

INDUSTRIAL BIOTECHNOLOGY • MICROBIAL VITAMIN SKILL DEVELOPMENT



NTHRYS
OPC PVT LTD



Microbial Vitamins Industrial Manufacturing Training Programs

A complete industrial catalogue of hands-on microbial vitamin fermentation training modules — from riboflavin & B12 to vitamin K2 & CoQ10.

55

PROGRAMS

10

CATEGORIES

2026

EDITION

Program Categories at a Glance

This catalogue lists every fermentation-derived vitamin and coenzyme our training programs are equipped to manufacture and teach, organised into 10 technology streams. Each program carries a unique product code for easy reference, enrolment and certification.

STREAM	CATEGORY FOCUS	DESCRIPTION	COUNT
NMV-RB	Riboflavin (Vitamin B2)	Fungal & bacterial riboflavin production	5
NMV-12	Vitamin B12 (Cobalamin)	Cobalamin fermentation & active-form production	5
NMV-BC	Other B-Complex Vitamins	Biotin, folate, niacin & pantothenate production	6
NMV-K2	Vitamin K2 (Menaquinone)	MK-7 & menaquinone fermentation production	5
NMV-VC	Vitamin C (Ascorbic Acid) Fermentation	2-KGA, sorbose & ascorbate production	5
NMV-FS	Provitamins & Fat-Soluble Vitamins	Carotenoid, ergosterol & tocopherol production	5
NMV-CO	Coenzymes & Vitamin-Like Nutrients	CoQ10, PQQ, inositol & carnitine production	6
NMV-PR	Production Strains & Fermentation Technology	Fungal, bacterial & engineered-strain production	6
NMV-DS	Downstream Recovery & Purification	Extraction, crystallisation & stabilisation	6
NMV-FT	Grades, Formulation & Application	Feed, food, pharma & beadlet grade finishing	6
Total training programs			55

HOW TO READ A CODE

NMV – RB – 01

NMV Nthrys Microbial-Vitamin Program RB Category stream 01 Program number

01

CATEGORY • NMV-RB

Riboflavin (Vitamin B2)

Fungal & bacterial riboflavin production

5

PROGRAMS

CODE	TRAINING PROGRAM	DESCRIPTION
NMV-RB-01	Riboflavin (Ashbya gossypii)	Fungal-fermentation riboflavin.
NMV-RB-02	Riboflavin (Bacillus subtilis)	Engineered-bacterial riboflavin.
NMV-RB-03	Feed-Grade Riboflavin	Animal-nutrition B2.
NMV-RB-04	Riboflavin-5-Phosphate	Soluble FMN sodium salt.
NMV-RB-05	Food / Pharma Riboflavin	High-purity B2 grade.

02

CATEGORY • NMV-12

Vitamin B12 (Cobalamin)

Cobalamin fermentation & active-form production

5

PROGRAMS

CODE	TRAINING PROGRAM	DESCRIPTION
NMV-12-01	Cyanocobalamin (Fermentation)	Standard fermentative B12.
NMV-12-02	Methylcobalamin	Active methyl-B12 form.
NMV-12-03	Hydroxocobalamin	Hydroxy-B12 form.
NMV-12-04	Adenosylcobalamin	Coenzyme-B12 form.
NMV-12-05	Feed-Grade B12 Concentrate	Animal-nutrition B12.

03

CATEGORY • NMV-BC

Other B-Complex Vitamins

Biotin, folate, niacin & pantothenate production

6

PROGRAMS

CODE	TRAINING PROGRAM	DESCRIPTION
NMV-BC-01	Biotin (Vitamin B7)	Fermentative biotin.
NMV-BC-02	Folate (Vitamin B9)	Natural-folate / 5-MTHF.
NMV-BC-03	Niacin / Niacinamide (B3)	Fermentative niacin.
NMV-BC-04	Pantothenic Acid (B5)	D-pantothenate production.
NMV-BC-05	Pyridoxine (B6)	Fermentative B6.
NMV-BC-06	Thiamine (B1)	Fermentative thiamine.

04

CATEGORY • NMV-K2

Vitamin K2 (Menaquinone)

MK-7 & menaquinone fermentation production

5

PROGRAMS

CODE	TRAINING PROGRAM	DESCRIPTION
NMV-K2-01	MK-7 (Bacillus natto)	Natto-fermentation menaquinone-7.
NMV-K2-02	MK-4	Short-chain menaquinone-4.
NMV-K2-03	Mixed Menaquinones	Broad-spectrum K2 blend.
NMV-K2-04	Oil-Based K2 Concentrate	Lipid-soluble K2 product.
NMV-K2-05	Microencapsulated K2 Powder	Stabilised K2 powder.

05

CATEGORY • NMV-VC

Vitamin C (Ascorbic Acid) Fermentation

2-KGA, sorbose & ascorbate production

5

PROGRAMS

CODE	TRAINING PROGRAM	DESCRIPTION
NMV-VC-01	2-Keto-L-Gulonic Acid (2-KGA)	Ascorbate fermentation intermediate.
NMV-VC-02	L-Sorbose (Fermentation)	Reichstein-route sorbose.
NMV-VC-03	One-Step / Two-Step Fermentation	Direct 2-KGA processes.
NMV-VC-04	Ascorbic Acid (Finished)	Crystalline vitamin C.
NMV-VC-05	Sodium / Calcium Ascorbate	Buffered ascorbate salts.

06

CATEGORY • NMV-FS

Provitamins & Fat-Soluble Vitamins

Carotenoid, ergosterol & tocopherol production

5

PROGRAMS

CODE	TRAINING PROGRAM	DESCRIPTION
NMV-FS-01	Provitamin A (Beta-Carotene)	Carotenoid provitamin A.
NMV-FS-02	Provitamin D (Ergosterol)	Yeast-derived ergosterol.
NMV-FS-03	Vitamin D2 (Ergocalciferol)	UV-converted yeast vitamin D2.
NMV-FS-04	Vitamin E (Tocopherol)	Fermentative / bio-tocopherol.
NMV-FS-05	Vitamin K1 (Phylloquinone)	Plant / algal phylloquinone.

07

CATEGORY • NMV-CO

Coenzymes & Vitamin-Like Nutrients

CoQ10, PQQ, inositol & carnitine production

6

PROGRAMS

CODE	TRAINING PROGRAM	DESCRIPTION
NMV-CO-01	Coenzyme Q10 (Ubiquinone)	Fermentative CoQ10.
NMV-CO-02	PQQ	Fermentative pyrroloquinoline quinone.
NMV-CO-03	Alpha-Lipoic Acid	Antioxidant coenzyme.
NMV-CO-04	Inositol	Fermentative myo-inositol.
NMV-CO-05	L-Carnitine	Fermentative carnitine.
NMV-CO-06	Choline / Betaine	Methyl-donor nutrient.

08

CATEGORY • NMV-PR

Production Strains & Fermentation Technology

Fungal, bacterial & engineered-strain production

6

PROGRAMS

CODE	TRAINING PROGRAM	DESCRIPTION
NMV-PR-01	Fungal Vitamin Production	Ashbya / Aspergillus process.
NMV-PR-02	Bacterial Vitamin Production	Bacillus / Propionibacterium process.
NMV-PR-03	Engineered-Strain Production	Recombinant overproducer hosts.
NMV-PR-04	Strain Development & Screening	Mutagenesis & selection.
NMV-PR-05	Fed-Batch Fermentation Process	Industrial fed-batch process.
NMV-PR-06	Media & Precursor Optimisation	Substrate & precursor feeding.

09

CATEGORY • NMV-DS

Downstream Recovery & Purification

Extraction, crystallisation & stabilisation

6

PROGRAMS

CODE	TRAINING PROGRAM	DESCRIPTION
NMV-DS-01	Cell Harvest & Extraction	Biomass recovery & lysis.
NMV-DS-02	Solvent Extraction	Lipophilic-vitamin extraction.
NMV-DS-03	Crystallisation & Precipitation	Vitamin crystallisation.
NMV-DS-04	Chromatographic Purification	Resin & column purification.
NMV-DS-05	Concentration & Drying	Evaporation & drying.
NMV-DS-06	Stabilisation & Coating	Oxygen / light protection.

10

CATEGORY • NMV-FT

Grades, Formulation & Application

Feed, food, pharma & beadlet grade finishing

6

PROGRAMS

CODE	TRAINING PROGRAM	DESCRIPTION
NMV-FT-01	Feed-Grade Vitamin	Animal-nutrition grade.
NMV-FT-02	Food / Fortification Grade	Food-fortification grade.
NMV-FT-03	Pharma / USP Grade	Pharmaceutical grade.
NMV-FT-04	Cosmetic-Grade Vitamin	Personal-care grade.
NMV-FT-05	Spray-Dried / Beadlet	Stabilised dry formats.
NMV-FT-06	Vitamin Premix / Blend	Multi-vitamin premixes.

ENROL • FERMENT • FORTIFY

Build a Career in Vitamin Fermentation

Every program in this catalogue is delivered as hands-on training on working fermentation and recovery equipment — covering producer-strain handling, fed-batch fermentation, extraction & purification, crystallisation, stabilisation & coating, grade finishing, assay & QC and quality compliance. Mix and match programs to design a track that fits your goals.

55 training programs

10 technology streams

Unique **product code** for every module

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