

Ibuprofen DC 85 W

Ibuprofen engineered for direct compression

Commercial Presentation – EXTERNAL
June 2022



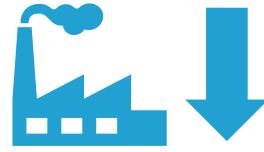
Ibuprofen's Processing Challenges

1961

Ibuprofen was discovered by Stewart Adams and John Nicholson.

\$8.1 billion

The 2022 global market of ibuprofen is valued at \$8.1 billion



After its invention in the mid-20th century, ibuprofen is taken by billions of people worldwide today. To supply cost effective and safe medicines, improvements can still be made to this API's formulations. Its **low melting point** causes the tablets to stick to tablet punches during the manufacturing process, **resulting in production downtime**.



Granulation can be used to improve ibuprofen's flowability and tabletability. Another workaround is to add fillers to reduce the API concentration. However, these processes add **more manufacturing steps** and can result in **larger tablets**.



Why Do We Need Directly Compressible Ibuprofen?



Individual Blend

Filler
Ibuprofen 70
Disintegrant
Binder
Lubricant

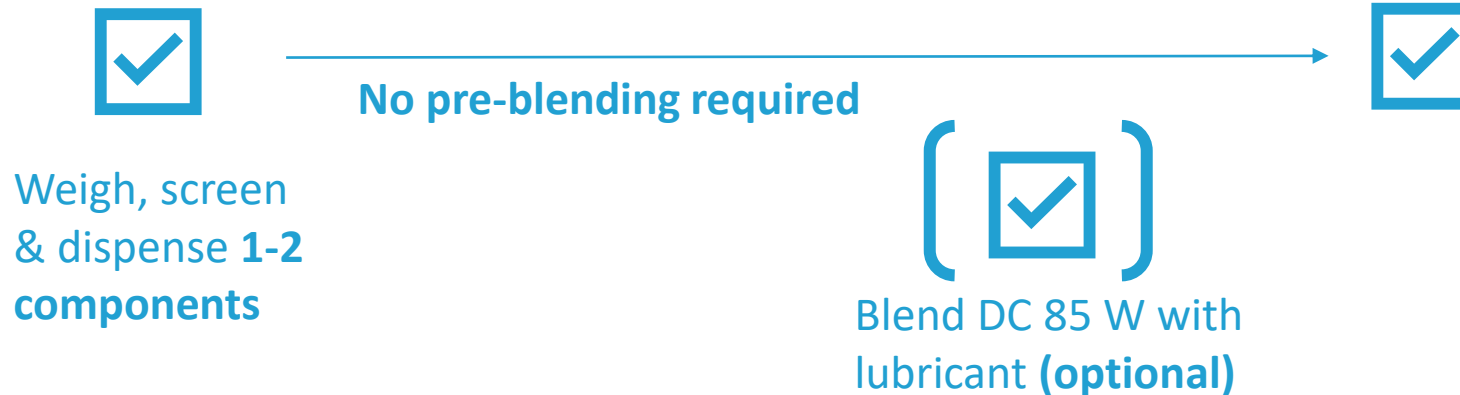


Increased manufacturing complexity

More excipients = more variability

Ibuprofen DC 85 W

Ibuprofen DC 85 W
Lubricant (optional)



No pre-blending needed + optional blending step

Weigh and compress



What is Ibuprofen DC 85 W?

| | |
|--------------------|--------------------------------|
| EXCIPIENTS ~15% | IBUPROFEN 50 84.66 – 85.34% |
|--------------------|--------------------------------|



| Purpose | Excipient | Weight % |
|---------------|----------------------------|------------|
| Filler/binder | Microcrystalline Cellulose | 6.59-6.67% |
| Disintegrant | Croscarmellose Sodium | 2.86-3.02% |
| Glidant | Colloidal Silicon Dioxide | 5.34-5.52% |

- ✓ Engineered to have **excellent flowability** and **minimal stickiness**.
- ✓ Results in a **simpler manufacturing process** and **accelerated time to market**.



Key Benefits of Ibuprofen DC 85 W



MANUFACTURING

- Shortens production time by **40-70%**
 - ✓ Avoids granulation process
 - ✓ Fewer manufacturing steps
 - ✓ Less time dedicated to testing individual raw materials due to simpler tablet formulation

FORMULATION

- High drug concentration resulting in **tablet size reduction of 40%** (400 mg dosage: tablet size reduction from 690 mg to 490 mg), **reduced excipient cost** and **improved patient compliance**
- Patented formulation has **better flowability**
- **Minimizes stickiness** during production

RESULTING PRODUCT

Fault-free tablets that allow for **excellent engraving**

Excellent for **combination therapies**

One-step process: **weigh and compress!**



Intermediates manufactured at BASF's Bishop, Texas Site

1945

Bishop site founded by Celanese

1992

First ibuprofen produced at Bishop

1997

Ibuprofen under 100% BASF ownership

2010-2013

BASF invests in site optimization

2019-2021

BASF has major turnarounds to replace equipment and improve performance

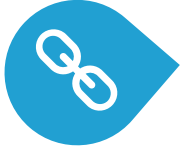


- ✓ **25 years** of ibuprofen manufacturing experience
- ✓ Made via a **sustainable manufacturing process**
- ✓ Digitally advanced and offers **virtual audits**
- ✓ **Knowledgeable and committed team** of technical experts

Want to learn more about our Bishop site? Find out more [here](#).

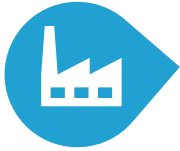


Key Customer Benefits



Supply reliability

- Global distribution network from a high-quality manufacturing site in North America



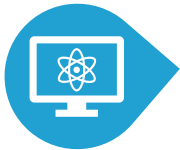
Manufacturing

- Manufactured from ibuprofen intermediates sourced from BASF's plant in Bishop, Texas
- Continuous investment and improvements to the Bishop site to optimize and increase process efficiency



Sustainability

- Eco-friendly ibuprofen intermediate manufacturing process
 - ✓ Catalyst/solvent recovery and recycling
 - ✓ No metal-containing aqueous waste



BASF Virtual Pharma Assistants

- Regulatory documentation available upon request in [RegXcellence®](#)
- Product details available via [MyProductWorld](#)
- Virtual formulation assistance available via [ZoomLab™](#)
- Full pharma regulatory documentation and submission support





Ibuprofen DC 85 W

| | |
|--------------------------|----------|
| Product article # | 50192890 |
|--------------------------|----------|

| | |
|-----------------------|-------|
| Product supply | 50 kg |
|-----------------------|-------|

| | |
|-------------------------|----------|
| Sample article # | 50192933 |
|-------------------------|----------|

| | |
|----------------------|------|
| Sample supply | 2 kg |
|----------------------|------|

More questions? Contact us at pharma-solutions@basf.com





We create chemistry