

UNICELL-OH Series

Description

UNICELL-OH series is an outstanding non-staining, non-discoloring nitrogen-releasing foaming agent for the production of both cellular rubbers and plastics. Among the latter, PE, PVC, epoxy, TPR, and phenolic resins are currently expanded on a commercial scale using these foaming agents. It can also be used in the production of thermal insulation materials based on blends of synthetic rubbers and thermoplastics, e.g., NBR-PVC.

UNICELL-OH series produces ammonia-free gas upon thermal decomposition.

The decomposition temperature of UNICELL-OH series aligns with the conventional curing temperature range.

UNICELL-OH series therefore provides good foaming efficiency at conventional curing temperature without the need for activators.

Properties of UNICELL-OH series

Item	Specification					
Grade Name	OH	OH300N	OHW2	OH160NER	OHD3	OHS3
Chemical Name	p,p'- Oxybis (benzenesulfonylhydrazide)					
Appearance	Fine White Powder					
Decomposition Temperature (°C)	157~163	157~163	157~163	157~163	157~163	157~163
Gas Volume (ml/g, at 25°C)	119~129	120~130	115~125	110~120	115~125	115~125
Average Particle Size (µm)	3.2~4.2	2.9~3.3	4.0~4.5	3.2~4.2	*9.0~11.0	*15.0~17.0
Moisture Content (%)	0.5 max.	0.5 max.	0.5 max.	0.5 max.	0.5 max.	0.5 max.
Ash Content (%)	2.0~3.0	2.0~3.0	0.5~1.5	-	2.0~3.0	0.3~0.8
pH	6.0~8.0	6.0~8.0	-	-	-	-
Sieve Test (100 mesh, %)	0.05 max.	0.05 max.	0.05 max.	0.05 max.	0.05 max.	0.05 max.

*Measured by Laser Particle Sizer

Applications

UNICELL-OH series can be used for foaming PVC, EPDM, EVA, LDPE, CR, and other resins.

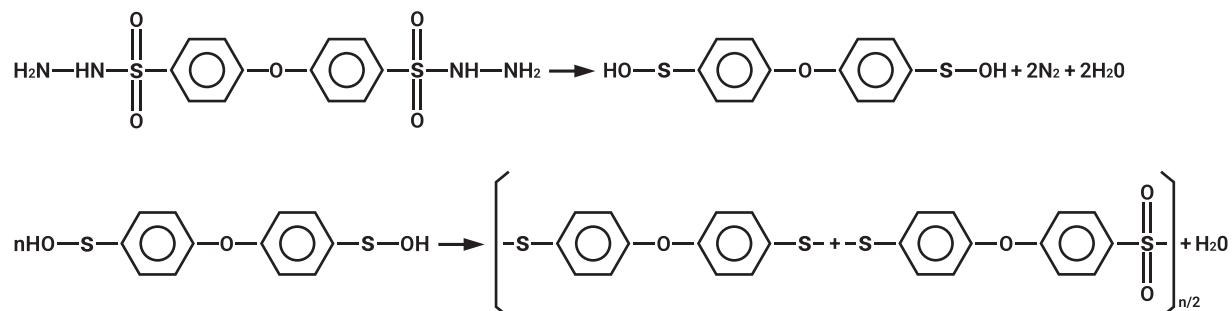
UNICELL-OH series is suitable for PVC plastisol and calendaring, as well as extrusion, injection molding, and other thermoplastic processing.

*p,p'- Oxybis (benzenesulfonylhydrazide)

*General purpose foaming agents

Decomposition of the UNICELL-OH Series

The decomposition of UNICELL-OH series, nitrogen gas is produced as follows:



The solid residue is a non-polar, aromatic, sulfur-containing polymer, which accounts for approximately 84% of the original weight of UNICELL-OH.

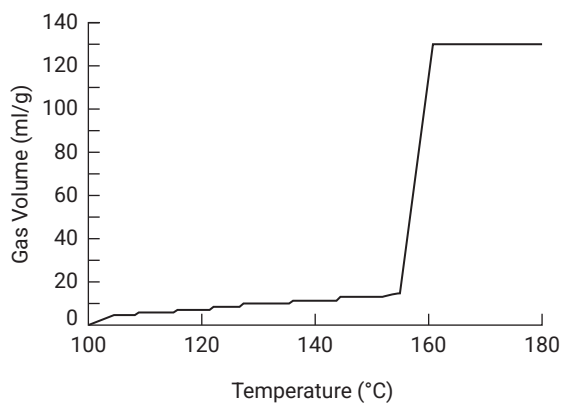


Fig 1. The decomposition behavior of UNICELL-OH when heating speed is 5°C/min.

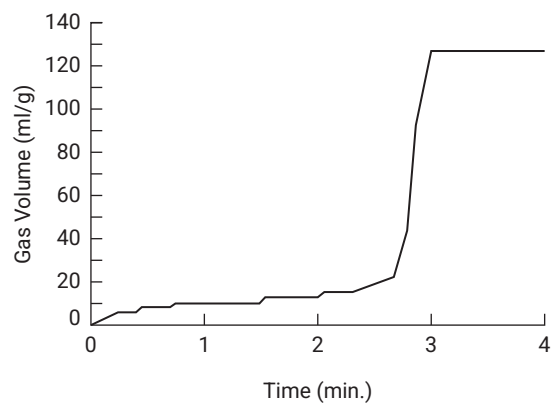


Fig 2. The decomposition behavior of UNICELL-OH at the constant temperature of 160°C.

Activation

The decomposition temperature of **UNICELL-OH** series can be lowered by various types of activators.

The effect of activation on the decomposition of **UNICELL-OH** series depends on the type of activator and the processing conditions.

Table 2. The kinds of activators for **UNICELL-OH**.

Very Strong Activators	UNIPASTE-P2
Strong Activators	DPG (Diphenyl guanidine)
Moderate Activators	Calcium oxide, Calcium stearate, Stearic acid and Vinyl stabilizer (Cd, Pb type)
Weak Activators	Adipic acid, Benzoic acid, Citric acid, Salicylic acid, Lead, and Zinc stearate

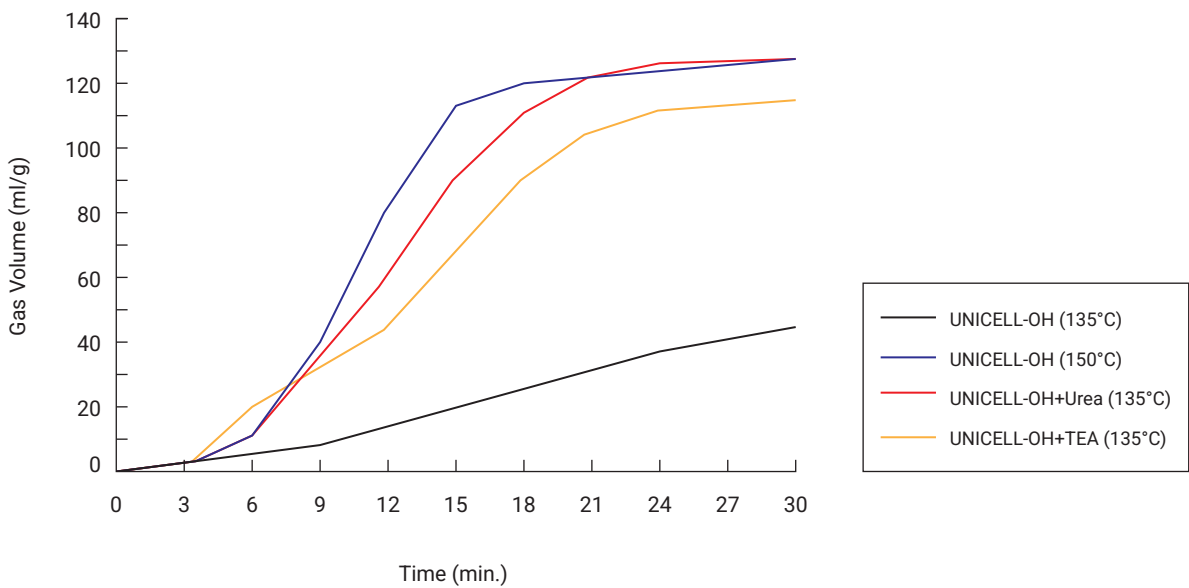


Fig 3. The decomposition behavior of **UNICELL-OH** at the constant temperature.