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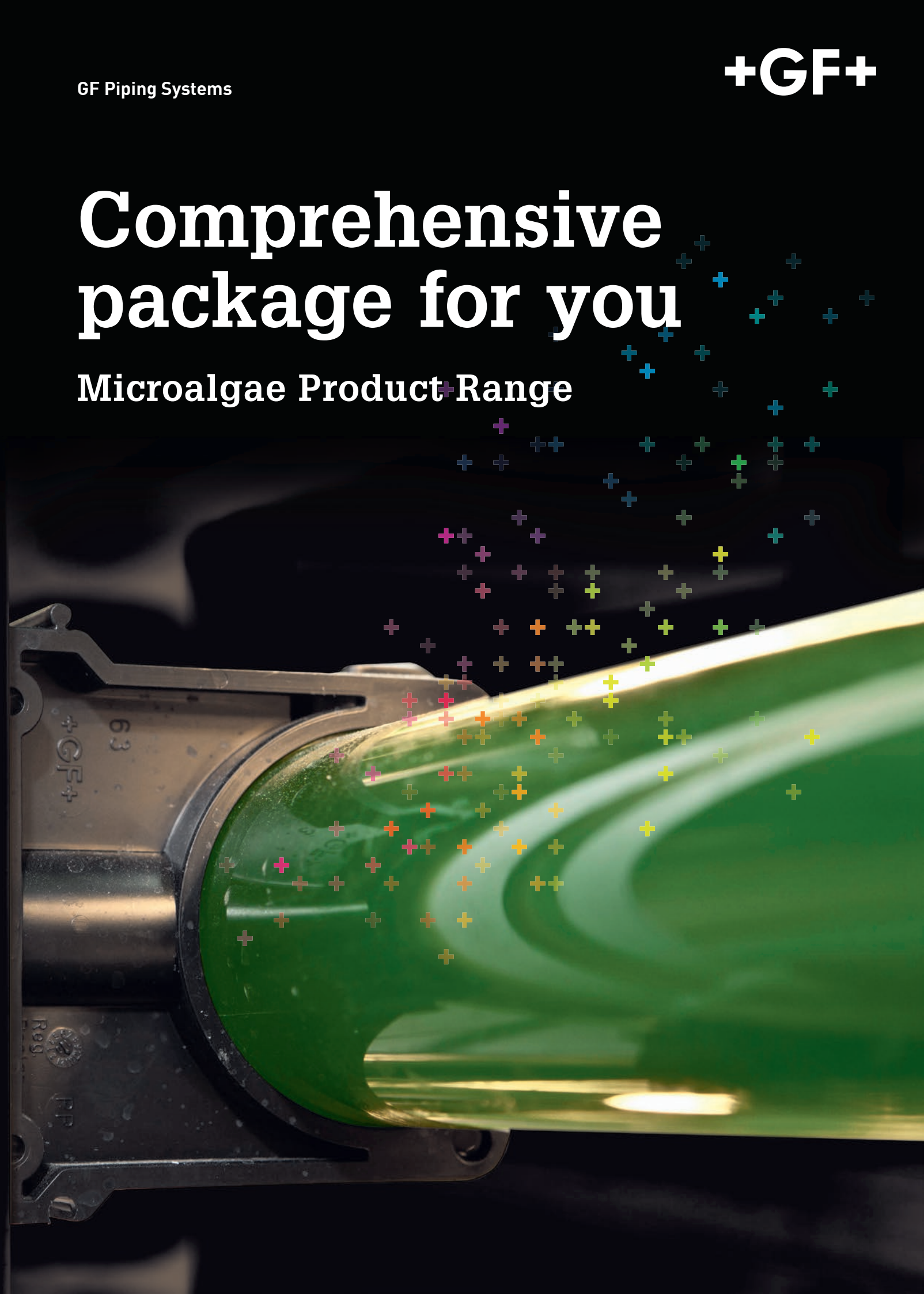
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# Comprehensive package for you

## Microalgae Product Range



# PBR-concepts allow a very efficient cultivation process

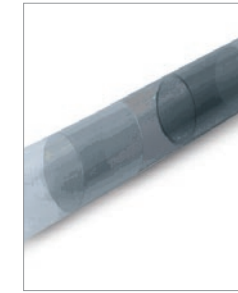
GF Piping Systems is the world's leading photo-bioreactor system supplier. Our comprehensive portfolio extends from individual components and fabricated subassemblies to complete contract manufacturing of PBR systems. Choose GF Piping Systems for your PBR pipes, fittings, manual and actuated valves, sensors and instrumentation. Benefit from customized spool pieces and headers or from turnkey manufacturing capabilities meeting your entire system need. With GF Piping Systems as your partner, you can rely on high-quality products, expert workmanship, design assistance and integrity to protect intellectual property.

## Our comprehensive portfolio

We offer a wide selection of standard Schedule 40 and 80 PVC pipes from 1/8" to 24", plus the EnviroKing UV and the clear PVC pipe family in the dimension range 1/2" to 12".



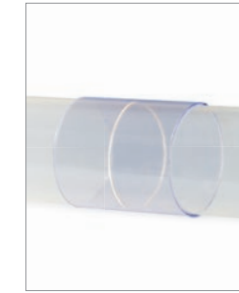
**System range**  
Choose Dekadur G, EnviroKing UV ThinWall or Schedule 40.



**Customized Filter**  
Adapt the light source to the specific needs of your algae strain.



**Static Mixer**  
Improve temperature and nutrient mixing with simple ID installation.



**Push-Fit Jointing**  
Extend pipe length with Push-Fit twin socket jointing.



**Designed U-Bends**  
Decrease pressure losses and increase light exposure.

## Dekadur G

### + Benefits

- Optimal thermoforming
- Smooth inner surfaces reducing surface build up
- Dedicated optical properties for algae growth
- Superior chemical resistance (pH shifts, CIP process)
- Compatibility with optical functionalizers
- Variable jointing possibilities (welding, solvent cement, push-fit)
- Flexible concepts for durable UV protection
- European food approval available upon request
- Pipes can be dimensioned according to well-established DIN 8061/62 standards for PVC-U pressure pipes up to T = 40°C

Range (mm)

Pipe Size *	Pipe Codes	Bends Codes	O.D.	Average I.D.	Min. Wall
63	325063097	325063082	63	60.6	1.2
110	325110065	325110070	110	106.6	1.7

\* Other dimensions available upon request

## EnviroKing UV - ThinWall

### + Benefits

EnviroKing ThinWall is a low-pressure containment pipe, manufactured in IPS sizes and specifically optimized for use in photo-bioreactor applications.

- Improved transmission characteristics
- Chemical and corrosion-resistant
- Non-conductive
- Lightweight, easy to handle and install
- Lower overall costs of installation than glass, acrylic or other transparent alternatives
- Compatible with standard Schedule PVC fittings and valves

Range (inches)

Pipe Size	Pipe Codes	Nominal Pipe Size	O.D.	Average I.D.	Min. Wall	Nominal Wt./Ft.	Max. W.P. PSI **
2	HTW00200EK1000	2	2.375	2.173	0.091	0.456	80
3	HTW00300EK1000	3	3.500	3.210	0.135	0.966	80
4	HTW00400EK1000	4	4.500	4.134	0.173	1.569	80
6	HTW00600EK1000	6	6.625	6.251	0.172	2.391	70
8	HTW00800EK1000	8	8.625	8.251	0.172	3.134	53
10	HTW01000EK1000	10	10.750	10.376	0.172	3.923	43
12	HTW01200EK1000	12	12.750	12.376	0.172	4.666	36

\*\* Pressure ratings shown are for water, non-shock at 73°F

## EnviroKing UV - Schedule 40

### + Benefits

In addition to ThinWall, EnviroKing UV is also manufactured in IPS sizes to Schedule 40 dimensions, which provide sufficient wall thickness for algae systems.

- Chemical and corrosion-resistant
- Non-conductive
- Lightweight, easy to handle and install
- Lower overall costs of installation than glass, acrylic or other transparent alternatives
- Manufactured in IPS dimensions
- Fully compatible with standard Schedule PVC pipes, fittings and valves

Range (inches)

Pipe Size	Pipe Codes	Nominal Pipe Size	O.D.	Average I.D.	Min. Wall	Nominal Wt./Ft.	Max. W.P. PSI **
1/2	H0400050EK1000	1/2	0.840	0.602	0.109	0.170	300
3/4	H0400075EK1000	3/4	1.050	0.804	0.113	0.226	240
1	H0400100EK1000	1	1.315	1.029	0.133	0.333	220
1 1/4	H0400125EK1000	1 1/4	1.660	1.360	0.140	0.450	180
1 1/2	H0400150EK1000	1 1/2	1.900	1.590	0.145	0.537	170
2	H0400200EK1000	2	2.375	2.047	0.154	0.720	140
2 1/2	H0400250EK1000	2 1/2	2.875	2.445	0.203	1.136	150
3	H0400300EK1000	3	3.500	3.042	0.216	1.488	130
3 1/2	H0400350EK1000	3 1/2	4.000	3.521	0.226	1.789	120
4	H0400400EK1000	4	4.500	3.998	0.237	2.118	110
6	H0400600EK1000	6	6.625	6.031	0.280	3.733	90

\*\* Pressure ratings shown are for water, non-shock at 73°F