

# biocrates kit technology

The gold standard in quantitative metabolomics

[biocrates.com](https://www.biocrates.com)

## Mass spectrometry-based metabolomics kits



Ready-to-use



Automated  
workflow



Standardized,  
quantitative



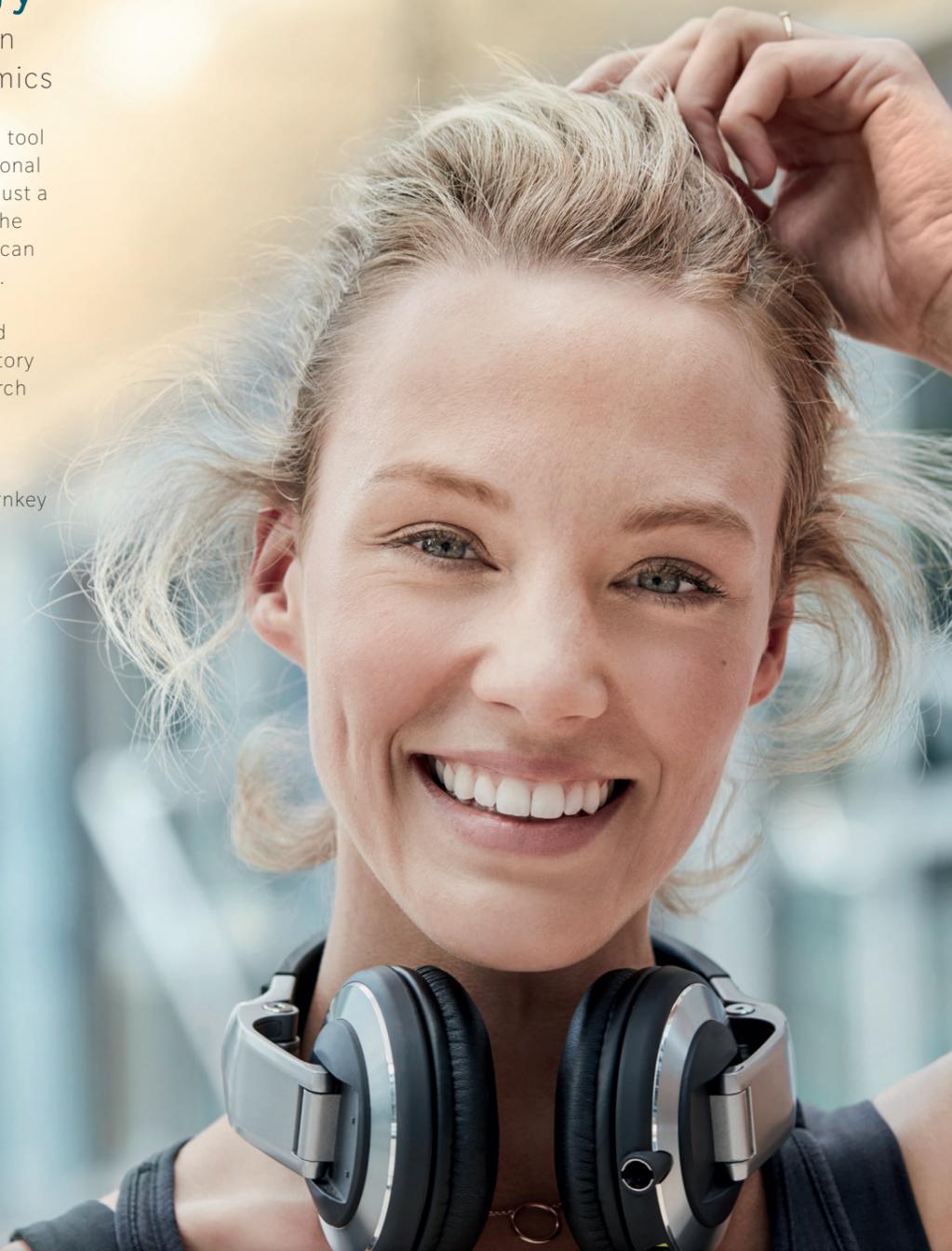
High  
throughput

# biocrates kit technology

The gold standard in targeted metabolomics

Metabolomics is a powerful tool to answer the multidimensional questions of biology. From just a few microliters of sample, the phenotype of an individual can be uncovered and explored. Metabolomics is key to generating high-quality and reliable data that is mandatory for today's biological research and individualized health.

biocrates provides you with metabolomics kits – the turnkey solution for the success of your metabolomics study.



## Why use metabolomics kits



### Ready-to-use

- ▶ Fully integrated workflow in one box (reagents, consumables, LC-MS methods, workflow manager MetIDQ™ software)
- ▶ Kit implementation in less than 2 days (no method optimization required)



### High throughput with minimal sample volume

- ▶ Hundreds of samples per week with only 10 µL biofluid per sample
- ▶ Ability to measure metabolites in many matrices and species on a single plate



### Automated and guided workflow

- ▶ Validated and easy-to-use sample extraction protocols
- ▶ Workflow manager MetIDQ™ allows data export in various file formats for statistical analysis
- ▶ Automated quantification and technical validation

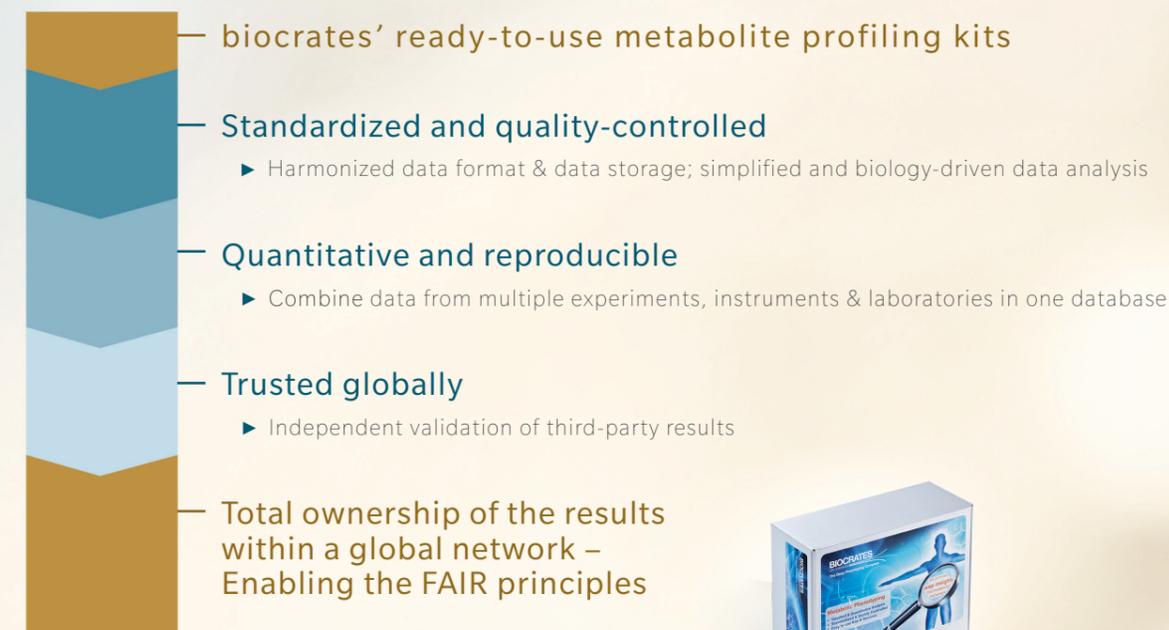


### Standardized, quantitative and quality-controlled

- ▶ Absolute quantification and highly reproducible data
- ▶ Quality controls for performance check and data normalization
- ▶ Designed for longitudinal studies and inter-lab comparability

## Use kits locally to connect science globally

Connected data brings your research to a new level



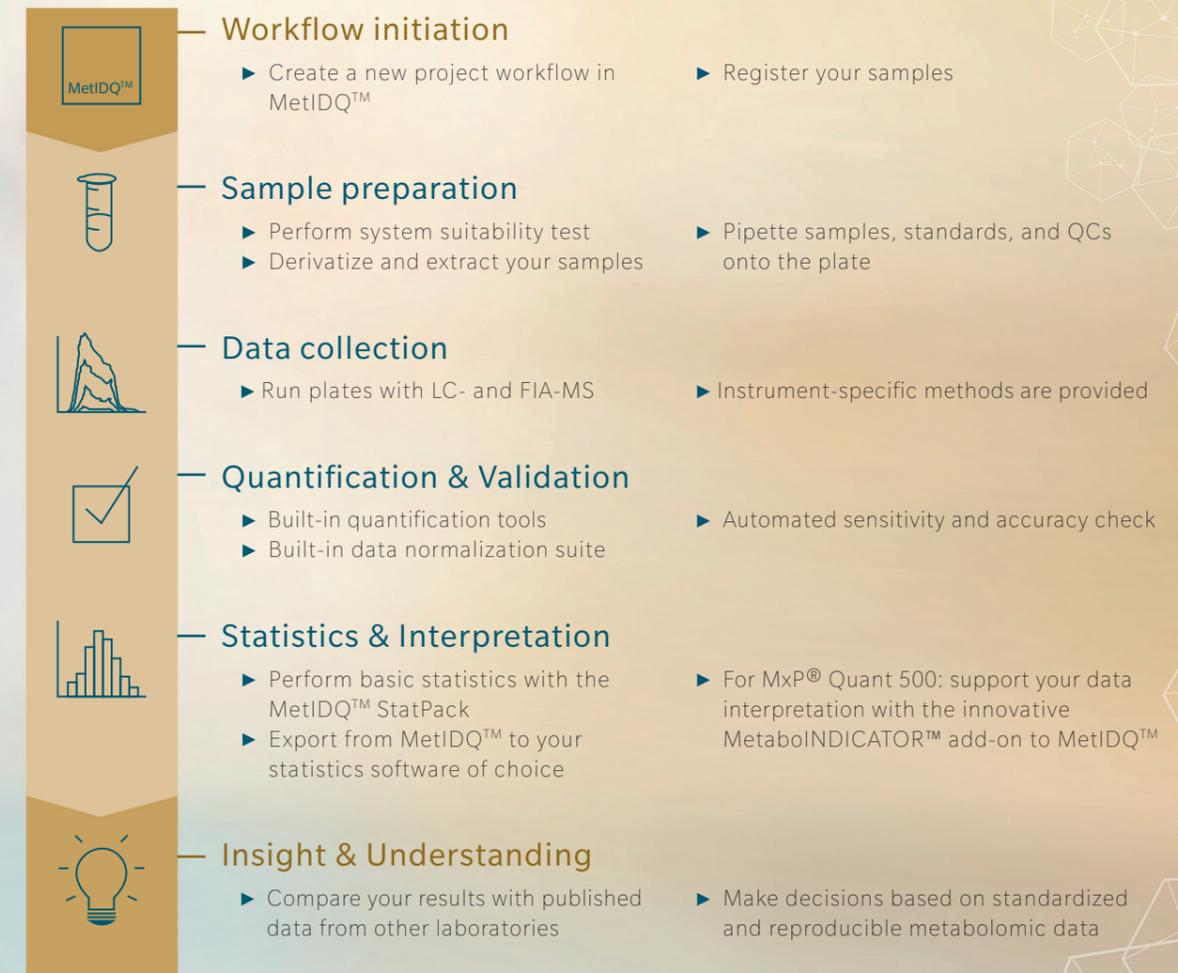
## More information



Visit our website to find out more about metabolomics and our products [biocrates.com](http://biocrates.com)

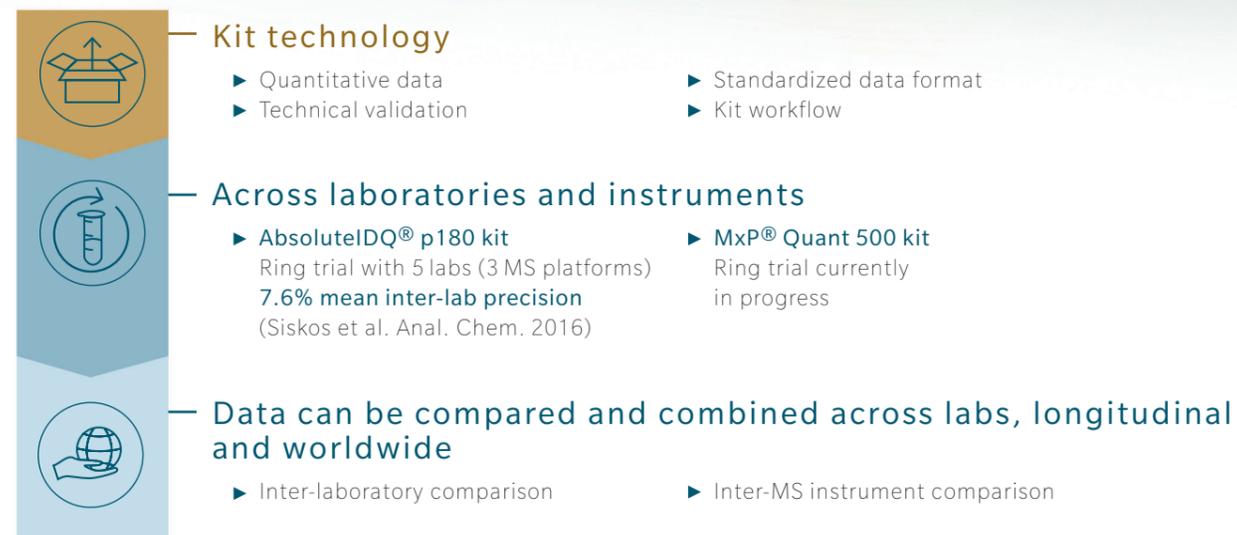


# Mass spectrometry-based metabolomics kits – Workflow



## Reliable data for sustained scientific impact

Standardization for increased reliability



## Workflow manager MetIDQ™

biocrates kit technology is the product of years of experience in quantitative targeted metabolomics.

The workflow manager MetIDQ™ guides you through the whole process from sample registration to data normalization, increasing process safety and robustness.

The kits comprise all instrument-specific acquisition methods, including all MRM transitions and optimized MS and chromatography parameters. This allow a quick and easy kit setup without the need for extensive method development.



# More than metabolites

Our specialized software module MetaboINDICATOR™ automatically calculates and reports more than 230 relevant metabolite sums and ratios from data generated with the MxP® Quant 500 kit. This adaptable feature also allows the user to define new sums and ratios to explore new biochemical aspects of the data.

 <p>Fischer et al. 1974.</p>	<p><b>Fischer ratio</b></p> <div style="border: 1px solid black; padding: 5px; text-align: center;"> <math display="block">\frac{\text{BCAA (Val + Leu + Ile)}}{\text{AAA (Phe + Try + Trp)}}</math> </div> <p>↓ ratio ↑ severity of liver failure</p>	 <p>Hornýák et al. 2018.</p>	<p><b>IDO activity</b></p> <div style="border: 1px solid black; padding: 5px; text-align: center;"> <math display="block">\frac{\text{Kynurenine (Kyn)}}{\text{Tryptophan (Trp)}}</math> </div> <p>↑ ratio ↑ cancer invasiveness &amp; progression</p>
 <p>Paapstel et al. 2018.</p>	<p><b>Phospholipase A2 activity</b></p> <div style="border: 1px solid black; padding: 5px; text-align: center;"> <math display="block">\frac{\text{Lysophosphatidylcholines (LPCs)}}{\text{Phosphatidylcholines (PCs)}}</math> </div> <p>↑ ratio ↑ inflammation and CVD</p>	 <p>Nho et al. 2019.</p>	<p><b>Gut bacterial profile</b></p> <div style="border: 1px solid black; padding: 5px; text-align: center;"> <math display="block">\frac{\text{Secondary bile acids}}{\text{Primary bile acids}}</math> </div> <p>↑ ratio ↑ cytotoxicity ▶ NAFLD, AD, cancer</p>

# Exploring your data

No matter which way you choose to generate your data, we offer a variety of data analysis and interpretation options when you need it. This shortens your time to finalize your project and gives you the freedom to explore the future of research and health.

## Data only

- ▶ Raw data processing
- ▶ Quality control
- ▶ Data normalization

## Statistical package

- ▶ Data processing (e. g. handling of values < LOD, outlier detection, log transformation)
- ▶ MetaboINDICATOR™\* (i. e. calculation of metabolite sums and ratios incl. background information)
- ▶ Descriptive statistics (e. g. mean, median, SD, IQR)
- ▶ Univariate statistics
- ▶ Significance testing (e. g. p-values, false discovery rates)
- ▶ Fold changes
- ▶ Multivariate statistics (e. g. PCA, PLSDA, cluster analysis)
- ▶ Data visualization (e. g. box plots, score plots, heatmaps)

## Data interpretation

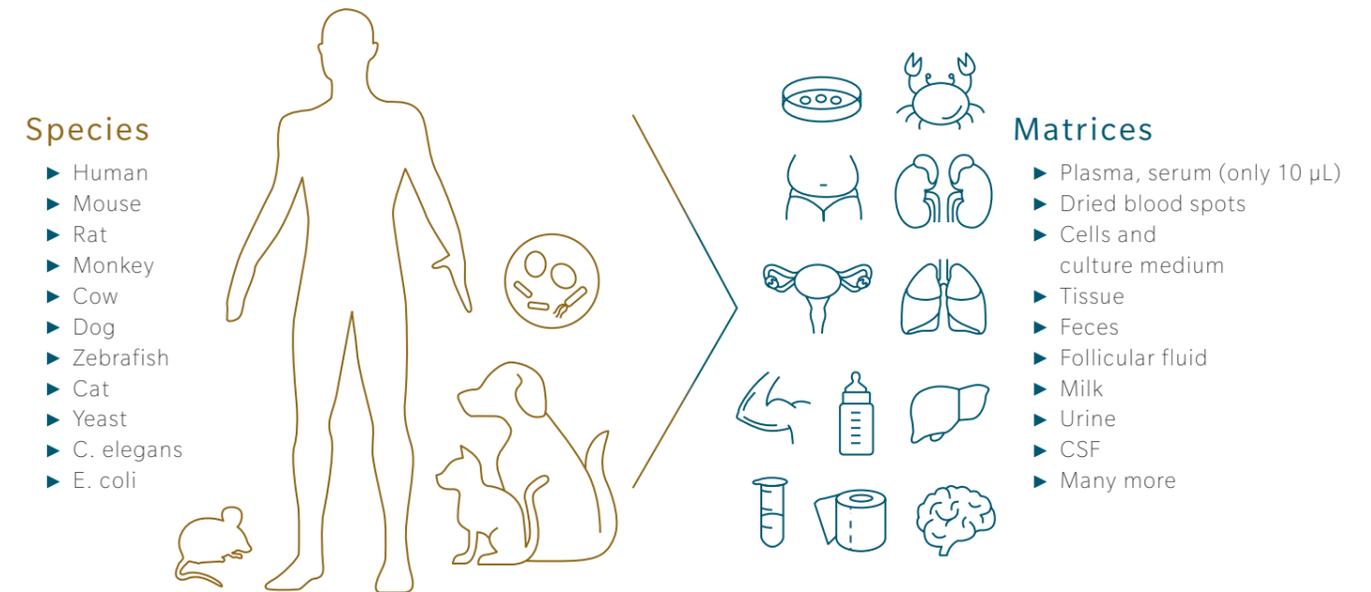
- ▶ Pathway analysis
- ▶ Biochemical interpretation (e. g. consideration of specific metabolite sums)
- ▶ Literature research

\*Currently available for MxP® Quant 500 only

# Metabolomics – The universal language of biology

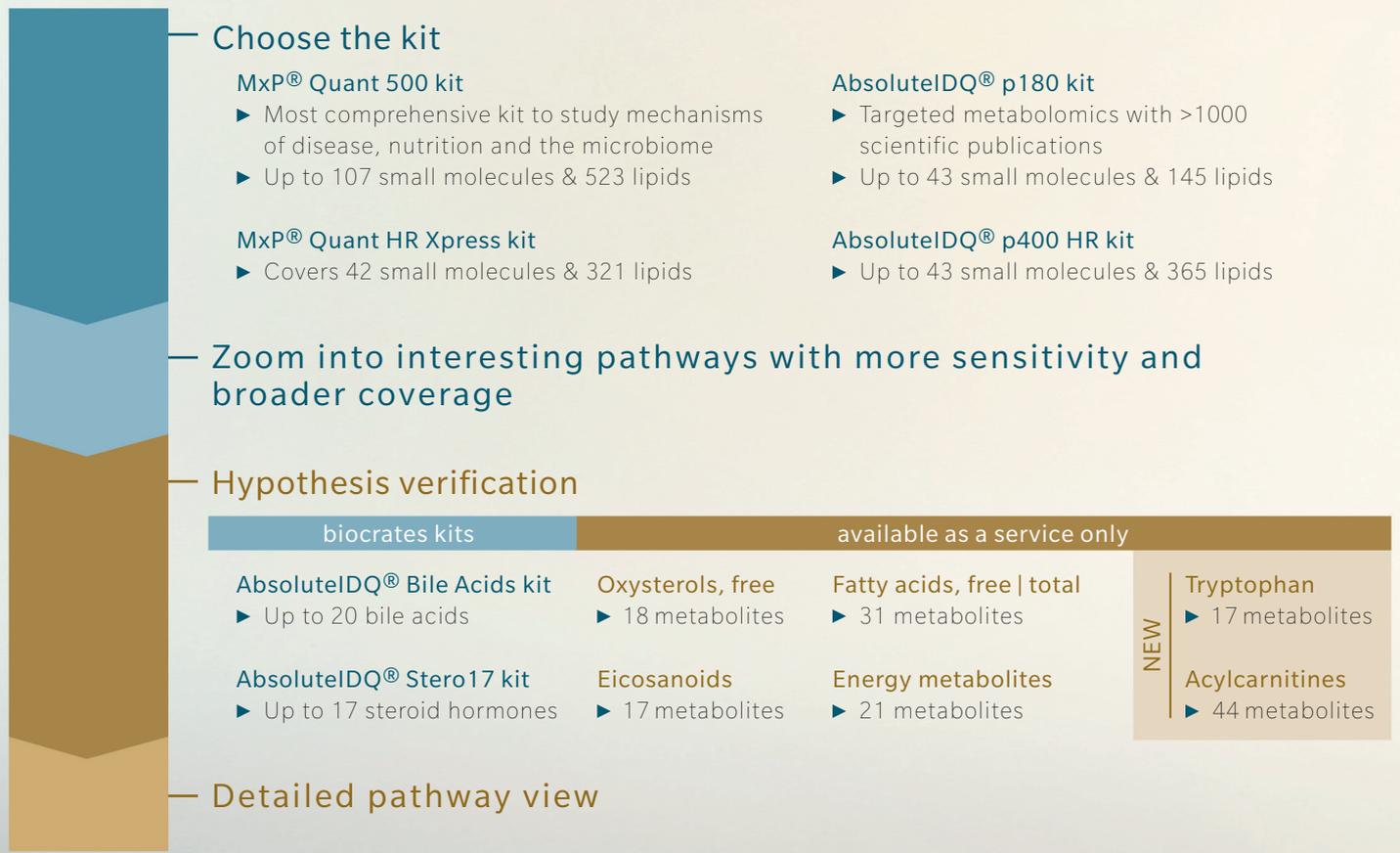
Connecting biological systems

Application of metabolomics is feasible for a wide range of sample matrices and species. Which samples do you work with?



# Zoom into your favorite pathway

From hypothesis generation to verification



## Read more



biocrates  
list of metabolites

More than 1,000 metabolites accessible through targeted metabolomics

[biocrates.com/metabolites](https://biocrates.com/metabolites)



Applications of  
metabolomics

Understand where metabolomics is already changing lives today

[biocrates.com/applications](https://biocrates.com/applications)



Our technology

Get a detailed view of how you can implement our kits in your laboratory and which kit is best to choose for your application.

[biocrates.com/our-technology](https://biocrates.com/our-technology)



Compatibility

Mass spectrometry systems

[biocrates.com/compatibility](https://biocrates.com/compatibility)

Last revised 01/2021