

# Components for antimicrobial formulations

Solvents, surfactants, chelants and polymers can play an important role in creating effective antimicrobial formulations. The removal of soils from surfaces is often the first step in this process.

- Surfactants will lower the surface tension and assist in the wetting and spreading of the active.
- Solvents aid in the dispersion and dissolution of soils which helps apply the disinfectant to the surface.
- Chelants help to control divalent cations to help remove tough stains like soap scum and hard water and keep surfactants more soluble, improving performance.
- Polymers act as dispersants and inhibit scale and soil redeposition, which enables cleaning without residue.

Dow products can be used in accordance with:

EPA 40 CFR 180.940 Active and Inert Ingredients for Use in Antimicrobial Formulations (Food-contact surface sanitizing solutions)

- The following chemical substances when used as ingredients in an antimicrobial pesticide formulation may be applied to: Food-contact surfaces in public eating places, dairy processing equipment, and food-processing equipment and utensils.
- The following chemical substances when used as ingredients in an antimicrobial pesticide formulation may be applied to: Dairy processing equipment, and food-processing equipment and utensils.
- The following chemical substances when used as ingredients in an antimicrobial pesticide formulation may be applied to: Food-processing equipment and utensils.

40 CFR 180.950 Tolerance exemptions for minimal risk active and inert ingredients.

40 CFR 180.960 Polymers; exemptions from the requirement of a tolerance.

## Solvents

Solvent	Structure	CAS#	EPA status	Limitation
Butyl CELLOSOLVE™ Solvent	Ethylene glycol monobutyl ether	111-76-2	180.940c	None
CARBITOL™ Solvent*	Diethylene glycol ethyl ether	111-90-0	180.940c	None
n-Butanol*	Alcohol	71-36-3	180.940a	When ready for use, the end-use concentration is not to exceed 100 ppm
Propionic acid	Oxo acid	79-09-4	180.940a	When ready for use, the end-use concentration is not to exceed 100 ppm
			180.940b,c	When ready for use, the end-use concentration is not to exceed 297 ppm

## Surfactants

Surfactant	Structure	CAS#	EPA status	Limitation
ECOSURF™ EH-3, EH-6, EH-9 (90%), EH-14 (90%) Surfactant**	2-Ethyl hexanol EO-PO nonionic surfactant	64366-70-7	180.940a	None
ECOSURF™ SA-4, SA-7, SA-9, SA-15 Surfactant**	Seed oil surfactant	68937-66-6, 69227-22-1	180.940a	None
Polyglycol EP-436	EO-PO nonionic low foam surfactant	9003-11-6	180.940a, 180.960	None
Polyglycol P-1000E*, Polyglycol P 2000*, P-3000*, P-4000*	Polypropylene Glycol	25322-69-4	180.960	None
TERGITOL™ 15-S-3, 15-S-5, 15-S-7, 15-S-9, 15-S-12, 15-S-12 (90%), 15-S-15, 15-S-20, 15-S-20 (80%), 15-S-30, 15-S-40, 15-S-40 (70%) Surfactant	Secondary alcohol ethoxylate surfactant	84133-50-6	180.940a	None

\*Commodity inert

\*\*ECOSURF™ is sold under trade name TERGITOL™ in Canada and Japan.

## Surfactants cont.

Surfactant	Structure	CAS#	EPA status	Limitation
TERGITOL™ L-61, L-62, L-64, L-81, L-101, HB-5100 Surfactant	EO-PO nonionic low foam surfactant	9003-11-6	180.940a 180.960	None
TERGITOL™ MinFoam 1X and MinFoam 2X Surfactant	EO-PO nonionic low foam surfactant	68439-51-0	180.940a	None
TERGITOL™ NP-9, NP-9.5, N-10, NP-11, NP-12, NP-13 Surfactant	Nonylphenol ethoxylates	127087-87-0	180.940a	None
TERGITOL™ TMN-3, TMN-6 (90%), TMN-10 (90%), TMN-100X (90%) Surfactant	Branched secondary alcohol ethoxylates	60828-78-6	180.940a	None
TERGITOL™ XD, XH, XJ Surfactant	EO-PO nonionic low foam surfactant	9038-95-3	180.940a	None
TERGITOL™ XDLW Surfactant	Mixed surfactant	9038-95-3, 84133-50-6	180.940a	None
TRITON™ APG (CG-50, BG-10, CG-110) Surfactant	Alkyl polyglucosides	68515-73-1	180.940a	None
TRITON™ DF-16 Surfactant	EO-PO nonionic low foam surfactant	68603-25-8	180.940a	None
TRITON™ GR-5M Surfactant	Sulfosuccinate	577-11-7, 67-63-0	180.940c	None
TRITON™ HW-1000 Surfactant	Secondary alcohol ethoxylate	60828-78-6	180.940a	None

## Chelants

Chelant	Structure	CAS#	EPA status	Limitation
VERSENE™ 100 Chelating Agent*	Chelant	64-02-8	180.940a	None
VERSENE™ 100LN Chelating Agent*	Chelant	64-02-8	180.940a	None

## Polymers

Polymer	Structure	CAS#	EPA status	Limitation
ACUSOL™ 445N, 445 ND Polymers	Polymers	68479-09-4	40 CFR 180.960	None
CELLOSIZETM Hydroxyethyl Cellulose QP-15000-H Europe*	Polymers	9004-62-0	40 CFR 180.950	None
CELLOSIZETM Hydroxyethyl Cellulose QP-52000-H Europe*	Polymers	9004-62-0	40 CFR 180.950	None
Polyglycol P 1000E	Polymers	25322-69-4	40 CFR 180.960	None
Polyglycol P 1000TB	Polymers	25322-69-4	40 CFR 180.960	None
SUPRACARE™ 412 Polymer	Polymers	25322-68-3	40 CFR 180.910 and 180.960	None

## Nonfood applications

Dow surfactants, solvents, chelants, and polymers can be used in antimicrobial formulations where there is no food contact. Applications may include bathroom cleaners, hard surface cleaners, cleaning wipes, etc. **In addition, all food use inert ingredients noted above are also permitted for nonfood use applications where there is no food contact.**

For surfaces that may come in contact with food, a potable water, rinse is required.

## \*Commodity inerts

EPA has developed a list of inert ingredients it has designated as commodity inert ingredients. Registrants and applicants completing the Confidential Statement of Formula (CSF) Form (EPA Form 8570-4) will no longer need to list the commodity inert ingredient suppliers. To learn more, please visit: <https://www.epa.gov/pesticide-registration/commodity-inert-ingredients>

## Polyglycols

Polyglycol	CAS#	Clearance
CARBOWAX™ Methoxypolyethylene Glycol 350, 550, 750	9004-74-4	Nonfood use
CARBOWAX™ Polyethylene Glycol 200*, 300*, 400*, 540 Blend*, 600*, 1000*, 1450*, 3350*, 4000*, 4000 Aqueous*, 4600*, 6000*, 8000*	25322-68-3	Nonfood use

## Surfactants

Surfactant	CAS#	Clearance
DOWFAX™ 2A1, 3B2, C10L, 8390 Surfactant	119345-04-9, 65143-89-7, 70191-76-3, 36445-71-3	Nonfood use
Polyglycol PT 250, 700, 3000, 4800	9082-00-2	Nonfood Use
Polyglycol P-425*, P-600*, 1000TB*, P 1200*	25322-69-4	Nonfood Use
TERGITOL™ NP-4, NP-6, NP-7, NP-8, NP-30 (70%), NP-40 (70%), NP-50 (70%) Surfactant	127087-87-0	Nonfood use
TRITON™ APG (CG-425, CG-600, CG-650) Surfactant	68515-73-1, 110615-47-9	Nonfood use
TRITON™ X-15, X-35, X-45, X-100, X-102 and X-114, X-165 (70%), X-305 (70%), X-405 (70%), X-705 (70%) Surfactant	9036-19-5	Nonfood use

## Chelants

Chelant	CAS#	Clearance
VERSENE™ 220 Crystals Chelating Agent	13235-36-4	Nonfood use
VERSENE™ K4EDTA Chelating Agent	5964-35-2	Nonfood use

## Solvents

Solvent	CAS#	Clearance
Butyl CARBITOL™ Solvent*	112-34-5	Nonfood use
Butyl CELLOSOLVE™ Acetate	112-07-2	Nonfood use
Diisopropanolamine, LFG 85	110-97-4	Nonfood use
DOWANOL™ PM Glycol Ether	107-98-2	Nonfood use
DOWANOL™ DPM Glycol Ether	34590-94-8	Nonfood use
DOWANOL™ TPM Glycol Ether	25498-49-1	Nonfood use
DOWANOL™ DPnP Glycol Ether	29911-27-1	Nonfood use
DOWANOL™ TPnB Glycol Ether*	29911-28-2	Nonfood use
DOWANOL™ PPh Glycol Ether*	770-35-4	Nonfood use
DOWANOL™ EPH Glycol Ether	122-99-6	Nonfood use
2-Ethyl-hexanol*	104-76-7	Nonfood use
2 Ethylhexoic acid	149-57-5	Nonfood use
Polyglycol P 1000TB	112-59-4	Nonfood use

\*Commodity inert

## Solvents cont.

Solvent	CAS#	Clearance
Hexyl CARBITOL™ Solvent	112-59-4	Nonfood use
Hexyl CELLOSOLVE™ Solvent	112-25-4	Nonfood use
Isobutanol*	78-83-1	Nonfood use
Isobutyl acetate	110-19-0	Nonfood use
Isopropanol*	67-63-0	Nonfood use
Isopropyl acetate	108-21-4	Nonfood use
Methyl CARBITOL™ Solvent	111-77-3	Nonfood use
n-Butanol*	71-36-3	When ready for use, the end-use concentration is not to exceed 100 ppm
n-Butyl acetate	123-86-4	Nonfood use
n-Propanol*	71-23-8	Nonfood use
n-Propyl acetate	109-60-4	Nonfood use
Primary amyl acetate mixed isomers	628-63-7, 624-41-9	Nonfood use
Triethanolamine 99% LFG 85*	102-71-6	Nonfood use
Trimethylnonanol	123-17-1	Nonfood use
UCAR™ Ester EEP	763-69-9	Nonfood use
Valeric acid	109-52-4	Nonfood use

## Polymers

Polymers	CAS#	Clearance
ACUSOL™ 445 N, 445 ND Polymers	68479-09-4	Nonfood use
ACUSOL™ 460N Polymer	Proprietary	Nonfood use
ACUSOL™ 880 Polymer	Proprietary	Nonfood use
ACUSOL™ Millennium Rheology Modifier	Proprietary	Nonfood use
ACUSOL™ PRO Hard Surface Polymer	Proprietary	Nonfood use

For more information, please refer to the EPA Inert site: <https://www.epa.gov/pesticide-registration/inert-ingredients-overview-and-guidance>

## Contact us

We're here to help. To learn more about specific products, pricing and availability, regulatory or other inquires, visit [dow.com/contactus](https://www.dow.com/contactus).

\*Commodity inert

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