Compliance sheet — star-tle

Everything a supplier qualification, a legal review or an export check usually asks about star-tle 0.1.0, in one document.

1. Identity

Document	STAR-PKG-STAR-TLE-EN · v2.3 · 2026-11-14
Package	star-tle
Version	0.1.0
Capability	star.orbit.tle-reader
Maturity	Released & Verified (RELEASED)
Python	>=3.9
Source commit	dc09f61d
Source	https://github.com/Andrea07072000/S.T.A.R.-/tree/main/packages/star_tle

2. Licence and obligations

Apache License 2.0. You may use, copy, modify and distribute it, also commercially, and you receive a patent licence from the contributors. When you redistribute it: keep the LICENSE file and the copyright notices (and a NOTICE file, if a future version adds one), and state in modified files that you changed them. You may not use the S.T.A.R. name to endorse your product.

3. What it needs at run time

Nothing beyond the Python standard library: it works offline.

4. Integrity

SHA-256 fingerprints of the files published on this website. Check a downloaded file with:

```
python -c "import
hashlib,sys;print(hashlib.sha256(open(sys.argv[1],'rb').read()).hexdigest())" star_tle-0.1.0-
py3-none-any.whl
```

FILE	SHA-256
star_tle-0.1.0-py3-none-any.whl	a58049035f1d3e42c7415b58531ac189dd76add260d76231f4b34fa231a295eb
star_tle.py	7690c068e88e04a371546290d34698e41953b80f6e7152ab57ba7e1bac2827c7
star_tle-0.1.0-source.zip	73636fd0ba2ca96fd571d9b1ae6c549b82ede5ae36b7a71bdbd11a51d7e2713c

5. What it does, and its limits

Reads every field of a NORAD two-line element set as printed (Alpha-5 included) and refuses malformed sets with a machine-readable reason; fields equal to python-sgp4 and Orekit within 6e-14, and stricter than both on malformed input.

A reader, not a propagator: the elements are SGP4 mean elements in the TEME frame and mean nothing without SGP4. No three-line sets (name line), no OMM/XML/JSON, no writer. The strictness is a choice: a set that another tool accepts may be refused here, with the reason.

- `parse(line1, line2)`: catalogue number (Alpha-5 included), classification, international designator, epoch (four-digit year with the 1957-2056 window, day of year), half the first derivative and a sixth of the second derivative of the mean motion, B*, ephemeris type, element number, inclination, right ascension of the node, eccentricity, argument of perigee, mean anomaly, mean motion, revolution number. Each number is the nearest double of the printed text.
- `checksum(line)`: digits count as themselves, '-' counts 1, everything else 0, modulo 10. `epoch_utc(tle)`.
- Measured on the 29 well-formed sets of the SGP4 verification catalogue: all 14 numeric fields equal to python-sgp4 and to Orekit within 6e-14 after unit conversion.
- A malformed set raises `TleError` (a `ValueError`) whose `reason` is one of: `length`, `charset`, `line_number`, `checksum`, `satnum_mismatch`, `field:<name>`, `range:<name>`. Nothing is repaired. Measured on 174 malformed sets in six kinds: star_tle refuses 147, Orekit 145, python-sgp4 none (it is tolerant by design). The two extra refusals are sets with a correct checksum whose node or perigee angle is 360 degrees or more.

6. Export, use and certification

The package is published and freely available. That usually takes software out of export-control lists, but not every use of it: read the page on space activities and export control before using it in a controlled programme. It is not certified or qualified for flight; the evidence describes what was tested and how.

7. Citation and bill of materials

```
@software{cavazzini_star_tle_0_1_0,
  author  = {Cavazzini, Andrea},
  title   = {{star-tle}: A strict reader of two-line element sets},
  version = {0.1.0},
  year    = {2026},
  url     = {https://andrea07072000.github.io/S.T.A.R.-/software/star_tle/},
  note    = {Apache-2.0. Source: https://github.com/Andrea07072000/S.T.A.R.-, commit dc09f61d}
}
```

CITATION.cff · BibTeX · SBOM CycloneDX 1.5 · SBOM SPDX 2.3

8. Warranty and liability

Provided "as is", without warranties or conditions of any kind (Apache License 2.0, sections 7 and 8), to the extent the law allows. This never excludes liability that the law does not allow to exclude.

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