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# (*Z*)-3-(4-Chlorophenyl)-2-{[*N*-(2-formylphenyl)-4-methylbenzenesulfonamido]methyl}prop-2-enenitrile

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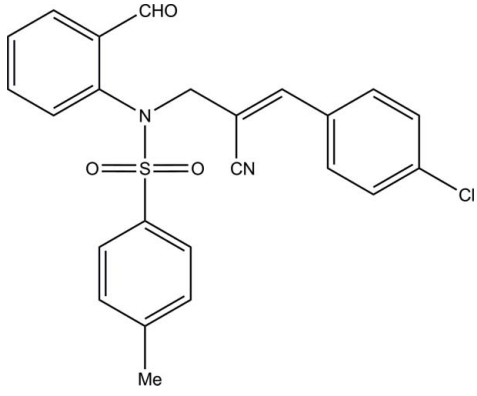
Key indicators: single-crystal X-ray study; $T$ = 293 K; mean $\sigma$(C–C) = 0.004 Å; $R$ factor = 0.041; $wR$ factor = 0.111; data-to-parameter ratio = 17.3.

In the title compound, $C_{24}H_{19}ClN_2O_3S$, the sulfonyl-bound benzene ring forms dihedral angles of 38.1 (2) and 81.2 (1)°, respectively, with the formyl benzene and benzene rings. The molecular conformation is stabilized by a weak intramolecular C—H···O hydrogen bond, which generates an $S$(5) ring motif. The crystal packing is stabilized by C—H···O hydrogen bonds, which generate $C$(7) zigzag chains along [010] and $R_3^3$(19) ring motifs along [010]. The crystal packing is further stabilized by C—Cl···$\pi$ interactions [Cl···centroid = 3.456 (2) Å and C—Cl···centroid = 173.4 (2)°].

## Related literature

For background to the pharmacological uses of sulfonamides, see: Korolkovas (1988); Mandell & Sande (1992). For related structures, see: Ranjith *et al.* (2009); Aziz-ur-Rehman *et al.* (2010). For hydrogen-bond motifs, see: Bernstein *et al.* (1995).




## Experimental

### Crystal data

$C_{24}H_{19}ClN_2O_3S$
$M_r$ = 450.92
Orthorhombic, $P2_12_12_1$
$a$ = 8.9795 (5) Å
$b$ = 10.1590 (5) Å
$c$ = 25.1050 (13) Å
$V$ = 2290.1 (2) Å$^3$
$Z$ = 4
Mo $K\alpha$ radiation
$\mu$ = 0.29 mm$^{-1}$
$T$ = 293 K
0.25 × 0.23 × 0.17 mm

### Data collection

Bruker APEXII CCD diffractometer
Absorption correction: multi-scan (*SADABS*; Sheldrick, 1996)
$T_{min}$ = 0.931, $T_{max}$ = 0.953
12721 measured reflections
4850 independent reflections
3396 reflections with $I > 2\sigma(I)$
$R_{int}$ = 0.024

### Refinement

$R[F^2 > 2\sigma(F^2)]$ = 0.041
$wR(F^2)$ = 0.111
$S$ = 1.03
4850 reflections
281 parameters
H-atom parameters constrained
$\Delta\rho_{max}$ = 0.22 e Å$^{-3}$
$\Delta\rho_{min}$ = −0.21 e Å$^{-3}$
Absolute structure: Flack (1983), 2049 Friedel pairs
Flack parameter: 0.06 (8)

**Table 1**
Hydrogen-bond geometry (Å, °).

| $D$—H···$A$ | $D$—H | H···$A$ | $D$···$A$ | $D$—H···$A$ |
|---|---|---|---|---|
| C15—H15$A$···O3 | 0.97 | 2.43 | 2.890 (3) | 109 |
| C3—H3···O2$^{i}$ | 0.93 | 2.57 | 3.345 (3) | 141 |
| C15—H15$A$···O2$^{ii}$ | 0.97 | 2.57 | 3.385 (3) | 142 |
| C23—H23···O1$^{iii}$ | 0.93 | 2.45 | 3.114 (4) | 128 |

Symmetry codes: (i) $-x+2, y+\frac{1}{2}, -z+\frac{1}{2}$; (ii) $-x+1, y+\frac{1}{2}, -z+\frac{1}{2}$; (iii) $x, y+1, z$.

Data collection: *APEX2* (Bruker, 2004); cell refinement: *APEX2* and *SAINT* (Bruker, 2004); data reduction: *SAINT* and *XPREP* (Bruker, 2004); program(s) used to solve structure: *SHELXS97* (Sheldrick, 2008); program(s) used to refine structure: *SHELXL97* (Sheldrick, 2008); molecular graphics: *ORTEP-3* (Farrugia, 1997); software used to prepare material for publication: *SHELXL97* and *PLATON* (Spek, 2009).

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Supplementary data and figures for this paper are available from the IUCr electronic archives (Reference: BT5740).

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