SDS
In compliance with HCS/HazCom 2012

SAFETY DATA SHEET

Product: EP 70 Komp. B

Revision: 00 | Date: 9/14/2021 | Pages: 1 /14

1 - IDENTIFICATION

Product identifier	EP 70 Komp. B
Product code	5R10-90JX-W00V-2P8E
Recommended use of the chemical and restrictions on use	Adhesives, 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	Skin corrosion/irritation - Category 2 Skin sensitizer – Category 1 Serious eye damage/eye irritation - Category 1 Hazardous to the aquatic environmental, short-term Acute – Category 2 Hazardous to the aquatic environmental, long-term Chronic – Category 2.
Signal word	DANGER.
Hazard statement(s)	H315 Causes skin irritation. H317 May cause an allergic skin reaction. H318 Causes serious eye damage. H401 Toxic to aquatic life. H411 Toxic to aquatic life with long lasting effects.

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Symbol(s)	
Precautionary statement(s)	**PREVENTION** P264 Wash hands thoroughly after handling. P272 contaminated work clothing should not be allowed out of the workplace. P273 Avoid release to the environment. P280 Wear protective gloves, protective clothing, eye protection, face protection. **RESPONSE** P319 Get medical help if you feel unwell. P391 Collect spillage. P302 + P352 IF ON SKIN: Wash with plenty of water. P362 + P364 Take off contaminated clothing and wash it before reuse. P305 + P354 + P338 IF IN EYES: Immediately rinse with water for several minutes. Remove contact lenses, if present and easy to do. Continue rising. **DISPOSAL** P501 Dispose of contents and container according to current regulations.
Classification system adopted	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.
Other hazards which do not result in classification	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*
Reaction product: bisphenol-A-(epichlorhydrin); epoxy resin (number average molecular weight ≤ 700)	50-100%	25068-38-6	H315; H317; H319; H401; H411
1,4-bis(2,3 epoxypropoxy)butane; butanedioldiglycidyl ether	10-25%	2425-79-8	H302; H312; H315; H317; H318; H412
Formaldehyde, oligomeric reaction products with phenol	10-20%	9003-35-4	H317; H319; H412

* Hazard statements are described in section 16.

4 - FIRST-AID MEASURES

Inhalation	Remove the victim to a ventilated place and keep him at rest in a position that does not make breathing difficult. If you feel unwell, contact a POISON CENTER or a doctor. Take this SDS.
Skin contact	IF ON SKIN: Remove all contaminated clothing. Rinse skin with soap and water or take a shower. If necessary, call a POISON CENTER or doctor / physician. Take this SDS.
Eye contact	Rinse thoroughly with water for several minutes. If using contact lenses, remove them if it is easy. If eye irritation persists consult a doctor. Take this SDS.
Ingestion	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.
Most important symptoms and effects, acute and delayed	Exposure to the product causes skin irritation with redness, dryness and peeling, and exposure to the product causes serious eye damage with burning, pain, tearing and redness. Exposure can cause allergic skin reactions with dermatitis and itching.
Indication of any immediate medical attention and special treatment needed	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.

5 - FIRE-FIGHTING MEASURES

Extinguishing media	Suitable: Compatible with water spray, dry chemical, foam, or carbon dioxide (CO_2). Unsuitable: Water jet directly under the burning product.
Specific hazards arising from the chemical product	The combustion of the chemical products or containers may form toxic and irritating gases such as carbon monoxide (CO), carbon dioxide (CO_2).
Specific extinguishing methods	Self-contained breathing apparatus (SCBA) operated in positive pressure mode and complete protective clothing. Containers and tanks involved in the fire should be cooled with water laterally.

6 - ACCIDENTAL RELEASE MEASURES

Personal precautions	Do not smoke. Avoid contact with the product. If necessary, use personal protective equipment as described in section 8.
Protective equipment	Use protective equipment as described in Section 8.
Emergency procedures	Wear PPE complete with safety glasses, butyl rubber safety gloves, suitable protective clothing, and closed shoes. The material used must be waterproof. In case of leakage, where

	exposure is high, the use of a respirator with a for mists and vapors filter. Isolate spills from ignition sources. Keep unauthorized persons away from the area. Stop the leak if it can be done without risk.
Environmental precautions	Prevent the product from reaching the soil and water courses. Notify the relevant authorities if the product has caused environmental pollution (if it has reached water courses or if it has contaminated the soil or vegetation).
Methods and materials for containment	Absorb the remaining product with dry sand, earth, vermiculite, or any other inert material.
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 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 mists and vapors. Avoid exposure to the product. Avoid contact with incompatible materials. Use personal protective equipment as described in section 8. Wash hands and face thoroughly after handling and before eating, drinking, smoking, or using the bathroom. Contaminated clothing must be changed and washed before reuse.

Conditions for safe storage, including any incompatibilities	Store in a well-ventilated, dry, cool place away from sunlight. Keep the packaging tightly closed and in an area accessible only to authorized persons. Keep away from sources of ignition and heat. Keep away from incompatible materials. The product may be incompatible with strong acids, acids, strong oxidizing agents.

8 - EXPOSURE CONTROLS AND PERSONAL PROTECTION

Permissible concentration

Occupational exposure limit	Not established.
Biological limit	Not established.
Appropriate engineering controls	Promote direct mechanical ventilation and exhaust system to the outside environment. These measures help reduce exposure to product.

Individual protection measures, such as personal protective equipment

Respiratory protection	Use respiratory protection equipment against mists and vapors. Based on the inhalation hazard of the product, a risk assessment must be carried out to adequately define respiratory protection in view of the conditions of use of the product.
Hand protection	Nitrile rubber safety gloves, suitable protective clothing, and closed shoes.
Eye protection	Safety glasses with side protection.
Skin and body protection	Proper protective clothing and closed shoes are recommended.
Special precautions	Not applicable.

9 - PHYSICAL AND CHEMICAL PROPERTIES

Information on basic physical and chemical properties

Appearance (physical state, color, etc.)	Liquid, colorless.
Odour	Solvents.
Odour threshold	Not available.
pH	Not available.
Melting point/freezing point	Not available.
Boiling point, initial boiling, and boiling range	-19°C.
Flashpoint	129°C.
Upper/lower flammability or explosive limits	Lower – 7 vol %. Upper – 72 vol %.
Vapour pressure	13,3 hPa (at 20°C).
Vapour density	Not available.
Relative density	Not available.
Solubility(ies)	Not available.
n-octanol/water partition coefficient	Not available.
Auto-ignition temperature	Not available.
Decomposition temperature	Not available.
Odour threshold	Not available.
Evaporation rate	Not available.
Flammability	Not available.
Viscosity	Not available.
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	The product can react dangerously in contact with incompatible materials.
Conditions to avoid	High temperatures, heat, friction and contact with incompatible materials.
Incompatible material	The product may be incompatible with strong acids, acids, strong oxidizing agents.
Hazardous decomposition products	Decomposition of product may generate toxic gases such as CO, CO_2, and other toxic gases.

11 - TOXICOLOGICAL INFORMATION

Acute toxicity	The product is not expected to be toxic to the oral, dermal or inhalation routes. 1,4-bis(2,3 epoxypropoxy)butane: LD_{50} (oral, rats): 1163 mg/kg. LD_{50} (dermal, rabbits): 1130 mg/kg. Acute Toxicity Estimate Mixture – ATE: ATEmix (oral): > 2,000 mg/kg. ATEmix (dermal): > 2,000 mg/kg.
Skin irritation/corrosion	Exposure to the product causes skin irritation with redness, dryness, and peeling. reaction product: bisphenol-A-(epichlorhydrin); epoxy resin: Rabbit skin irritation test. Result: irritating.
Eye damage/irritation	exposure to the product causes serious eye damage with burning, pain, tearing and redness. 1,4-bis(2,3 epoxypropoxy)butane: Rabbit eye irritation test. Result: irreversible effects on the eye.
Respiratory or skin	Exposure can cause allergic skin reactions with dermatitis and

sensitization	itching. 1,4-bis(2,3 epoxypropoxy)butane: Skin Sensitisation (OECD Guideline 406), guinea pig - result: strong allergenic potency of the test. The product is not expected to have mutagenic potential. Reaction product: bisphenol-A-(epichlorhydrin); epoxy resin: In vitro gene mutation study in mammalian cells: negative result.
Reproductive cell mutagenicity	1,4-bis(2,3 epoxypropoxy)butane: The genetic toxicity of the compound was evaluated *in vitro* studies (bacterial reverse mutation assays and mammalian aberration assay), and *in vivo* studies (micronucleus and sibling chromatid exchange assays). Positive results were reported for all *in vitro* studies, all live studies were negative.
Carcinogenicity	The product is not expected to have carcinogenic potential.
Reproductive toxicity	It is not expected that the product presents reproductive toxicity.
Specific target organ toxicity – single exposure	Is not expected that the product to cause target organ toxicity from single exposure.
	Is not expected that the product to cause target organ toxicity from repeated exposure.
Specific target organ toxicity – repeated exposure	1,4-bis(2,3 epoxypropoxy)butane: A 28-day repeated dose oral toxicity study in rats, conducted in accordance with OECD Test Guideline 407, demonstrated a NOAEL of 200 mg/kg body weight/day. no toxic effects were observed by repeated exposure.
Aspiration hazard	It is not expected that the product presents aspiration hazard.

12 - ECOLOGICAL INFORMATION

Environmental effects, behavior, and fate of the product

Ecotoxicity	Toxic to aquatic life with long lasting effects. Reaction product: bisphenol-A-(epichlorhydrin); epoxy resin:

	EC_{50} (*Daphnia magna*, 48h): 1.1 - 2.8 mg/L. EC_{50} (*Scenedesmus capricornutum*, 72h): 9.4 mg/L. 1,4-bis(2,3 epoxypropoxy)butane: LC_{50} (*Danio rerio*, 96h): 19.8 mg/L. EC_{50} (*Daphnia magna*, 24h): 75 mg/L. EL_{50} (*Pseudokirchnerella subcapitata*, 72h): 110 mg/L.
Persistence and degradability	The product is expected to exhibit persistence and not be rapidly degraded.
Bioaccumulative potential	It is expected that the product has low bioaccumulative potential in aquatic organisms. Reaction product: bisphenol-A-(epichlorhydrin); epoxy resin: Log kow: 3 at 25°C.
Mobility in soil:	Not available.
Other adverse effects	There are not known adverse environmental effects of the product.

13 - DISPOSAL CONSIDERATIONS

Description of waste residues and information on their safe handling and methods of disposal, including the disposal of any contaminated packaging:	Must be disposed of as hazardous waste in compliance with local regulations. The treatment and disposal should be evaluated for each specific product. Keep product residues in their original containers and properly closed. Disposal should be in accordance with the regulations for the product. Do not reuse empty containers. These may contain product 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	3082
UN proper shipping name	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (reaction product: bisphenol-A-(epichlorhydrin); epoxy resin)
Transport hazard class(es)	9
Subsidiary risk	NA
Packing group	III
Sea	IMO – International Maritime Organization International Maritime Dangerous Goods Code (IMDG Code)
UN number	3082
UN proper shipping name	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (reaction product: bisphenol-A-(epichlorhydrin); epoxy resin)
Transport hazard class(es)	9
Subsidiary risk	NA
Packing group	III
Environmental hazards	Product is considered a marine pollutant..
EmS	F-A, S-F
Air	IATA – International Air Transport Association Dangerous Goods Regulation (DGR)
UN number	3082
UN proper shipping name	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (reaction product: bisphenol-A-(epichlorhydrin); epoxy resin)
Transport hazard class(es)	9
Subsidiary risk	NA
Packing group	III

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): reaction product: bisphenol-A-(epichlorhydrin); epoxy resin is listed. 1,4-bis(2,3 epoxypropoxy)butane is listed. Formaldehyde, oligomeric reaction products with phenol is listed. California Proposition 65: Ingredients are not listed.

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

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 phrases described in section 3:
H302 Harmful if swallowed.
H312
H315 Causes skin irritation.
H317 May cause an allergic skin reaction.
H318
H319 Causes serious eye irritation.
H401 Toxic to aquatic life.
H411 Toxic to aquatic life with long lasting effects.

Abbreviations:
ACGIH – American Conference of Governmental Industrial Hygienists
CAS – Chemical Abstracts Service
LC_{50} – Lethal Concentration 50%
LD_{50} – Lethal Dose 50%
ERPG - Emergency Response Planning Guidelines
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
TLV – Threshold Limit Value
TWA – Time Weighted Average

Bibliographic references:
ACGIH. AMERICAN CONFERENCE OF GOVERNMENTAL INDUSTRIALS HYGIENISTS.

TLVs® and BEIs®: Based on the Documentation of the Threshold Limit Values (TLVs®) for Chemical Substances and Physical Agents & Biological Exposure Indices (BEIs®). Cincinnati-USA, 2021.

ECHA. EUROPEAN CHEMICAL AGENCY. Available in: <https://echa.europa.eu/>. Access in: Sep. 2021.

ECHEM. The Global Portal to Information on Chemical Substances OECD. Available in: <https://www.echemportal.org/echemportal/substancesearch/substancesearch_ execute.action>. Access in: Sep. 2021.

EPA. United States Environmental protection Agency. Comptox. Available in: < https://comptox.epa.gov>. Access in: Sep. 2021.

GHS. Globally Harmonized System of Classification and Labelling of Chemicals. 8. rev. ed. New York: United Nations, 2019.

IARC. INTERNATIONAL AGENCY FOR RESEARCH ON CANCER. Available in: <http:/monographs.iarc.fr/ENG/Classication/index.php>. Access in: Sep. 2021.

NIOSH. NATIONAL INSTITUTE OF OCCUPATIONAL AND SAFETY. International Chemical Safety Cards. Available in: <http:/www.cdc.gov/niosh/>. Access in: Sep. 2021.

NJ. STATE OF NEW JERSEY - Department of Health. Available in: <http:/nj.gov/health/eoh/rtkweb/odispubr.shtml>. Access in: Sep. 2021.

SDS. Safety Data Sheet. EP 70 Komp. B. Revision No: 1,2 - Replaces version: 1,1. Revision date: 18.02.2021.

TOXNET. TOXICOLOGY DATA NETWORKING. ChemIDplus Lite. Available in: <http:/chem.sis.nlm.nih.gov/>. Access in: Sep. 2021.