

# SDS

In compliance with HCS/HazCom 2012



## SAFETY DATA SHEET

Product: X60-B (Verbesserte Rezeptur)

Revision: 00

Date: 9/09/2021

Pages: 1 /15

### 1 - IDENTIFICATION

Product identifier	X60-B (Verbesserte Rezeptur)
Recommended use of the chemical and restrictions on use	Binder
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 corrosion/irritation – Category 2 Skin sensitization – Category 1 Specific target organ toxicity – Single exposure – Category 3
Signal word	DANGER
Hazard statement(s)	H225 Highly flammable liquid and vapour. H315 Causes skin irritation. H317 May cause an allergic skin reaction. H335 May cause drowsiness or dizziness.

Symbol(s)



### PREVENTION

Precautionary statement(s)	P210 Keep away from heat, hot surfaces, sparks, open flames, and other sources. No smoking.
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# SDS

In compliance with HCS/HazCom 2012



## SAFETY DATA SHEET

Product: X60-B (Verbesserte Rezeptur)

Revision: 00

Date: 9/09/2021

Pages: 2 /15

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.

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, protective clothing, eye protection, face protection, hearing protection.

### RESPONSE

P304 + P340 IF INHALED: Remove person to fresh air and keep comfortable for breathing.

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

P370 + P378 In case of fire: Use water jet or fog, chemical powder, carbon dioxide (CO<sub>2</sub>) to extinguish.

### STORAGE

P403 + P233 Store in a well-ventilated place. Keep container tightly closed.

### DISPOSAL

P501 Dispose of contents and container in accordance with 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.

Classification system adopted

Other hazards which do not result in classification

The product has no other hazards.

# SDS

In compliance with HCS/HazCom 2012



## SAFETY DATA SHEET

Product: X60-B (Verbesserte Rezeptur)

Revision: 00

Date: 9/09/2021

Pages: 3 /15

### 3 – COMPOSITION / INFORMATION ON INGREDIENTS

#### MIXTURE

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

Components	Concentration %	Number CAS	GHS classification*
Methyl methacrylate	65 - < 70 %	80-62-6	H225; H315; H317; H335
2,2'-Ethylenedioxydiethyl dimethacrylate	5 - < 10 %	109-16-0	H317

\* Hazard statements are described in section 16.

### 4 - FIRST-AID MEASURES

Inhalation

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.

Skin contact

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.

Eye contact

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 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.

# SDS

In compliance with HCS/HazCom 2012



## SAFETY DATA SHEET

Product: X60-B (Verbesserte Rezeptur)

Revision: 00

Date: 9/09/2021

Pages: 4 /15

Most important symptoms and effects, acute and delayed

Exposure to the product causes skin irritation with redness, dryness, and peeling. Exposure can cause allergic skin reactions with dermatitis and itching. Inhalation of the product may irritate the respiratory tract with coughing and sneezing.

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 jet or fog, foam, chemical powder, carbon dioxide (CO<sub>2</sub>).

Not suitable: Direct water jets.

Specific hazards arising from the chemical product

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. 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 irritating and toxic gases such as monoxide and carbon dioxide.

Specific extinguishing methods

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.

# SDS

In compliance with HCS/HazCom 2012



## SAFETY DATA SHEET

Product: X60-B (Verbesserte Rezeptur)

Revision: 00

Date: 9/09/2021

Pages: 5 /15

### 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 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
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# SDS

In compliance with HCS/HazCom 2012



## SAFETY DATA SHEET

Product: X60-B (Verbesserte Rezeptur)

Revision: 00

Date: 9/09/2021

Pages: 6 /15

Conditions for safe storage, including any incompatibilities

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.

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.

Recommended Packaging: similar to original packaging.

### 8 - EXPOSURE CONTROLS AND PERSONAL PROTECTION

Permissible concentration

Occupational exposure limit

Chemical or common name	TLV – TWA (ACGIH, 2021)	PEL – TWA (OSHA, 2019)	REL – TWA (NIOSH, 2019)
Methyl methacrylate DSEN;A4	TWA 50 ppm STEL 100 ppm	50 ppm (ST) 100 ppm	100 ppm

A4: Not classified as a human carcinogen

ST: Short Term Exposure Limit

C: Ceiling limit

DSEN: Dermal sensitization.

Biological limit

Not established.

Appropriate engineering

Promote direct mechanical ventilation and exhaust system to

# SDS

In compliance with HCS/HazCom 2012



## SAFETY DATA SHEET

Product: X60-B (Verbesserte Rezeptur)

Revision: 00

Date: 9/09/2021

Pages: 7 /15

controls	the outside environment. These measures help reduce exposure to product. Keep atmospheric concentrations of the chemical agent below the indicated occupational exposure limits.
Individual protection measures, such as personal protective equipment	Respiratory protection with filter against vapors or mist in case of exposure to the product.
Respiratory protection	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.

### 9 - PHYSICAL AND CHEMICAL PROPERTIES

Information on basic physical and chemical properties

Appearance (physical state, color, etc.)	Liquid brown.
Odour	Amines.
Odour threshold	Not available.
pH	Not available.
Melting point/freezing point	Not available.
Boiling point, initial boiling, and boiling range	101°C.

# SDS

In compliance with HCS/HazCom 2012



## SAFETY DATA SHEET

Product: X60-B (Verbesserte Rezeptur)

Revision: 00

Date: 9/09/2021

Pages: 8 /15

Flashpoint	10°C.
Upper/lower flammability or explosive limits	Lower: 2.1 vol %. Upper 12.5 vol%
Vapour pressure	53hPa.
Vapour density	Not available.
Relative density	1.08 g/cm <sup>3</sup> .
Solubility(ies)	Insoluble in water.
n-octanol/water partition coefficient	Not available.
Auto-ignition temperature	430°C.
Decomposition temperature	Not established.
Odour threshold	Not established.
Evaporation rate	Not available.
Flammability	Not established.
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	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.



# SDS

In compliance with HCS/HazCom 2012



## SAFETY DATA SHEET

Product: X60-B (Verbesserte Rezeptur)

Revision: 00

Date: 9/09/2021

Pages: 9 /15

Hazardous decomposition products      Decomposition of product may generate toxic gases such as CO, CO<sub>2</sub>.

### 11 - TOXICOLOGICAL INFORMATION

	The product is not expected to present acute oral, dermal or inhalation toxicity.
Acute toxicity	<u>Methyl methacrylate:</u> LD <sub>50</sub> (oral, rats): 7900 mg/kg. LC <sub>50</sub> (inhalation, rats, 4h): 29.8 mg/L. LD <sub>50</sub> (dermal, rat): > 5000 mg/kg. Exposure to the product causes skin irritation with redness, dryness, and peeling.
Skin irritation/corrosion	<u>Methyl methacrylate:</u> Skin irritation test conducted on rabbits showed that the compound causes skin irritation. The product is not expected to cause eye irritation.
Eye damage/irritation	<u>Methyl methacrylate:</u> Eye irritation test in rabbits did not show potential to cause eye irritation. Exposure can cause allergic skin reactions with dermatitis and itching.
Respiratory or skin sensitization	<u>Methyl methacrylate:</u> Skin sensitization test, conducted with mice - OECD Guideline 429 (Skin Sensitisation: Local Lymph Node Assay). It presented positive results. <u>2,2'-Ethylenedioxydiethyl dimethacrylate:</u> Skin sensitization test, conducted with mice. It presented positive results.
Reproductive cell mutagenicity	The product is not expected to cause mutagenicity in germ cells. <u>Methyl methacrylate:</u> In vivo assays conducted on cells (micronucleus) were negative.

# SDS

In compliance with HCS/HazCom 2012



## SAFETY DATA SHEET

Product: X60-B (Verbesserte Rezeptur)

Revision: 00

Date: 9/09/2021

Pages: 10 /15

	The product is not expected to cause cancer.
	<u>Methyl methacrylate:</u>
Carcinogenicity	The IARC classifies methyl methacrylate as Group 3 – Not classified as a human carcinogen. AGCIH classifies methyl methacrylate as Group A4 - Not classifiable as a human carcinogen. The product is not expected to cause reproductive toxicity.
	<u>Methyl methacrylate:</u>
Reproductive toxicity	Studies conducted with animals did not show a teratogenic effect, embryotoxicity or fetotoxicity at doses up to 2,028 ppm (8,425 mg/m <sup>3</sup> ).
Specific target organ toxicity – single exposure	May cause respiratory irritation with coughing and sneezing.
Specific target organ toxicity – repeated exposure	The product is not expected to cause specific target organ toxicity through 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

	The product is not expected to be harmful to aquatic organisms.
	<u>Methyl methacrylate:</u>
Ecotoxicity	LC <sub>50</sub> ( <i>Lepomis macrochirus</i> , 96h): 191 mg/L. LC <sub>50</sub> ( <i>Oncorhynchus mykiss</i> , 96h): >79 mg/L. EC <sub>150</sub> ( <i>Pseudokirchnerella subcapitata</i> , 72h): > 110 mg/L
Persistence and degradability	The product is expected to be non-persistent and rapidly degraded. Biodegradability: 94% degradation after 14 days. Presents low bioaccumulative potencial in aquatic organisms.
Bioaccumulative potential	<u>Methyl methacrylate:</u> BCF 3.03. Log kow: 1.32.

# SDS

In compliance with HCS/HazCom 2012



## SAFETY DATA SHEET

Product: X60-B (Verbesserte Rezeptur)

Revision: 00

Date: 9/09/2021

Pages: 11 /15

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	<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 residues and should be kept closed and sent for appropriate disposal as established for the product.</p>
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### 14 - TRANSPORT INFORMATION

International regulations	UN – “United Nations”
Land	Recommendations on the TRANSPORT OF DANGEROUS GOODS. Model Regulations DOT - U.S. Department of Transportation
UN number	1247
UN proper shipping name	METHYL METHACRYLATE MONOMER, STABILIZED
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	1247
UN proper shipping name	METHYL METHACRYLATE MONOMER, STABILIZED

# SDS

In compliance with HCS/HazCom 2012



## SAFETY DATA SHEET

Product: X60-B (Verbesserte Rezeptur)

Revision: 00

Date: 9/09/2021

Pages: 12 /15

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	1247
UN proper shipping name	METHYL METHACRYLATE MONOMER, STABILIZED
Transport hazard class(es)	3
Subsidiary risk	NA
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
---	---

# SDS

In compliance with HCS/HazCom 2012



## SAFETY DATA SHEET

Product: X60-B (Verbesserte Rezeptur)

Revision: 00

Date: 9/09/2021

Pages: 13 /15

AND LABELLING OF CHEMICALS (GHS). 8. rev. ed.

U.S. Federal Regulations: United States inventory (TSCA): The Methyl methacrylate is listed. The 2,2'-ethylenedioxydiethyl dimethacrylate 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 statements described in section 3:

H225 Highly flammable liquid and vapour.

H315 Causes skin irritation.

H317 May cause an allergic skin reaction.

H335 May cause drowsiness or dizziness.

Abbreviations:

ACGIH – American Conference of Governmental Industrial Hygienists

BCF – Bioconcentration Factor

CAS – Chemical Abstracts Service

LE<sub>50</sub> – Effective concentration 50%

LC<sub>50</sub> – Lethal Concentration 50%

# SDS

In compliance with HCS/HazCom 2012



## SAFETY DATA SHEET

Product: X60-B (Verbesserte Rezeptur)

Revision: 00

Date: 9/09/2021

Pages: 14 /15

LD<sub>50</sub> – 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

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.

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---

# SDS

In compliance with HCS/HazCom 2012



## SAFETY DATA SHEET

Product: X60-B (Verbesserte Rezeptur)

Revision: 00

Date: 9/09/2021

Pages: 15 /15

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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.

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