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**Notice Regarding Start of Sales of Liquid Nitrogen Program Freezers
“Cryo Cell Master™ CM-300”**

Taiyo Nippon Sanso Corporation (“TNSC”, President: Kenji Nagata) hereby announces the commercialization and start of sales of the Cryo Cell Master™ CM-300 large-scale liquid nitrogen program freezer capable of stably freezing a large volume of cells for cellular medicine manufacturing lines.

1. Background

TNSC, the only liquid nitrogen type cryopreservation container manufacturer in Japan, has commercialized many related devices and vessels for freezing, preserving and transporting cells up until now. One of those, a liquid nitrogen type program freezer¹ used by many universities, government and corporate research institutes to prefreeze² cells, has been delivered in Japan.

Liquid nitrogen type program freezers can prefreeze large volumes of cells at an appropriate freezing rate because they have higher freezing performance and broader temperature control ranges than electrical program freezers.

As regenerative medicine transitions from the research stage to industrial use, TNSC has developed the Cryo Cell Master™ CM-300, with an internal capacity three times larger than existing products of approximately 300 liters, responding to demand for larger volumes of cell batch prefreezing. The addition of this freezer to the lineup will respond to a wide variety of customer requirements, from cellular medicine research applications to prefreezing for pharmaceutical production lines.

*1 Program freezers: Equipment used in prefreezing when freezing cells, and that can control freezing rates as desired.

*2 Prefreeze: A freezing process in which cells are frozen at a controlled freezing rate from room temperature to about -80°C to reduce damage to cells.

2. Features of the Cryo Cell Master™ CM-300

This freezer will be the large-size model of TNSC’s CM series standard lineup, and has the following features:

- Easily and stably freeze in line with the freezing program compared to electric types by using the cold heat of liquified nitrogen (-196°C).
- Batch processing of a maximum of 1,575 cryopreservation vials (10 cc); three times more than TNSC’s existing freezers.
- Equipped with an original freezing program to recreate stable freezing conditions.
- Distribution of chamber temperature at the time of programmed freezing is achieved at a level equivalent to existing freezers through optimizing the layout of such items as the stirring fan and liquefied nitrogen nozzle.
- Due to its ability to process large volumes at once, compared to the CM-100 existing model capable of processing the same volume, the CM-300 contributes to keeping down capital investment and space saving (by occupying an installation area approximately 40% smaller).
- Internal temperatures are quickly recovered following completion of freezing operations through an internal heater. By shortening the waiting time required until the next process it enables an increase in

the daily processing frequency.

Chart 1: Comparison between the Liquid Nitrogen Program Freezer and Existing Models

Features		CM-300 (new model)	CM-100 (existing stationary model)	CM-21BL (existing tabletop model)
Basic specifications	Body dimensions (W×D×H) [mm]	1,910×810×925	1,010×810×925	535×530×450
	Processing volume for 10 cc cryopreservation vials (vials)	1,575	525	25
	Power source	Three-phase AC 200V	Three-phase AC 200V	Single-phase AC 100V

3. Future Plans

Cryo Cell Master™ CM-300 sales will start from October 2022.

As the Gas Professionals, TNSC offers customers optimal solutions for gas utilization devices and equipment as well as contributes to the further development of regenerative medicine by adding to the product lineup this product, which is expected to be in demand in the manufacturing process of products for regenerative medicine and more.



Fig. 1 New liquid nitrogen program freezer
Cryo Cell Master™ CM-300

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