

**GUARANTY OF CONFORMITY**

All information contained in this document relates to the complete range of our products:

**INSIDE CéRAM™, INSIDE DisRAM™, FILTANIUM™, ISOFLUX™, ETERNIUM™**

Available diameters :

- Ø10-1 ch / Ø10-7 chs
- Ø20-1 ch / Ø20-5 chs / Ø20-13 chs / Ø20-32 chs / Ø20-61 chs
- Ø25-7 chs / Ø25-8 chs / Ø25-11 chs / Ø25-19 chs / Ø25-23 chs / Ø25-49 chs / Ø25-93 chs
- Ø41-25 chs / Ø41-37 chs / Ø41-61 chs

The structure of TAMI ceramic membranes is asymmetrical with circular and non-circular channels. The active surface area is obtained by adding a porous layer upon the support. The pore diameter increases in size when taken from the top of the active layer

The ceramic support is made of Titania.

The active layer is in contact with the fluid and determines porosity (cut-off). The active layer is porous with predetermined diameters permitting the desired molecular sizes to pass through whilst retaining larger sizes. The range of cut-off is:

- |  |   |
|--|---|
| • Fine Ultrafiltration (Fine UF) : 8, 5, 3, 1 kg/mol           | Titania (TiO <sub>2</sub> )                                     |
| • Ultrafiltration (UF) : 500, 300, 150, 100, 50, 10, 15 kg/mol | Titania (TiO <sub>2</sub> ) and/or Zirconia (ZrO <sub>2</sub> ) |
| • Microfiltration (MFT) : 1.4, 0.8, 0.45, 0.3, 0.2, 0.14 µm    | Titania (TiO <sub>2</sub> ) and/or Zirconia (ZrO <sub>2</sub> ) |

For easy recognition, the extremity seals are colour coded:

- gray PTFE for Microfiltration and **ISOFLUX™** membranes
- green PTFE for Ultrafiltration and Fine Ultrafiltration

These extremity seals conform to FDA and BGA specifications for food contact.

It's recommended to clean any new membranes prior to use.

The **ISOFLUX™** membrane ensures a constant permeate flux throughout the membrane. The thickness of the active layer decreases from the inlet to the outlet in order that the ratio pressure / thickness of the layers stays constant.

The **ISOFLUX™** membrane has a direction of flow which is clearly indicated on each membrane, and must be respected.

NYONS January 15, 2019  
Gaëlle Balduchi  
Quality Manager, TAMI INDUSTRIES



## Food Contact Regulations

### INSIDE CéRAM™, INSIDE DisRAM™, FILTANIUM™, ISOFLUX™, ETERNIUM™

The complete range of TAMI Ceramic membranes, housings and gaskets meet the requirements for materials intended to come into contact with food.

#### Acts, Directives, Regulations, Standards:

##### - EU

TAMI Ceramic Membranes satisfy the requirements of European food Regulations (EC) Number 1935/2004 in that:

- ✓ the material composition of membranes satisfy the European Commission Ceramics Directive 84/500/CEE (as amended by 2005/31/EC) following analytical certification of compliance in relation to lead and cadmium leach testing in 4 % acetic acid at 22 °C for 24 hours

##### - EASTERN EUROPE

TAMI Ceramic Membranes are approved by the National Russian Institute of food N° 0412 417

TAMI Ceramic Membranes and gaskets are approved by the National Polish Institute of Hygiene/Department of Food Research N° 04/HT/99.

##### - USA

The material compositions of membranes are listed in the FDA requirements for food contact Federal Register 21 CFR paragraphs 170-199 in that:

- ✓ Titania is approved as an indirect food additive and is listed in 21 CFR section 178.3297
- ✓ Zirconia is present in the positive lists of the, Federal Register N° 177 2910, for materials coming into contact with food products.

TAMI USDA housings conform to 3-A Sanitary Standards (section 45-02).

The stability of our materials has been verified by an independently certified laboratory accredited COFRAC in order to determine the possible migration of constituents including heavy metals (Pb, Cd). Our ceramic membranes were evaluated by using liquid simulants to represent typical membrane applications as well as simulating extreme conditions including time and temperature.

The chemical composition of TAMI gaskets (SILICONE, VITON and HNBR) are made from components complying with FDA norm N°177 2600.

The chemical composition of TAMI gaskets (EPDM, and FFKM) are made from components complying with European food Regulations (EC) Number 1935/2004 and with FDA norm N°177 2600.

#### Quality Certification

The TÜV Rheinland France certifies TAMI INDUSTRIES NYONS to ISO9001:2015 Certificate N° MS10ISO9K 10482 / IDn°9105047253.

The TÜV Thüringen certifies TAMI Deutschland Hermsdorf/Thüringen to ISO9001:2015 Certificate N°TIC15100169625 / ABn°33302R7PA0.

Products are identified either by lot numbers or individual codes in order to obtain complete traceability.