remove clothing and protective equipment contaminated before entering eating areas.

Conditions for safe storage, including any incompatibilities

Keep away from heat, sparks, open flames, and hot surfaces. - Do not smoke. Keep container tightly closed. Ground the container vessel and the receiver of the product during transfers. Only use anti-sparking tools. Avoid the accumulation of electrostatic charges. Use electrical equipment, ventilation, and lighting explosion proof. Incompatible with bases, oxidizing agents, reducing agents, acetone reacts violently with phosphorus oxychloride.

Recommended Packaging: similar to original packaging.

8 - EXPOSURE CONTROLS AND PERSONAL PROTECTION

Permissible concentration

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	Chemical or common name	TLV – TWA (ACGIH, 2021)	PEL – TWA (OSHA, 2019)	REL – TWA (NIOSH, 2019)
Occupational exposure limit	Acetone A4	TWA 250 ppm STEL 500 ppm	500 ppm (ST) 750 ppm (C) 3000 ppm	250 ppm
	A4: Not classified as a human carcinogen Acetone: IDLH (NIOSH, 2014): 2,500 ppm ST: Short Term Exposure Limit C: Ceiling limit ACGIH - BEI (2021): <u>Acetone:</u> Acetone in urine (end of workday): 25 mg/L. No. Ns: Not specific.			
Biological limit	Promote direct mechanical ventilation and exhaust system to the outside environment. These measures help reduce exposure to product. Keep atmospheric concentrations of the chemical agent below the indicated occupational exposure limits.			
Appropriate engineering controls	Individual protection measures, such as personal protective equipment			
Respiratory protection	Respiratory protection with filter against organic vapors or mist in case of exposure to the product. Based on occupational exposure limits and inhalation hazards of the product, a risk assessment should be performed to properly define respiratory protection in view of the conditions of product use.			
Hand protection	Nitrile protective gloves.			
Eye protection	Safety glasses with side shields.			
Skin and body protection	Suitable safety clothing and closed shoes. The material used should be waterproof. Wear anti-static footwear and clothing.			
Special precautions	Not established.			

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9 - PHYSICAL AND CHEMICAL PROPERTIES

Information on basic physical and chemical properties

Appearance (physical state, color, etc.)	Liquid colorless.
Odour	Resin.
Odour threshold	Not available.
pH	Not available.
Melting point/freezing point	Not available.
Boiling point, initial boiling, and boiling range	Not available.
Flashpoint	< -20 °C.
Upper/lower flammability or explosive limits	Lower: 2.5 vol %. Upper 14.3 vol%
Vapour pressure	246 hPa (at 20°C). 814 hPa (at 50C).
Vapour density	Not available.
Relative density	0.82 g/cm ³ .
Solubility(ies)	Insoluble in water.
n-octanol/water partition coefficient	Not available.
Auto-ignition temperature	535°C.
Decomposition temperature	Not established.
Odour threshold	Not established.
Evaporation rate	Not available.
Flammability	Not established.
Viscosity	Not available.

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Other information Not available.

10 - STABILITY AND REACTIVITY

Reactivity and Chemical stability	Product is stable under normal conditions of temperature and pressure.
Possibility of hazardous reactions	May react dangerously in contact with incompatible materials.
Conditions to avoid	Elevated temperatures. Ignition sources, contact with incompatible materials and humidity. Vapours can form explosive mixtures with air.
Incompatible materials	Incompatible with bases, oxidizing agents, reducing agents, acetone reacts violently with phosphorus oxychloride.
Hazardous decomposition products	Decomposition of product may generate toxic gases such as CO, CO ₂ .

11 - TOXICOLOGICAL INFORMATION

	The product is not expected to present acute oral, dermal or inhalation toxicity.
	<u>Acetone:</u>
	LD ₅₀ (oral, rats): 5800 mg/kg.
	LD ₅₀ (dermal, rabbits): 7,400 mg/kg.
	LC ₅₀ (inhalation, rats, steam, 4h): 50.1 mg/L.
	<u>Benzene-1,2,4,5-tetracarboxylic dianhydride:</u>
	LD ₅₀ (oral, rats): > 2,000 mg/kg.
	LD ₅₀ (dermal, rats): > 2,000 mg/kg.
Skin irritation/corrosion	Exposure to the product causes skin irritation with redness, dryness, and peeling.
	Exposure to the product causes serious eye damage with pain, burning, redness and tearing.
Eye damage/irritation	<u>Benzene-1,2,4,5-tetracarboxylic dianhydride:</u>
	Eye irritation test in rabbits (OECD 405), the substance causes

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	<p>severe damage to the eyes.</p> <p><u>Acetone:</u> Rabbit skin irritation test, duration 24h. Result, not irritating. Exposure can cause allergic skin reactions with dermatitis and itching. May cause allergy or asthma symptoms or breathing difficulties if inhaled.</p>
Respiratory or skin sensitization	<p><u>Benzene-1,2:4,5-tetracarboxylic dianhydride:</u> Skin sensitization test conducted with mice showed that the substance causes skin sensitization in animals. Respiratory sensitization test conducted with rats by inhalation showed that the substance causes respiratory sensitization.</p> <p><u>Acetone:</u> In vitro genotoxicity: There was no evidence of genotoxicity activity of acetone in vitro in Ames studies with Salmonella typhimurium.</p>
Reproductive cell mutagenicity	<p>In vivo genotoxicity: No genotoxic activity of acetone was evidenced in vivo.</p> <p><u>Benzene-1,2:4,5-tetracarboxylic dianhydride:</u> <i>In-vitro</i> gene mutation (Ames) test – negative. In vitro chromosome aberration test - is considered to be non-clastogenic in this chromosome aberration test. The product is not expected to cause cancer.</p>
Carcinogenicity	<p><u>Acetone:</u> ACGIH classifies acetone as group A4 - Not classified as carcinogenic to humans.</p>
Reproductive toxicity	<p>The product is not expected to cause reproductive toxicity.</p>
Specific target organ toxicity – single exposure	<p>The product is not expected to cause specific target organ toxicity through single exposure.</p>
Specific target organ toxicity – repeated exposure	<p>The product is not expected to cause specific target organ toxicity through repeated exposure.</p>
Aspiration hazard	<p>It is not expected that the product presents aspiration hazard.</p>

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12 - ECOLOGICAL INFORMATION

Environmental effects, behavior, and fate of the product

Ecotoxicity	<p>Harmful to aquatic life.</p> <p><u>Acetone:</u> LC₅₀ (<i>Oncorhynchus mykiss</i>, 96h): 5540 mg/L. LC₅₀ (<i>Alburnus alburnus</i>, 96 h): 1,1000 mg/L. LC₅₀ (<i>Daphnia pulex</i>, 48h): 8800 mg/L. NOEC (<i>Daphnia magna</i>, 28d): 2,212 mg/L.</p> <p><u>Benzene-1,2:4,5-tetracarboxylic dianhydride:</u> LC₅₀ (<i>Oncorhynchus mykiss</i>, 96h): > 100 mg/L. EC₅₀ (<i>Daphnia magna</i>, 48h): 63 mg/L. EC₅₀ (<i>Desmodesmus subspicatus</i>, 72h): 7.9 mg/l.</p>
Persistence and degradability	<p>The product is expected to be non-persistent and rapidly degraded.</p> <p><u>Acetone:</u> Biodegradability: 90% in 28 days. Presents low bioaccumulative potential in aquatic organisms.</p>
Bioaccumulative potential	<p><u>Acetone:</u> BCF: 3.</p>
Mobility in soil	<p>Log kow: -0.24. Not available.</p>
Other adverse effects	<p>There are not known adverse environmental effects of the product.</p>

13 - DISPOSAL CONSIDERATIONS

Description of waste residues and information on their safe handling and methods of disposal, including the disposal of any contaminated packaging	<p>Must be disposed of as hazardous waste in compliance with local regulations. The treatment and disposal should be evaluated for each specific product.</p> <p>Keep product residues in their original containers and properly closed. Disposal should be in accordance with the regulations for the product.</p> <p>Do not reuse empty containers. These may contain product</p>
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residues and should be kept closed and sent for appropriate disposal as established for the product.

14 - TRANSPORT INFORMATION

International regulations

Land	UN – “United Nations” Recommendations on the TRANSPORT OF DANGEROUS GOODS. Model Regulations DOT - U.S. Department of Transportation
UN number	1133
UN proper shipping name	ADHESIVES containing flammable liquid
Transport hazard class(es)	3
Subsidiary risk	NA
Packing group	II
Sea	IMO – International Maritime Organization International Maritime Dangerous Goods Code (IMDG Code)
UN number	1133
UN proper shipping name	ADHESIVES containing flammable liquid
Transport hazard class(es)	3
Subsidiary risk	NA
Packing group	II
Environmental hazards	Product is not considered a marine pollutant..
EmS	F-E, S-D
Air	IATA – International Air Transport Association Dangerous Goods Regulation (DGR)
UN number	1133
UN proper shipping name	ADHESIVES containing flammable liquid
Transport hazard class(es)	3
Subsidiary risk	NA

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Packing group	II
Transport in bulk according to MARPOL 73/78, Annex II, and the IBC Code	Consult regulations: - International Maritime Organization. MARPOL: Articles, protocols, annexes, unified interpretations of the International Convention for the Prevention of Pollution from Ships, 1973, as modified by the Protocol of 1978 relating thereto, consolidated edition. IMO, London, 2006. - International Maritime Organization. IBC code: International code for the construction and equipment of shipping carrying dangerous chemicals in bulk: With Standards and guidelines relevant to the code. IMO, London, 2007.
Special precautions	There is no need of special precautions.

15 - REGULATORY INFORMATION

Safety, health, and environmental regulations/legislation specific for the substance or mixture	International Labor Organization C170 Chemicals Convention, from June 25th, 1990: Occupational Safety and Health – Toxic Substances and Agents. Hazard Communication Standard (HCS) 29 CFR: 1910.1200 - Appendix A, B, C, D, E, F. GLOBALLY HARMONIZED SYSTEM OF CLASSIFICATION AND LABELLING OF CHEMICALS (GHS). 8. rev. ed. U.S. Federal Regulations: United States inventory (TSCA): Acetone is listed. Benzene-1,2:4,5-tetracarboxylic dianhydride is listed. California Proposition 65: Ingredients are not listed.
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16 - OTHER INFORMATION

This SDS was prepared based on current knowledge about the proper product handling and under normal conditions of use, in accordance with the application specified on the packaging. Any other use of the product involving their combination with other materials, and use various forms of those indicated, are the responsibility of the user. Warns that the

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handling of any chemical substance requires the prior knowledge of its hazards for the user. In the workplace it is for the user company's product promotes training of its collaborators about the possible risks arising from exposure to the chemical.

SDS elaborated in September 2021.

Hazard statements described in section 3:

H225 Highly flammable liquid and vapour.

H317 May cause an allergic skin reaction.

H318 Causes serious eye damage.

H319 Causes serious eye irritation.

H334 May cause allergy or asthma symptoms or breathing difficulties if inhaled.

H336 May cause drowsiness or dizziness.

H401 Toxic to aquatic life.

Abbreviations:

ACGIH – American Conference of Governmental Industrial Hygienists

BCF – Bioconcentration Factor

CAS – Chemical Abstracts Service

LE₅₀ – Effective concentration 50%

LC₅₀ – Lethal Concentration 50%

LD₅₀ – Lethal Dose 50%

NIOSH – National Institute of Occupational Safety and Health

OSHA – Occupational Safety & Health Administration

PEL – Permissible Exposure Limit

REL – Recommended Exposure Limit

STEL – Short Term Exposure Limit

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TLV – Threshold Limit Value

TWA – Time Weighted Average

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