

Armid[®] DM10 and Armid[®] DM810

Fatty acid dimethylamide based solvents

One of our new capabilities is the production of Armid DM10 and Armid DM810. Armid DM10 is a N,N-dimethyldecanamide with CAS no 14433-76-2 and Armid DM810 is a blend of N,N-dimethyl octan/decanamide identified by CAS no 1118-92-9 and 14433-76-2.

The application range of these new solvents is no longer restricted to triazole fungicides. Since their introduction, Armid DM10 and Armid DM810 have been found to be efficient EC solvents for a variety of active ingredients.

Typical properties

- Alternatives to aromatic solvents like Solvesso 150 and N-methylpyrrolidone
- Easy to incorporate into emulsifiable concentrates
- Low water solubility
- Miscible with typical co-solvents
- Readily biodegradable
- Good tox / ecotox profile
- Low VOC

Regulatory

- Listed on TSCA, DSL, NZIoC, ENCS, ISHL, IECSC and REACH

Solubility data of different active ingredients in Armid DM10

| Ingredient | w/w% |
|-------------------------------------|------|
| Trifloxystrobin | 19 |
| Tebuconazole | 34 |
| Difenoconazole | 24 |
| 2,4-D acid | 30 |
| Amitraz | 36 |
| Bifenthrin | 32 |
| Tebuconazole /Trifloxystrobin (1/1) | 25 |
| Fluroxypyr | >50 |
| Cyhalofop-butyl | >50 |
| Fenbuconazole | 14 |

Physical properties

| | Armid DM10 | Armid DM810 |
|-------------------|-------------------------|----------------------------|
| | N,N-dimethyl decanamide | N,N-dimethyl (C8-10) amide |
| Appearance | clear liquid | clear liquid |
| Density at 20°C | 0.88 g/ml | 0.89 g/ml |
| Flash point | > 100°C | > 100°C |
| Melting point | 11°C to -7°C | -18 °C |
| Viscosity at 20°C | 5.0 mPa.s | 2.7 mPa.s |

Armid DM10 and DM810 are easily miscible with other solvents: propylene glycol, 1-butanol, 2-ethyl hexanol, ethyl lactate, propylene carbonate, dimethyl sulfoxide, rape-methylester and aromatics, e.g. Solvesso 150 and Solvesso 200 (all tested in 1:1 w/w ratio).

Guide recipes

| Active ingredients, g/L | Emulsifiers, g/L | Co-solvent, g/L | Armid DM10, g/L | Armid DM810, g/L |
|------------------------------------|------------------|-----------------|-----------------|------------------|
| Ethofumesate 140 + Phenmedipham 70 | 90 | 20* | balance | - |
| Tebuconazole 250 | 90 | - | balance | - |
| Tebuconazole 250 | 90 | 20* | - | balance |
| Diazinon 100 | 100 | 200** | balance | - |
| Trifloxystrobin 125 | 90 | 200 | balance | - |
| Fenoxaprop P-ethyl 120 | 90 | 10* | balance | - |

The emulsifier package is a combination of Witconate P-1460EH, Ethylan NS-500LQ and Ethylan 954 LQ

* Co-solvent = water ** Co-solvent = rape seed methyl ester

Environmental profile

| | | Armid DM10 | Armid DM810 |
|------------------------------------|------------------------------|------------------------|------------------------|
| Acute oral toxicity (rat) | | LD50 > 2000-5000 mg/kg | LD50 > 1250 mg/kg |
| Acute dermal toxicity (rat) | | LD50 > 5000 mg/kg | LD50 > 1000-2000 mg/kg |
| Toxicity to fish, exp time: 96h | Leuciscus idus (Golden orfe) | LC50 > 10 ≤ 100 mg/l | LC50 > 10 ≤ 100 mg/l |
| Toxicity to daphnia, exp time: 48h | Daphnia magna (Water flea) | EC50 > 1 ≤ 10 mg/l | EC50 > 1 ≤ 10 mg/l |
| Toxicity to algae, exp time: 72h | Algae | EC50 > 10 ≤ 100 mg/l | EC50 > 10 ≤ 100 mg/l |
| Biodegradability | | Readily biodegradable | Readily biodegradable |
| PBT and vPvB assessment* | | Not considered | Not considered |

* PBT = Persistent, Bioaccumulation, Toxic

vPvB = very Persistent nor very Bioaccumulating

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Nouryon

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