

Technical Information

Tomadol® Ethoxylated Alcohols and Nonidet® Alkoxyated Surfactants

Description

Evonik produces a wide variety of nonionic surfactants. The Tomadol® ethoxylates vary in both hydrophobe and ethylene oxide chain lengths, to yield a wide range of physical and surfactant properties. The Tomadol® ethoxylates are excellent wetting agents, emulsifiers and detergents. Tomadol® ethoxylates are moderate foamers. The Nonidet® surfactants are nonionic surfactants that incorporate both ethylene oxide and propylene oxide to provide lower foam and good detergency.

Tomadol® Ethoxylates Alcohol Surfactants

Made from linear synthetic alcohols, a complete range of excellent wetting agents, emulsifiers and detergents that provide ease of handling and formulation:

	EO Groups (Avg.)	Molecular Weight	EO Content Wt%	Melting Range, °C	Color (APHA)	Sp. Gravity @ 25 °C	Viscosity, cSt @ 100 °F	Hydroxyl No., mg KOH/g	Surface Tension (0.1 wt%)	Flash pt. °C	Cloud pt. °C	Pour pt. °C	HLB
Tomadol 91-2.5	2.7	281	42.3	-25 to -17	5-10	0.925	12	200	24	124	(b)	-13	8.5
Tomadol 91-5	5	401	54.8	-14.44	50	0.972	20	140-157	27	146	31	3	11
Tomadol 91-6	6	425	62.1	-5 to 15	5-10	0.984	23	132	29	143	52	6	12.4
Tomadol 91-8	8.3	524	69.7	7 to 24	5-10	1.008	39	107	30	159	80	15	13.9
Tomadol 1-3	3	305	43.3	-15 to 4	5-10	0.936	10	184	25	142	(b)	-7	8.7
Tomadol 1-5	5	392	56.1	-4 to 17	5-10	0.966	21	143	25	148	(b)	6	11.2
Tomadol 1-7	7	479	64.3	4 to 20	5-10	0.996	28	117	28	165	58	13	12.9
Tomadol 1-73B	5.6	418	59	4 to 20	5-10	0.987	48	134	26	147	36	13	11.8
Tomadol 1-9	9	569	69.6	15 to 28	5-10	1.011	31	99	31	176	74	18	13.9
Tomadol 23-1	1	238	18.5	2 to 11	5-10	0.873	13	236	(a)	143	(b)	5	3.7
Tomadol 23-3	2.9	322	39.6	-4 to 6	5-10	0.922	14	174	25	152	(b)	1	7.9
Tomadol 23-5	5	413	53.3	-3 to 23	5-10	0.965	23	136	26	157	(b)	7	10.7
Tomadol 23-6.5	6.6	484	60	11 to 25	5-10	0.984	29	116	28	168	43	15	12
Tomadol 25-3	2.8	330	37.3	2 to 11	5-10	0.921	19	170	26	157	(b)	3	7.5
Tomadol 25-7	7.3	524	61.3	2 to 26	5-10	0.965	34	107	30	186	50	19	12.3
Tomadol 25-9	8.9	597	65.6	14 to 30	5-10	0.982	41	94	30	188	74	21	13.1
Tomadol 25-12	11.9	729	71.8	20 to 34	5-10	0.999	53	77	34	223	78 ^(c)	27	14.4
Tomadol 45-7	7	529	58.2	9 to 31	5-10	0.959	35	106	29	185	45	19	11.6
Tomadol 45-13	12.9	790	71.8	25 to 37	5-10	1.003	59	71	34	249	80 ^(c)	30	14.4

(a) Aqueous solubility <0.1 wt%

(b) Aqueous solubility < 1 wt%

(c) Measured in 5% NaCl solution

Tomadol® 400, 600, 900, 1200, 1500 Surfactants – NPE Alternatives:

High-performance, environmentally-friendly nonionic surfactants designed specifically for ease of re-formulation when replacing nonyl phenol ethoxylates.

	EO Groups (Avg.)	Molecular Weight	EO Content Wt%	Melting Range, °C	Color (APHA)	Sp. Gravity @ 25 °C	Viscosity, cSt @ 100 °F	Hydroxyl No., mg KOH/g	Surface Tension (0.1 wt %)	Flash pt. °C	Cloud pt. °C	Pour pt. °C	HLB
Tomadol 400	EO	300	44.5	-25 to -7	5-10	0.93	15	189	24	124	(b)	-10	8.9
Tomadol 600	EO	400	53	-5 to 24	5-10	0.97	21	134	26	157	(b)	7	10.6
Tomadol 900	EO	460	65	2 to 15	5-10	0.98	15	122	27	159	64	8	13.1
Tomadol 901	EO	445	60	2 to 11	5-10	0.97	15	126	26	124	39	3	12.1
Tomadol 910	EO	495	59	2 to 15	5-10	0.99	30	113	27	182	43	8	11.8
Tomadol 1200	EO	590	68	15 to 28	5-10	1.00	35	95	30	145	80	19	13.6
Tomadol 1502	EO	447	59	30	50	.99	26	N/A	27	123	54	6	11.8
Tomadol 1504	EO	510	66	3	Colorless	1.01	61	N/A	30	98	72	15	13.1

(a) Aqueous solubility <0.1 wt%

(b) Aqueous solubility < 1 wt%

(c) Measured in 5% NaCl solution

Nonidet Alkoxyated Surfactants:

Low-foam, nonionic surfactants that provide multi-functional benefits in applications where foam control is a concern.

	EO Groups (Avg.)	Molecular Weight	EO Content Wt%	Melting Range, °C	Color (APHA)	Sp. Gravity @ 25 °C	Viscosity, cSt @ 100 °F	Hydroxyl No., mg KOH/g	Surface Tension (0.1 wt %)	Flash pt. °C	Cloud pt. °C	Pour pt. °C	HLB
Nonidet RK-18	EO, PO	--	--	-31 to -4	100	1.02	83	--	34	232	17	-8	6
Nonidet SF-3	EO, PO	--	--	-25 to 12	100	0.99	53	--	33	154	39-48	4	9
Nonidet SF-5	EO, PO	--	--	-25 to 7	100	0.99	54	--	34	177	35-40	-1	8

Registration status

Product	EU Countries	Non-EU Countries
Tomadol 91-2.5	•	•
Tomadol 91-5	•	•
Tomadol 91-6	•	•
Tomadol 91-8	•	•
Tomadol 1-3	•	•
Tomadol 1-5	•	•
Tomadol 1-7	•	•
Tomadol 1-73B	discontinued	•
Tomadol 1-9	•	•
Tomadol 23-1	discontinued	•
Tomadol 23-3	•	•
Tomadol 23-5	•	•
Tomadol 23-6.5	•	•
Tomadol 25-3	•	•
Tomadol 25-7	•	•
Tomadol 25-9	•	•
Tomadol 25-12	•	•
Tomadol 45-7	•	•
Tomadol 45-13	•	•
Tomadol 400	discontinued	•
Tomadol 600	•	•
Tomadol 900	•	•
Tomadol 901	discontinued	•
Tomadol 910	discontinued	•
Tomadol 1200	•	•
Tomadol 1502	•	•
Tomadol 1504	•	•
Nonidet RK-18	discontinued	•
Nonidet SF-3	discontinued	•
Nonidet SF-5	discontinued	•

Storage and Handling

The Tomadol® ethoxylates should be stored under dry and clean conditions between -10 °C and 50 °C. Please refer to Material Safety Data Sheet.

Shelf-Life

12 months from the date of manufacture.

Hazardous goods classification

Information concerning

- classification and labelling according to regulations for transport and for dangerous substances
- protective measures for storage and handling
- measures in case of accidents and fire
- toxicity and ecological effects

is given in our material safety data sheets.

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