Table 2. Selected bond distances $(\AA)$ and angles $\left({ }^{\circ}\right)$ with e.s.d.'s in parentheses

| Nil-Brl | 2.339 (2) | Ni2-P3 | 2.313 (3) |
| :---: | :---: | :---: | :---: |
| Nil-P1 | 2.306 (3) | P2-C15 | 1.823 (10) |
| $\mathrm{Pl}-\mathrm{Cl}$ | 1.824 (11) | P2-C21 | 1.830 (10) |
| $\mathrm{Pl}-\mathrm{C} 7$ | 1.792 (10) | P2-C27 | 1.843 (11) |
| $\mathrm{Pl}-\mathrm{Cl} 3$ | 1.833 (11) | C27-C28 | 1.509 (15) |
| C13-C14 | 1.518 (16) | P3-C29 | 1.809 (10) |
| Ni2-Br2 | 2.350 (2) | P3-C35 | 1.823 (10) |
| $\mathrm{Ni} 2-\mathrm{Br} 3$ | 2.362 (2) | P3-C41 | 1.848 (10) |
| Ni2-P2 | 2.316 (3) | C41-C42 | 1.529 (15) |
| $\mathrm{Brl}-\mathrm{Nil}-\mathrm{Brl}{ }^{1}$ | 122.68 (11) | Br3-Ni2-P3 | 112.81 (10) |
| Pl-Nil-P1 ${ }^{\text {I }}$ | 102.94 (16) | Ni2-P2-C15 | 111.5 (3) |
| $\mathrm{Brl}-\mathrm{Ni}$ - Pl | 104.98 (9) | Ni2-P2-C21 | 112.0 (3) |
| $\mathrm{Nil}-\mathrm{Pl}-\mathrm{Cl}$ | 113.3 (3) | Ni2-P2-C27 | 120.1 (3) |
| Nil-P1-C7 | 112.3 (3) | C15-P2-C21 | 104.6 (5) |
| $\mathrm{Ni} 1-\mathrm{Pl}-\mathrm{Cl} 3$ | 117.7 (4) | C15-P2-C27 | 104.1 (5) |
| $\mathrm{Cl}-\mathrm{Pl}-\mathrm{C} 7$ | 104.2 (4) | C21-P2-C27 | 103.1 (5) |
| $\mathrm{C} 1-\mathrm{P} 1-\mathrm{Cl} 3$ | 104.4 (5) | Ni2-P3-C29 | 111.8 (3) |
| C7-P1-C13 | 103.6 (5) | Ni2-P3-C35 | 112.8 (3) |
| $\mathrm{Br} 2-\mathrm{Ni} 2-\mathrm{Br} 3$ | 114.86 (7) | Ni2-P3-C41 | 119.2 (3) |
| $\mathrm{P} 2-\mathrm{Ni} 2-\mathrm{P} 3$ | 98.73 (12) | C29-P3-C35 | 105.0 (5) |
| $\mathrm{Br} 2-\mathrm{Ni} 2-\mathrm{P} 2$ | 113.43 (9) | C29-P3-C41 | 102.7 (4) |
| $\mathrm{Br} 2-\mathrm{Ni} 2-\mathrm{P} 3$ | 108.15 (10) | C35-P3-C41 | 104.0 (5) |
| $\mathrm{Br} 3-\mathrm{Ni} 2-\mathrm{P} 2$ | 107.80 (10) |  |  |
| Symmetry code: (i) $-x, y, \frac{1}{2}-z$. |  |  |  |

is missing since only a unique data set was collected. The structure was solved by direct methods (MULTAN80: Main, Fiske, Hull, Lessinger, Germain, Declercq \& Woolfson, 1980) and subsequent $\Delta \rho$ maps. The hydrogen positions in the $\mathrm{CH}_{3}$ groups were located in $\Delta \rho$ maps while those in the CH and $\mathrm{CH}_{2}$ groups were calculated. Nonhydrogen atoms were refined anisotropically. The hydrogen atoms were assigned the fixed isotropic displacement parameter $0.070 \AA^{2}$; no hydrogen parameter was refined. Atomic scattering factors were taken from International

Tables for X-ray Crystallography (1974, Vol. IV). The system of computer programs is described by Lundgren (1982).

Anisotropic displacement factors, H -atom positions and lists of observed and calculated structure factors with e.s.d.'s have been deposited with the British Library Document Supply Centre as Supplementary Publication No. SUP 54656 ( 25 pp .). Copies may be obtained through The Technical Editor, International Union of Crystallography, 5 Abbey Square, Chester CH1 2HU, England. [CIF reference: AL1000]

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Acta Cryst. (1992). C48, 408

## Automatic retrieval of CIF-related software

An information server has been established at the IUCr Editorial Office to permit automatic retrieval of programs and documentation useful in handling Crystallographic Information Files. Files are sent by e-mail in response to incoming e-mail requests.

To use this facility send an e-mail message to the address sendcif@uk.ac.iucr (UK users) or sendcif@iucr.ac.uk (others) containing the request commands index or send as described below. A request command may be part of the 'Subject:' line or part of the mail message body.

A list of example requests and their result is given below.

| Request <br> index | Result <br> Get the list of the files (sizes, and dates of last <br> modification) available to be retrieved. |
| :--- | :--- |
| send form.cif | Get a copy of a skeleton CIF that may be used <br> as the basis for an Acta submission. |
| Multiple requests may appear on the same line, e.g. |  |
| send cifdic.c91 cyclops.src quasar.src |  |
| is equivalent to |  |

$$
\begin{aligned}
& \text { send cifdic.c91 } \\
& \text { send cyclops.src } \\
& \text { send quasar.src }
\end{aligned}
$$

Note that requests are not case-sensitive. Note also that if the size of the requested file(s) exceeds an internal limit (currently 75000 characters), the reply is automatically broken up into pieces, a message is mailed to the requestor informing him or her of that, and the pieces sent with the header 'Part $n$ of $m$ ' for identification purposes. A script is also sent that can be used to automatically rejoin these pieces into the original file. This script will only work on Unix, or Unix-like systems, but should provide a lead for users of other operating systems.

The files currently available, with approximate sizes, are:

| cifdic.c91 | 140 kB | Electronic version of CIF Dictionary. <br> cman.sh |
| :--- | ---: | :--- |
| 1 kB | Simple Unix shell script for online perusal <br> of CIF Dictionary. |  |
| cyclops.src | 15 kB | Dictionary validation program CYCLOPS. <br> example.cif |
| 31 kB <br> form.cif | 12 kB | Example of a CIF submission to Acta. <br> Template CIF that may be used for <br> submission to Acta. |
| quasar.src | 33 kB | CIF processing program QUASAR. <br> request.lst |
| 7 kB | List of the data items searched for within a <br> submitted CIF. |  |

