

BENEFITS

- Laser engraving and cutting
- Very thin and flexible
- Excellent for labels
- Fine engraving, neat cutting
- Delivered with adhesive backing

APPLICATIONS

Identification labels, trophy plates, labels for curved surface

SPECIFICATIONS

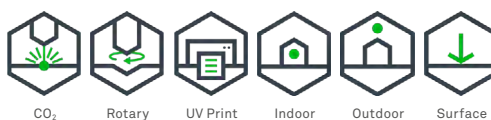
Finish	Matt, Brushed, Glossy
Composition	Acrylic
Engraving depth	0.1 mm (.004")
Full sheet	610 mm x 305 mm (24" x 12")
Half sheet	-
Quarter sheet	-
Other size	-

CAPABILITIES

Interior	■
Exterior	-
Shear	■
Saw	-
Silk screen	-
Hot stamp	-
Heat bending	-
Scratch resistant	-
Flexible	■
Break resistant	-
UV resistant	-
Min. temp.	-40°C (-40°F)
Max. temp.	80°C (176°F)

TECH TIPS

A high resolution material, flexible and laserable.
Metallic colours for your trophy plates.
Delivered with adhesive backing.
For custom colours, see Custom materials on demand p.08.



surface / core colour	0.25 mm (.01")	2-ply
white / black	66984	66984
yellow / black	66985	66985
orange / black	66986	66986
red / white	66997	66997
purple / white	67002*	67002*
apple green / white	67001	67001
pine green / white	71673*	71673*
sky blue / white	67000	67000
blue / white	71670	71670

air force blue / white	71671	71671
brown / white	67004	67004
brushed aluminium / black	66991	66991
glossy silver / black	66990	66990
matt aluminium / black	67558	67558
european gold / black	66989	66989
glossy gold / black	66988	66988
grey / white	67003*	67003*
black / white	66995	66995

*Subject to premature colorfading



Printed colours for indication only. Cannot serve as a substitute for real material sample.



FLEXILASE™

V21-117

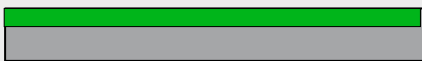


The flexible material for high-definition engraving
La matière flexible pour des gravures haute définition

APPLICATIONS: Identification labels, trophy plates, labels for curved surfaces...

APPLICATIONS : *Étiquettes d'identification, plaques de trophées, étiquettes pour surfaces courbes...*

Surface colour: *Pigments, a few μm* **CROSS SECTION / COUPE DU PRODUIT** Couleur surface : *Pigments, quelques μm*

Engraving colour  Couleur gravure

Acrylic core Base acrylique

SHEAR – <i>Cisaille</i>	◆		SAW – <i>Scie</i>
SILK SCREEN – <i>Sérigraphie</i>			HOT STAMPING – <i>Marquage à chaud</i>
SCRATCH RESISTANT – <i>Résistance à la rayure</i>		◆	FLEXIBLE – <i>Flexible</i>
BREAK RESISTANT – <i>Résistance à la cassure</i>		◆	UV RESISTANT – <i>Résistance aux UV</i>

- Engraving depth: 0.1 mm (0.004")
Profondeur de gravure : 0.1 mm (0.004")
- Storage: Sheltered location, lay flat. Avoid storing straight on the floor.
Stockage : Local abrité, à plat. Éviter un stockage à même le sol.
- Fixing techniques: delivered with self-adhesive backing.
Techniques de fixation : Livré avec adhésif au dos.
- Contact us for any other colour combinations.
Pour toute autre combinaison de couleurs contactez-nous.

www.gravotech.com



FLEXILASE™

TECHNICAL DATA SHEET

SPECIFICATIONS	
MATERIAL – matière	PMMA
FINISH – finition	Matt, glossy, brushed – Mat, brillant, brossé
SHEET SIZE – taille des feuilles	24" x 12" / 610 x 305 mm
THICKNESS – épaisseur	0.1" / 0.25 mm
MARKING METHOD – marquage	Rotary, Laser, UV print – Rotary, Laser, Impression UV
CUTTING DEPTH – profondeur de gravure	(.004") 0.1 mm
TEMPERATURE RANGE – résistance en température	-40°C (-40 °F) to 80° (176°F)
UV RESISTANCE – résistance UV	1400 h QUV or 3 years without significant degradation 1400 h QUV ou 3 ans sans dégradation significative
SCRATCH RESISTANCE – résistance à l'abrasion	Test TABER < 500 cycles CS17 / 250g
FLAMMABILITY – inflammabilité	94 HB on UL94 test

CHEMICAL RESISTANCE	VALUES	ASTM METHOD
SPECIFIC GRAVITY – densité	1.15	ASTM D-792
HARDNESS ROCKWELL – dureté	45M	ASTM D-785
TENSILE STRENGTH – résistance à la traction	38 MPa	ASTM D-638
TENSILE MODULUS – module de traction	1.8 GPa	ASTM D-638
IZOD IMPACT STRENGTH (AT 23°C) – impact au choc IZOD	6.3 KJ/m ²	ASTM D-256
FLEXURAL MODULUS – module de flexion	1.7 GPa	ASTM D-790
FLEXURAL STRENGTH – contrainte de flexion	62 MPa	ASTM D-790
HDT TEMPERATURE AT WHICH MATERIAL DEFLECTS – température de fléchissement sous charge	88°C (1.82MPa) 93°C (0.455Mpa)	ASTM D-648
VICAT SOFTENING POINT – point de ramollissement VICAT	98°C (50°C/hr ;10N) 86°C (50°C/hr ;50N)	ASTM D-1525
COEFFICIENT OF THERMAL EXPANSION – coefficient expansion thermique	0.1x10 ⁻⁵	ASTM D-696
THERMAL CONDUCTIVITY – conductivité thermique	30.6 x10 ³ W/(m ² .K)	ASMT C-177
MELTING TEMPERATURE – température de fusion	235°C	-
SURFACE RESISTIVITY – conductivité surfacique	3.1 x10 ⁷ ohm.m	ASMT D-257
VOLUME RESISTIVITY – conductivité volumique	3.8 x10 ¹¹ ohm.m	ASMT D-257

Gravotech warrants that its products comply with its technical specification within normal condition of use, without any other warranty including without being limited to any other warranty of merchantability, performance or suitability. Technical specifications result from data and technical report raised from suppliers or from Gravotech or external independent laboratory studies. Consequently each end user shall perform appropriate testing under real conditions of use to ensure consistency and adequacy of the product to its intended specific purpose and needs. Out of standard conditions of use as well as harsh conditions such as for example UV, hygrometry, salinity or temperature specifics shall be taken into account to avoid any product deterioration. End User shall be liable regarding its own testing results and therefore its final decision regarding suitability of the product according to Gravotech specifications and recommendation.

Gravotech garantit la conformité des produits à ses seules spécifications techniques dans des conditions normales d'utilisation et sans aucune autre garantie notamment de commercialisation, adaptabilité ou performance. Les spécifications données sont issues d'informations et rapports techniques collectés auprès des fournisseurs, ou de mesures effectuées par Gravotech ou par un laboratoire externe indépendant. Par conséquent il est nécessaire que chaque utilisateur effectue des tests appropriés en conditions réelles d'utilisation afin de s'assurer de l'adéquation du produit à ses besoins et usages spécifiques. Les conditions non standards voire extrêmes concernant notamment les conditions UV, l'hygrométrie, la salinité, ou la température doivent être impérativement prises en considération afin d'éviter toute détérioration du produit. L'utilisateur sera seul responsable du résultat de ces tests et du choix du produit adapté selon les recommandations et spécifications fournies par Gravotech.



SAFETY DATA SHEET

(REACH regulation (EC) n° 1907/2006 - n° 2015/830)

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

1.1. Product identifier

Product name : FLEXILASE

Product code : GRAV 046.1.

1.2. Relevant identified uses of the substance or mixture and uses advised against

Material dedicated for laser cutting and engraving.

1.3. Details of the supplier of the safety data sheet

Registered company name : GRAVOTECH MARKING SAS.

Address : 56, avenue Jean Jaurès.10600.La Chapelle Saint Luc.France.

Telephone : +33 (0)3 25 41 65 65. Fax : +33 (0)3 25 79 04 25.

e-mail : info@gravograph.fr

<http://www.gravograph.com>

1.4. Emergency telephone number : +33 (0)1 45 42 59 59.

Association/Organisation : INRS / ORFILA <http://www.centres-antipoison.net>.

SECTION 2 : HAZARDS IDENTIFICATION

2.1. Classification of the substance or mixture

In compliance with EC regulation No. 1272/2008 and its amendments.

This mixture does not present a physical hazard. Refer to the recommendations regarding the other products present on the site.

This mixture does not present a health hazard with the exception of possible occupational exposure thresholds (see paragraphs 3 and 8).

This mixture does not present an environmental hazard. No known or foreseeable environmental damage under standard conditions of use.

2.2. Label elements

In compliance with EC regulation No. 1272/2008 and its amendments.

No labelling requirements for this mixture.

2.3. Other hazards

The mixture does not contain substances classified as 'Substances of Very High Concern' (SVHC) $\geq 0.1\%$ published by the European Chemicals Agency (ECHA) under article 57 of REACH: <http://echa.europa.eu/fr/candidate-list-table>

The mixture fulfils neither the PBT nor the vPvB criteria for mixtures in accordance with annexe XIII of the REACH regulations EC 1907/2006.

SECTION 3 : COMPOSITION/INFORMATION ON INGREDIENTS

3.2. Mixtures

No substances fulfil the criteria set forth in annexe II section A of the REACH regulation (EC) n° 1907/2006.

SECTION 4 : FIRST AID MEASURES

As a general rule, in case of doubt or if symptoms persist, always call a doctor.

NEVER induce swallowing by an unconscious person.

4.1. Description of first aid measures

In the event of exposure by inhalation :

If a large quantity of dust is inhaled, move the patient into the fresh air and keep him/her warm and still.

In the event of splashes or contact with eyes :

Wash thoroughly with fresh, clean water for 15 minutes holding the eyelids open.

If there is any redness, pain or visual impairment, consult an ophthalmologist.

In the event of splashes or contact with skin :

Watch out for any remaining product between skin and clothing, watches, shoes, etc.

In case of contact with hot material, cool quickly with cold water. If burn is serious, consult a physician.

In the event of swallowing :

Seek medical attention, showing the label.

4.2. Most important symptoms and effects, both acute and delayed

No data available.

4.3. Indication of any immediate medical attention and special treatment needed

No data available.

SECTION 5 : FIREFIGHTING MEASURES

Non-flammable.

5.1. Extinguishing media

No data available.

5.2. Special hazards arising from the substance or mixture

A fire will often produce a thick black smoke. Exposure to decomposition products may be hazardous to health.

Do not breathe in smoke.

In the event of a fire, the following may be formed :

- carbon monoxide (CO)
- carbon dioxide (CO₂)

5.3. Advice for firefighters

Due to the toxicity of the gas emitted on thermal decomposition of the products, fire-fighting personnel are to be equipped with autonomous insulating breathing apparatus.

SECTION 6 : ACCIDENTAL RELEASE MEASURES

6.1. Personal precautions, protective equipment and emergency procedures

Consult the safety measures listed under headings 7 and 8.

For first aid worker

First aid workers will be equipped with suitable personal protective equipment (See section 8).

6.2. Environmental precautions

Prevent any material from entering drains or waterways.

6.3. Methods and material for containment and cleaning up

Retrieve the product by mechanical means (sweeping/vacuuming).

6.4. Reference to other sections

No data available.

SECTION 7 : HANDLING AND STORAGE

Requirements relating to storage premises apply to all facilities where the mixture is handled.

7.1. Precautions for safe handling

Always wash hands after handling.

Fire prevention :

Prevent access by unauthorised personnel.

Recommended equipment and procedures :

For personal protection, see section 8.

Observe precautions stated on label and also industrial safety regulations.

Prohibited equipment and procedures :

No smoking, eating or drinking in areas where the mixture is used.

7.2. Conditions for safe storage, including any incompatibilities

No data available.

Packaging

Always keep in packaging made of an identical material to the original.

7.3. Specific end use(s)

No data available.

SECTION 8 : EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1. Control parameters

No data available.

8.2. Exposure controls

Personal protection measures, such as personal protective equipment

Pictogram(s) indicating the obligation of wearing personal protective equipment (PPE) :



Use personal protective equipment that is clean and has been properly maintained.

Store personal protective equipment in a clean place, away from the work area.

Never eat, drink or smoke during use. Remove and wash contaminated clothing before re-using. Ensure that there is adequate ventilation, especially in confined areas.

- Eye / face protection

Avoid contact with eyes.

Before handling powders or dust emission, wear mask goggles in accordance with standard EN166.

- Hand protection

Wear suitable protective gloves in the event of prolonged or repeated skin contact.

- Body protection

Work clothing worn by personnel shall be laundered regularly.

After contact with the product, all parts of the body that have been soiled must be washed.

- Respiratory protection

Avoid breathing dust.

Type of FFP mask :

Wear a disposable half-mask dust filter in accordance with standard EN149.

SECTION 9 : PHYSICAL AND CHEMICAL PROPERTIES

9.1. Information on basic physical and chemical properties

General information :

Physical state :	Solid.
Colour:	Various.
Odour:	Odourless.

Important health, safety and environmental information

pH :	Not relevant.
Flash point interval :	Not relevant.
Vapour pressure (50°C) :	Not relevant.
Density :	> 1
Water solubility :	Insoluble.

9.2. Other information

No data available.

SECTION 10 : STABILITY AND REACTIVITY

10.1. Reactivity

No data available.

10.2. Chemical stability

This mixture is stable under the recommended handling and storage conditions in section 7.

10.3. Possibility of hazardous reactions

No data available.

10.4. Conditions to avoid

Avoid :

- formation of dusts
- heat

Do not heat above 300 ° C: decomposition of the mixture.

10.5. Incompatible materials

No data available.

10.6. Hazardous decomposition products

The thermal decomposition may release/form :

- carbon monoxide (CO)
- carbon dioxide (CO₂)

SECTION 11 : TOXICOLOGICAL INFORMATION

11.1. Information on toxicological effects

No data available.

11.1.1. Substances

No toxicological data available for the substances.

11.1.2. Mixture

No toxicological data available for the mixture.

SECTION 12 : ECOLOGICAL INFORMATION

12.1. Toxicity

12.1.2. Mixtures

No aquatic toxicity data available for the mixture.

12.2. Persistence and degradability

Not biodegradable.

12.3. Bioaccumulative potential

No data available.

12.4. Mobility in soil

No data available.

12.5. Results of PBT and vPvB assessment

No data available.

12.6. Other adverse effects

No data available.

German regulations concerning the classification of hazards for water (WGK) :

WGK 2 (VwVwS vom 27/07/2005, KBws) : Hazardous for water.

SECTION 13 : DISPOSAL CONSIDERATIONS

Proper waste management of the mixture and/or its container must be determined in accordance with Directive 2008/98/EC.

13.1. Waste treatment methods

Do not pour into drains or waterways.

Waste :

Waste management is carried out without endangering human health, without harming the environment and, in particular without risk to water, air, soil, plants or animals.

Recycle or dispose of waste in compliance with current legislation, preferably via a certified collector or company.

Do not contaminate the ground or water with waste, do not dispose of waste into the environment.

Soiled packaging :

Empty container completely. Keep label(s) on container.

Give to a certified disposal contractor.

SECTION 14 : TRANSPORT INFORMATION

Exempt from transport classification and labelling.

14.1. UN number

-

14.2. UN proper shipping name

-

14.3. Transport hazard class(es)

-

14.4. Packing group

-

14.5. Environmental hazards

-

14.6. Special precautions for user

-

SECTION 15 : REGULATORY INFORMATION**15.1. Safety, health and environmental regulations/legislation specific for the substance or mixture****- Classification and labelling information included in section 2:**

The following regulations have been used:

- EU Regulation No. 1272/2008 amended by EU Regulation No. 2017/776 (ATP 10)

- Container information:

No data available.

- Particular provisions :

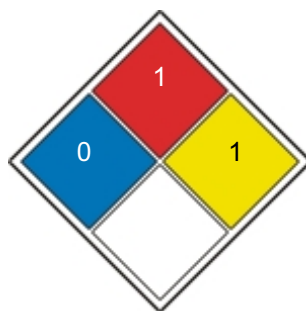
No data available.

- German regulations concerning the classification of hazards for water (WGK) :

WGK 2 (VwVwS vom 27/07/2005, KBws) : Hazardous for water.

- Standardised American system for the identification of hazards presented by the product in view of emergency procedures (NFPA 704) :

NFPA 704, Labelling: Health=0 Inflammability=1 Instability/Reactivity=1 Specific Risk=none

**15.2. Chemical safety assessment**

No data available.

SECTION 16 : OTHER INFORMATION

Since the user's working conditions are not known by us, the information supplied on this safety data sheet is based on our current level of knowledge and on national and community regulations.

The mixture must not be used for other uses than those specified in section 1 without having first obtained written handling instructions.

It is at all times the responsibility of the user to take all necessary measures to comply with legal requirements and local regulations.

The information in this safety data sheet must be regarded as a description of the safety requirements relating to the mixture and not as a guarantee of the properties thereof.

Abbreviations :

ADR : European agreement concerning the international carriage of dangerous goods by Road.

IMDG : International Maritime Dangerous Goods.

IATA : International Air Transport Association.

ICAO : International Civil Aviation Organisation

RID : Regulations concerning the International carriage of Dangerous goods by rail.

WGK : Wassergefährdungsklasse (Water Hazard Class).

PBT: Persistent, bioaccumulable and toxic.

vPvB : Very persistent, very bioaccumulable.

SVHC : Substances of very high concern.