

# MATERIAL SAFETY DATA SHEET

NAME OF PRODUCT: MIRROBOR™



FILE NO.:Mirrobor\_MSDS

DATE:11/19/2019

## SDS SECTION 1: IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND OF THE COMPANY/UNDERTAKING

### 1.1 PRODUCT IDENTIFIER

### 1.2 RELEVANT IDENTIFIED USES OF THE SUBSTANCE OR MIXTURE AND USES ADVISED AGAINST

### 1.3 DETAILS OF THE SUPPLIER OF THE SAFETY DATA SHEET

### 1.4 EMERGENCY TELEPHONE NUMBER

PRODUCT NAME : MIRROBOR™  
(HIGH BORON CONTENT FLEXIBLE NEUTRON SHIELDING)

PRODUCT CODES : T=THICKNESS [mm]

MANUFACTURER : MIRROTRON LTD.  
DIVISION :  
ADDRESS : H-1121, BUDAPEST, KONKOLY-THEGE MIKLÓS STR. 29-33,  
HUNGARY

EMERGENCY PHONE : +36-1-392-2642

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E-MAIL : [neutron@mirrotron.com](mailto:neutron@mirrotron.com)  
WEB : <https://mirrotron.com>

PRODUCT USE : FLEXIBLE NEUTRON SHIELDING MATERIAL  
PREPARED BY : MIRROTRON LTD

SECTION 1 NOTES :

## SDS SECTION 2: HAZARDS IDENTIFICATION

### 2.1 CLASSIFICATION OF THE SUBSTANCE OR MIXTURE

### 2.2 LABEL ELEMENTS

### 2.3 OTHER HAZARDS

INGREDIENT : BORON-CARBIDE, ACRYLATE RESIN

HAZARDOUS INGREDIENTS : NO

SECTION 2 NOTES : EXPOSURE CONTROLS AND PERSONAL PROTECTION UNDER SECTION 8 RELEVANT R-PHRASES IN THE TEXT, SEE SECTION 15 IN CASE OF SELF-ADHESIVE MIRROBOR™, REFER TO AS1130 TP TDS

## SDS SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS

### 3.1 SUBSTANCES

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### 3.2 MIXTURES

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EMERGENCY OVERVIEW : NO

ROUTES OF ENTRY :

POTENTIAL HEALTH EFFECTS

EYES : NO

SKIN : NO, PERSONAL DEPENDENT IRRITATION

INGESTION : WEAK

INHALATION : NO

ACUTE HEALTH HAZARDS : NO

CHRONIC HEALTH HAZARDS : NO

CARCINOGENICITY : NO

SECTION 3 NOTES : DO NOT EMPTY IN WATER DRAIN

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## SDS SECTION 4: FIRST AID MEASURES

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### 4.1 DESCRIPTION OF FIRST AID MEASURES

### 4.2 Text MOST IMPORTANT SYMPTOMS AND EFFECTS, BOTH ACUTE AND DELAYED

### 4.3 INDICATION OF ANY IMMEDIATE MEDICAL ATTENTION AND SPECIAL TREATMENT NEEDED

EYES : REMOVE CONTACT LENSES. WITH OPEN EYES, RINSE IMMEDIATELY WITH RUNNING WATER FOR SEVERAL MINUTES (AT LEAST 10 MINUTES), RINSE AND SEEK MEDICAL ADVICE (IN CASE OF SMALL PARTICLES AND DUST)

SKIN : IMMEDIATELY WASH WITH WATER AND SOAP AND RINSE THOROUGHLY DO NOT USE SOLVENTS OR THINNERS. CONSULT A PHYSICIAN IF PROBLEMS PERSIST.

INGESTION : RINSE MOUTH AND DRINK PLENTY OF WATER. DO NOT INDUCE VOMITING NOT INDUCE VOMITING. GET MEDICAL ATTENTION IMMEDIATELY

INHALATION : PROVIDE FRESH AIR. KEEP VICTIM WARM AND QUIET. IRREGULAR BREATHING OR INITIATE BREATHING, GIVE ARTIFICIAL RESPIRATION. IF UNCONSCIOUS REST POSITION AND SEEK MEDICAL ADVICE (IN CASE OF EXCESSIVE SMALL PARTICLES AND DUST FORMATION)

SECTION 4 NOTES :

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## SDS SECTION 5: FIREFIGHTING MEASURES

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### 5.1 EXTINGUISHING MEDIA

### 5.2 SPECIAL HAZARDS ARISING FROM THE SUBSTANCE OR MIXTURE

### 5.3 ADVICE FOR FIREFIGHTERS

**EXTINGUISHING MEDIA** : ALCOHOL-RESISTANT FOAM, CARBON DIOXIDE,  
DRY CHEMICAL, WATER SPRAY

**SPECIAL FIRE FIGHTING PROCEDURES** : NO WATER WITH FULL JET.

**SECTION 5 NOTES** : HAZARDOUS DECOMPOSITION PRODUCTS: FIRE WILL  
PRODUCE DENSE BLACK SMOKE CONTAINING  
HAZARDOUS PRODUCTS OF DECOMPOSITION. EXPOSURE  
TO DECOMPOSITION PRODUCTS MAY CAUSE HEALTH  
PROBLEMS.

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## SDS SECTION 6: ACCIDENTAL RELEASE MEASURES

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### 6.1 PERSONAL PRECAUTIONS, PROTECTIVE EQUIPMENT AND EMERGENCY PROCEDURES

### 6.2 ENVIRONMENTAL PRECAUTIONS

### 6.3 METHODS AND MATERIAL FOR CONTAINMENT AND CLEANING UP

### 6.4 REFERENCE TO OTHER SECTIONS

**ACCIDENTAL RELEASE MEASURES** : NO

**SECTION 6 NOTES** : SEE SECTION 8 PERSONAL PROTECTIVE EQUIPMENT.

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## SDS SECTION 7: HANDLING AND STORAGE

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### 7.1 PRECAUTIONS FOR SAFE HANDLING

### 7.2 CONDITIONS FOR SAFE STORAGE, INCLUDING ANY INCOMPATIBILITIES

### 7.3 SPEPCIFIC END USE(S)

**HANDLING AND STORAGE** : STORE ON FLAT, DRY PLACE

**OTHER PRECAUTIONS** : AVOID HIGH HUMIDITY, WASHING OR DIP IN WATER, KEEP  
AWAY FROM OXIDISING AGENTS AND STRONGLY  
ACIDIC, ALKALINE, ORGANIC SOLVENT MATERIALS

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**SECTION 7 NOTES :** HANDLE IN ACCORDANCE WITH GOOD INDUSTRIAL HYGIENE AND SAFETY PRACTICE.

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## SDS SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

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### 8.1 CONTROL PARAMETERS

### 8.2 EXPOSURE CONTROLS

**ENGINEERING CONTROLS :** NO

**VENTILATION :** YES, IF DUST FORMATION HAPPENED (RUBBING)

**RESPIRATORY PROTECTION :** YES, IF DUST FORMATION HAPPENS (RUBBING)

**EYE PROTECTION :** SAFETY GLASS AGAINST SMALL PARTICLES

**SKIN PROTECTION :** PROTECTIVE RUBBER GLOVES

**OTHER PROTECTIVE CLOTHING OR EQUIPMENT :** NO

**WORK HYGIENIC PRACTICES :** NO

**EXPOSURE GUIDELINES :** NO

**SECTION 8 NOTES :** AVOID CONTACT WITH EYES AND SKIN. WASH HANDS BEFORE BREAKS AND AFTER WORK. SKIN CREAM USE

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## SDS SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

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### 9.1 INFORMATION ON BASIC PHYSICAL AND CHEMICAL PROPERTIES

- a) Appearance
- b) Odour
- c) Odour Threshold
- d) pH
- e) Melting point / freezing point
- f) Initial boiling point and boiling range
- g) Flash point
- h) Evaporation rate
- i) Flammability (solid, gas)
- j) Upper/lower flammability or explosive limits
- k) Vapour pressure
- l) Vapour density
- m) Relative density
- n) Solubility(ies)
- o) Partition coefficient: n-octanol/water
- p) Autoignition temperature
- q) Decomposition temperature
- r) Viscosity
- s) Explosive properties
- t) Oxidising properties

### 9.2 OTHER INFORMATION

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APPEARANCE : SOLID SHEETS  
ODOR : WEAK, NO SIGNIFICANT  
DENSITY : 1,36g/cm3  
MELTING POINT : 175°C  
FLAMMABLE : 375°C  
EXPLOSIVE PROP. : NO  
SOLUBILITY IN WATER : NO  
OTHER : POROSITY CAN TAKE WATER IN THE POROUS STRUCTURE

SECTION 9 NOTES:

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SDS SECTION 10: STABILITY AND REACTIVITY

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10.1 REACTIVITY

10.2 CHEMICAL STABILITY

10.3 POSSIBILITY OF HAZTARDOUS REACTIONS

10.4 CONDITIONS TO AVOID

10.5 INCOMPATIBLE MATERIALS

10.6 HAZARDOUS DECOMPOSITION PRODUCTS

STABILITY : STABLE  
CONDITIONS TO AVOID (STABILITY) : FLAME, ACID, ALKALINE, ORGANIC SOLVENT, HIGH HUMIDITY ENVIRONMENT, LIQUID CONTACT  
INCOMPATIBILITY (MATERIAL TO AVOID) : ACIDS, ALKALINE, ORGANIC SOLVENT  
HAZARDOUS DECOMPOSITION OR BY-PRODUCTS : FLAME GENERATED SMOKE  
HAZARDOUS POLYMERIZATION : NO  
CONDITIONS TO AVOID : SEE SECTION 7 HANDLING AND STORAGE

SECTION 10 NOTES:

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**SDS SECTION 11: TOXICOLOGICAL INFORMATION**

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**TOXICOLOGICAL INFORMATION:** N/A  
**SECTION 11 NOTES :** NOT TOXIC

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**SDS SECTION 12: ECOLOGICAL INFORMATION**

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**12.1 TOXICITY**  
**12.2 PERSISTENCE AND DEGRADABILITY**  
**12.3 BIOACCUMULATIVE POTENTIAL**  
**12.4 MOBILITY IN SOIL**  
**12.5 RESULTS OF PBT AND vPvB ASSESSMENT**  
**12.6 OTHER ADVERSE EFFECTS**

**ECOLOGICAL INFORMATION :** N/A  
**SECTION 12 NOTES :** DO NOT GET IN THE GROUND WATER, WATER COURSE OR SEWAGE SYSTEM.

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**SDS SECTION 13: DISPOSAL CONSIDERATIONS**

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**10.1 WASTE TREATMENT METHODS**  
  
**WASTE DISPOSAL METHOD :** NOT HAZARDOUS MATERIAL  
**SECTION 13 NOTES :** APPLY NATIONAL/REGIONAL REGULATIONS

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**SDS SECTION 14: TRANSPORT INFORMATION**

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**OTHER INFORMATION :** NOT HAZARDOUS MATERIAL  
**SECTION 14 NOTES :** SEE SECTION 7 HANDLING AND STORAGE.

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**SDS SECTION 15: REGULATORY INFORMATION**

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**15.1 SAFETY, HEALTH AND ENVIRONMENTAL REGULATIONS/LEGISLATION SPECIFIC FOR THE SUBSTANCE OR MIXTURE**  
**15.2 CHEMICAL SAFETY ASSESSMENT**

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**MIRROBOR**  
THE WORLD OF NEUTRON

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## RISK and SAFETY PRECAUTIONS:

- R38: IRRITATING TO THE SKIN
- S8: KEEP CONTAINER DRY
- S9: KEEP CONTAINER IN A WELL-VENTILATED PLACE
- S29: DO NOT EMPTY INTO DRAINS
- 30: NEVER ADD WATER TO THIS PRODUCT
- S37: WEAR SUITABLE GLOVES
- S41: IN CASE OF FIRE AND/OR EXPLOSION DO NOT BREATHE FUMES
- S50: DO NOT MIX WITH ACID, ALKALINE, ORGANIC SOLVENT
- S62: IF SWALLOWED, DO NOT INDUCE VOMITING: SEEK MEDICAL ADVICE IMMEDIATELY
- S63: IN CASE OF ACCIDENT BY INHALATION, REMOVE CASUALTY TO FRESH AIR AND KEEP AT REST
- S64: IF SWALLOWED, RINSE MOUTH WITH WATER (ONLY IF THE PERSON IS CONSCIOUS)

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## SECTION 16: OTHER INFORMATION

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- OTHER INFORMATION** :
- PREPARATION INFORMATION** : PEEL OFF PLASTIC COVERING FOIL ONE SIDE IF NOT NEEDED.
- GENERAL USAGE INFORMATION** : AVOID ANY RUBBING OR SUCH DUST FORMATION EFFECTS  
PLASTIC COVERING FOIL CAN NOT BE USED FOR GLUING OR USE AS AN ADHESIVE SURFACE (REMOVE PLASTIC FOIL BEFORE)  
ADHESIVES OR GLUES TO BE USED: ANY GLUE OR ADHASIVE CAN BE USED EXCEPT ORGANIC, SOLVENT BASE ONES (ANY SILICON BASE OR TWO COMPONENTS EPOXY WERE TESTED WITH GOOD RESULT) DEPENDING ON BEST PRACTICE TO THE MATING SURFACE MATERIAL AND SURFACE FINISH. CAN NOT BE USED UNDER ANY MECHANICAL LOAD SUCH AS SUPPORTING, SUSPENDER IT IS ONLY RECOMMENDED TO AN ADDITIONAL SHIELDING LAYER PURPOSES ADDITIONAL MECHANICAL FASTENING FOR LARGE SURFACES TO COVER RECOMMENDED ACCORDING TO TDS.

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