

Fig. 2 Dislocazione dei nodi nella rete più estesa

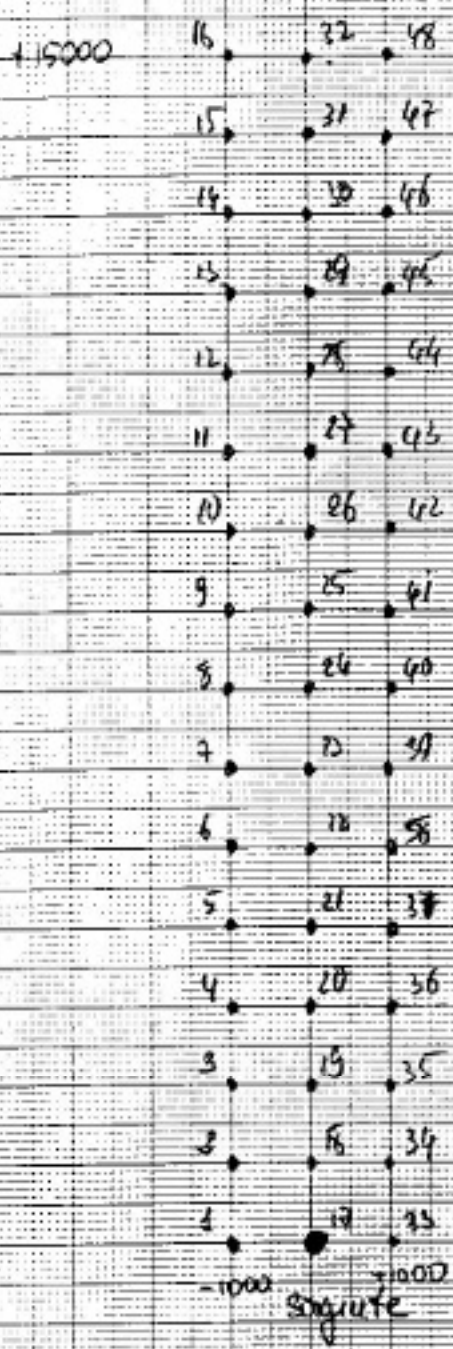


Fig. 3. Relocazione dei ricevitori nella rete a media estesa.

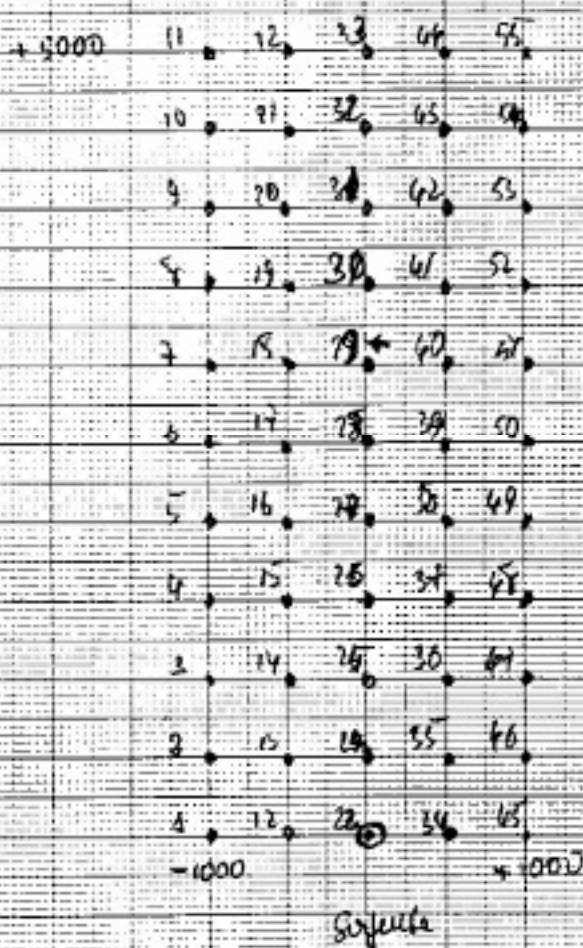




Fig. 4. Dislocazione dei centri nella rete a parete esterna.



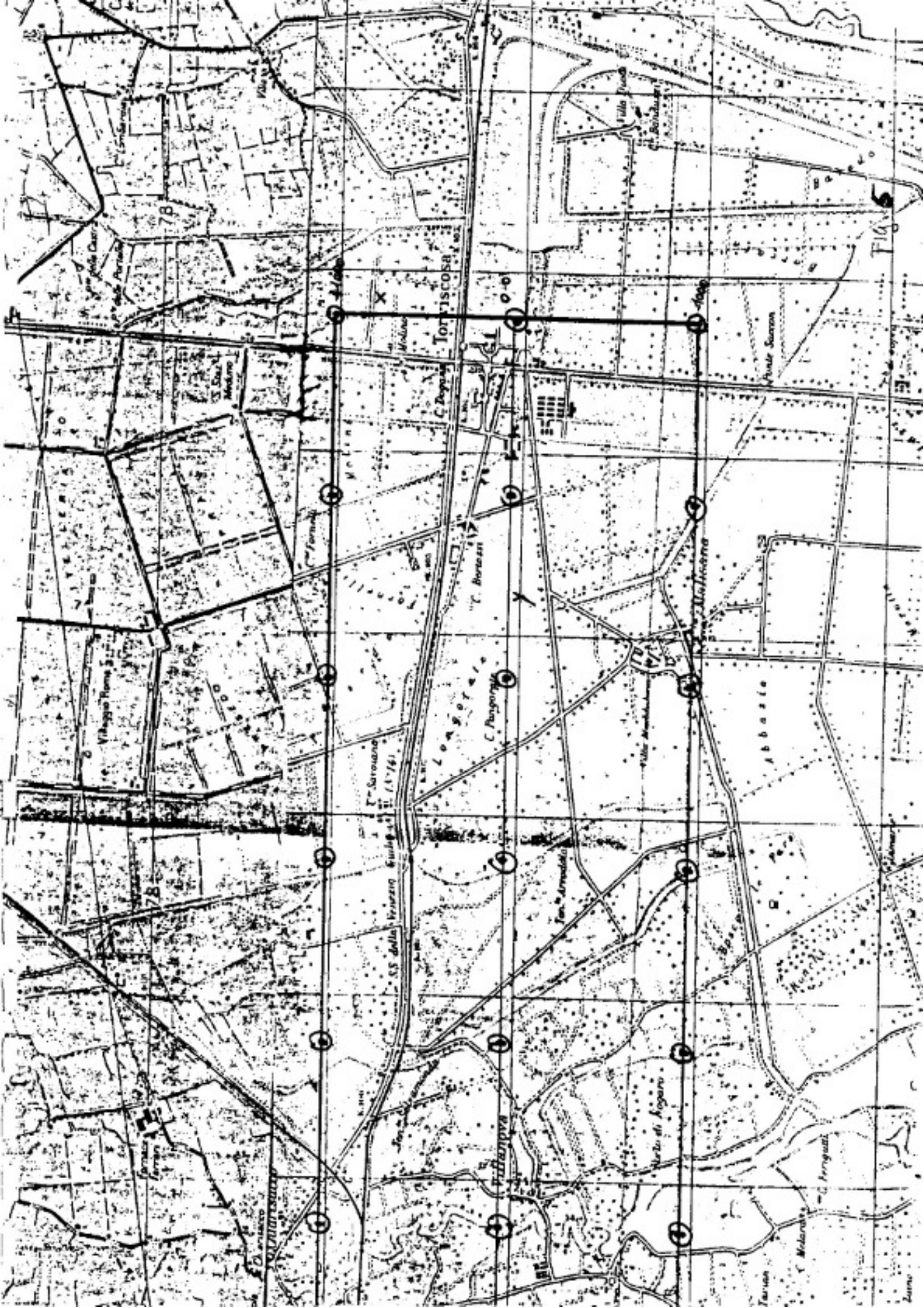


FIG.

Torviscosa

Villaggio Piuma

Villa Piuma

C. Piuma

C. Torviscosa

Fon. Armadio

Villa di Agnano

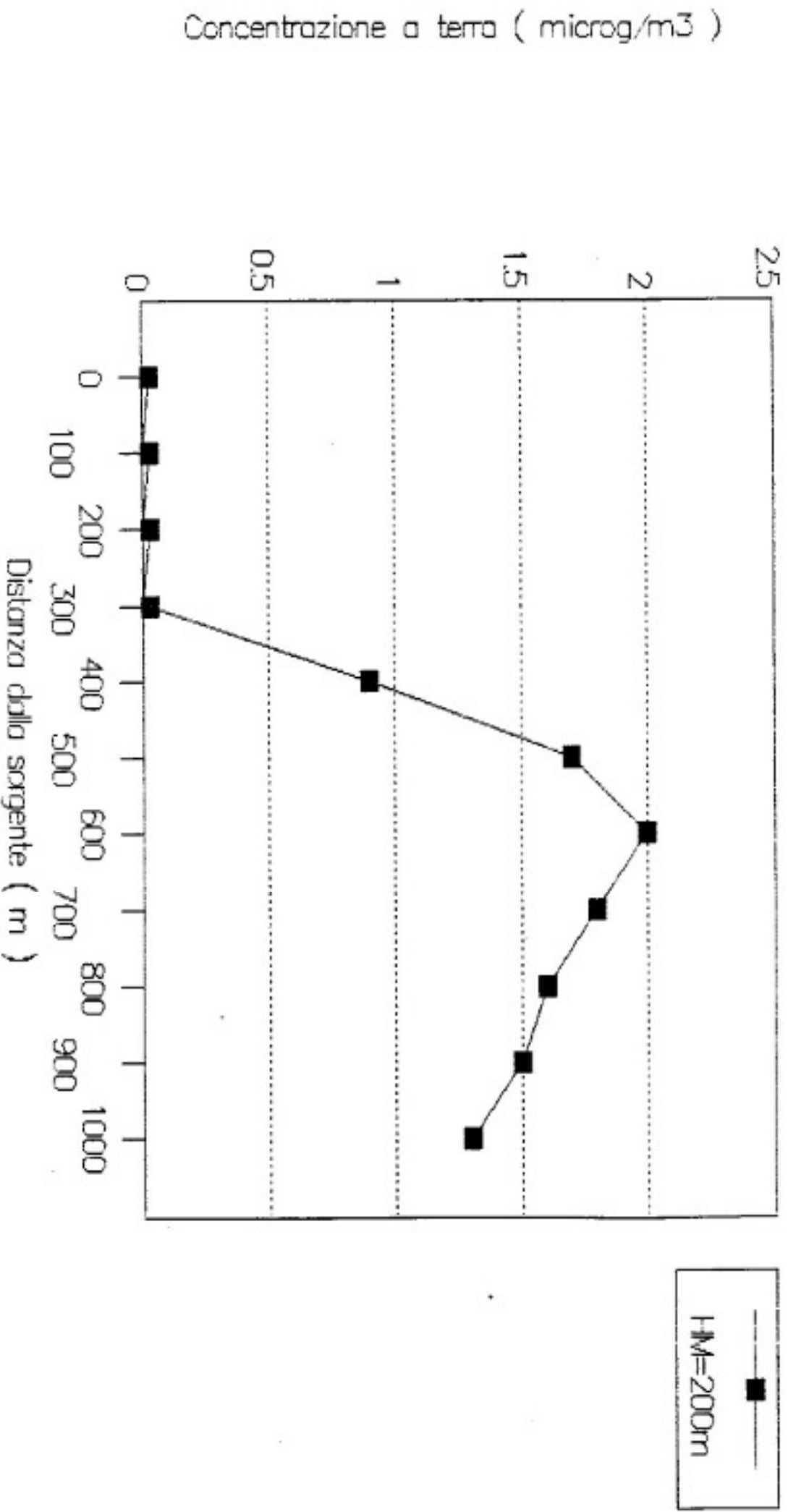
Abbazia

C. Ferrigata

Tarvisio

Latina

Fig. 6: Profilo delle concentrazioni lungo l'asse del vento



Allegato N. 1



PN: HYDROGEN SULFIDE

SY: Sulfuretted hydrogen. Sulfuretted hydrogen

GPR0: Gas. Colorless. Rotten egg odor, but odorless at poisonous concentrations. Sinks and boils in water. Poisonous, flammable, visible vapor cloud is produced.

GRES: Avoid contact with gas. Keep people away. Wear goggles and self-contained breathing apparatus. Shut off ignition sources and call fire department. Stop discharge if possible. Evacuate area in case of large discharges. Stay upwind and use water spray to "knock down" vapor. Isolate and remove discharged material. Notify local health and pollution control agencies.

FRES: FLAMMABLE. Flashback along vapor trail may occur. May explode if ignited in an enclosed area. Wear goggles and self-contained breathing apparatus. Stop flow of gas if possible. Cool exposed containers and men effecting shutoff with water. Let fire burn.

ERES: CALL FOR MEDICAL AID. VAPOR POISONOUS IF INHALED. Irritating to eyes. Move to fresh air. If breathing has stopped, give artificial respiration. If breathing is difficult, give oxygen. IF IN EYES, hold eyelids open and

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flush with plenty of water.

WP01: HARMFUL TO AQUATIC LIFE IN VERY LOW CONCENTRATIONS. May be dangerous if it enters water intakes. Notify local health and wildlife officials. Notify operators of nearby water intakes.

DRES: Issue warning-high flammability, poison Restrict access Evacuate area

LA01: Flammable gas

LA02: 2

CD01: Not listed

CD02: H2S

CD03: 2.0/1053

CD04: 1053

RN: 7783-06-4

OC01: Liquid under pressure

OC02: Colorless

OC03: Offensive odor, like rotten eggs

HM01: Rubber-framed goggles; approved respiratory protection.

HM02: Irritation of eyes, nose and throat. If high concentrations are inhaled, hyperpnea and respiratory paralysis may occur. Very high concentrations may produce pulmonary edema.

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HH03: INHALATION: remove victim from exposure; if breathing has stopped, give artificial respiration; administer oxygen if needed; consult physician. EYES: wash with plenty of water.  
 HH04: 10 ppm  
 HH05: 200 ppm for 10 min.; 100 ppm for 30 min. and 50 ppm for 60 min.  
 HH06: Hydrogen sulfide is present as a gas at room temperature, so ingestion not likely.  
 HH08: Vapor is moderately irritating such that personnel will not usually tolerate moderate or high vapor concentrations.  
 HH09: Minimum hazard. If spilled on clothing and allowed to remain, may cause smarting and reddening of the skin.  
 HH10: 0.0047 ppm → 7.4 μg/m<sup>3</sup>  
 HH11: 300 ppm  
 FH01: Flammable gas  
 FH02: 4.0%-45%  
 FH03: Stop flow of gas  
 FH05: Toxic gases are generated in fires.  
 FH06: Vapor is heavier than air and may travel considerable distance to a source of ignition and flash back.

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FH07: 500 deg F  
 FH09: 2.3 mm/min. (liquid)  
 FH11: 6.040 (Est.)  
 CR01: No reaction  
 CR02: No reaction  
 CR03: Stable  
 WP01: 1.38 ppm/48 hr/fathead minnows/TLm/fresh water sat./0.5  
 hr/bullia/lethal/salt water  
 WP04: None  
 SI01: Purified; technical  
 SI02: Ambient  
 SI03: No requirement  
 SI04: Safety relief  
 HA01: A-B-C-D-E-F-G  
 HC01: Flammable gas  
 HC02: Not listed  
 HC12: 3  
 HC13: 4  
 HC14: 0

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Press a function key; or type the highlighted letter of a command.



```
PC01: Gas
PC02: 34.08
PC03: -75.7 deg F = -60.4 deg C
PC03: 212
PC04: -117 deg F = -82.8 deg C
PC04: 190
PC05: 212.7 deg F = 100.4 deg C
PC05: 373
PC06: 1300 psia = 88.9 atm = 9.01 MN/msup2
PC07: 0.916 at -60 deg C (liquid)
PC08: (est.) 30 dynes/cm = 0.03 N/m at -61 deg C
PC10: 1.2
PC11: 1.322
PC12: 234 Btu/lb = 130 cal/g = 5.44 X 10sup5 J/kg
PC13: -6532 Btu/lb = -3640 cal/g = -152.4 X 10sup5 J/kg
PC25: 16.8 cal/g
```

```
Commands:  HELP  FIND  INDEX  THESAURUS  SHOW  CLEAR  PRINT  GUIDE
           XCHANGE  RESTART  OPTIONS  DOWNLOAD  QUIT
```

Press a function key; or type the highlighted letter of a command.

## GUIDE INTRODUCTION

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## CHRIS ON CD-ROM

CHRIS ON CD-ROM is built from the CHRIS (Chemical Hazard Response Information System) Database, produced by the United States Coast Guard. Containing 1077 hazardous chemical entries, CHRIS is a comprehensive source of preventive, precautionary and emergency response information.

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Type the highlighted letter of a choice; or R to resume your work.

## FIELDS

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Each item in CHRIS, called a record, describes a particular chemical substance. Each record is divided into many fields.

The first three fields describe the substance and its properties; the next four present general and specific emergency response information.

|            |                           |
|------------|---------------------------|
| Short Name | Long Name                 |
| PN         | Prime Name                |
| SY         | Synonyms                  |
| GPRD       | General Properties        |
| GRES       | General Response Data     |
| FRES       | Fire Response Data        |
| ERES       | Exposure Response Data    |
| WPOL       | Water Pollution Responses |

Press PgDn for more fields.

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Press PgDn for more; the highlighted letter of choice; or R to resume your work.

## FIELDS

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The remaining fields are divided into groups, each containing a different type of information.

|                        | Short Name | Long Name             |
|------------------------|------------|-----------------------|
| Response to Discharge: | DRES       | Response to Discharge |
| Label:                 | LA01       | Label Category        |
|                        | LA02       | Label Class           |

Highlighted field is a limit field (explained on Screen 12).  
Press PgDn for more fields.

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Press PgDn for more; the highlighted letter of choice; or R to resume your work.



## FIELDS

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|                             | Short Name | Long Name                       |
|-----------------------------|------------|---------------------------------|
| Chemical Designations:      | CD01       | Coast Guard Compatibility Class |
|                             | CD02       | Chemical Formula                |
|                             | CD03       | IMC/UN Designation              |
|                             | CD04       | DOT ID Number                   |
|                             | RN         | CAS Registry Number             |
| Observable Characteristics: | OC01       | Physical Transit State          |
|                             | OC02       | Color                           |
|                             | OC03       | Odor                            |

Highlighted field is a limit field (explained on Screen 12).  
PgDn for more fields.

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Press PgDn for more; the highlighted letter of choice; or R to resume your work.

## FIELDS

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|                 | Short Name | Long Name                    |
|-----------------|------------|------------------------------|
| Health Hazards: | HH01       | Personal Protection          |
|                 | HH02       | Exposure Symptoms            |
|                 | HH03       | Exposure Treatment           |
|                 | HH04       | Threshold Limit Value        |
|                 | HH05       | Short-Term Inhalation Limits |
|                 | HH06       | Toxicity By Ingestion        |
|                 | HH07       | Late Toxicity                |
|                 | HH08       | Vapor (Gas) Irritancy        |
|                 | HH09       | Liquid or Solid Irritancy    |
|                 | HH10       | Odor Threshold               |
|                 | HH11       | IDLH Value                   |

Press PgDn for more fields.

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Press PgDn for more; the highlighted letter of choice; or R to resume your work.

## FIELDS

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|               | Short Name | Long Name                           |
|---------------|------------|-------------------------------------|
| Fire Hazards: | FH01       | Flash Point                         |
|               | FH02       | Flammable Limits in Air             |
|               | FH03       | Fire Extinguishing Agents           |
|               | FH04       | Extinguishing Agents Not to be Used |
|               | FH05       | Combustion Product Data             |
|               | FH06       | Behavior in Fire                    |
|               | FH07       | Ignition Temperature                |
|               | FH08       | Electrical Hazard                   |
|               | FH09       | Burning Rate                        |
|               | FH10       | Adiabatic Flame Temperature         |
|               | FH11       | Stoichiometric Air to Fuel Ratio    |
|               | FH12       | Flame Temperature                   |

Highlighted field is a limit field (explained on Screen 12).  
Press PgDn for more fields.

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Press PgDn for more; the highlighted letter of choice; or R to resume your work.

## FIELDS

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|                         | Short Name | Long Name                                     |
|-------------------------|------------|---|
| Chemical<br>Reactivity: | CR01       | Reactivity with Water                         |
|                         | CR02       | General Reactivity                            |
|                         | CR03       | Transportation Stability                      |
|                         | CR04       | Neutralizing Agents for<br>Acids and Caustics |
|                         | CR05       | Polymerization                                |
|                         | CR06       | Polymerization Inhibitors                     |
|                         | CR07       | Molar Ratio (Reactant to Product)             |
|                         | CR08       | Reactivity Group                              |

Highlighted field is a limit field (explained on Screen 12).  
Press PgDn for more fields.

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Press PgDn for more; the highlighted letter of choice; or R to resume your work.

## FIELDS

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|                       | Short Name | Long Name                          |
|-----------------------|------------|------------------------------------|
| Water Pollution:      | WP01       | Aquatic Toxicity                   |
|                       | WP02       | Water Fowl Toxicity                |
|                       | WP03       | Biological Oxygen Demand           |
|                       | WP04       | Food Chain Concentration Potential |
| Shipping Information: | SI01       | Grades of Purity                   |
|                       | SI02       | Storage Temperature                |
|                       | SI03       | Inert Atmosphere                   |
|                       | SI04       | Venting                            |

Press PgDn for more fields.

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Press PgDn for more; the highlighted letter of choice; or R to resume your work.

## FIELDS

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|                            | Short Name | Long Name  |
|----------------------------|------------|--|
| Hazard Assessment Code:    | HA01       | Hazard Assessment Code (Z)<br>(See Hazard Assessment Handbook) |
| Hazard Classification:     | HC01       | Federal Regulations Code                                       |
|                            | HC02       | NAS Rating Fire (F)  |
|                            | HC03       | NAS Rating Health - Vapor Irritant (V)                         |
| (continued on next screen) | HC04       | NAS Rating Health - Liquid or Solid Irritant (I)               |
|                            | HC05       | NAS Rating Health - Poisons (P)                                |
|                            | HC06       | NAS Rating Water Pollution - Human Toxicity (H)                |

For translation of codes used in a field, press Ctrl along with the letter in parentheses after the long field name, e.g. Ctrl and z. Highlighted fields are limit fields (explained on Screen 12).  
Press PgDn for more fields:

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Press PgDn for more; the highlighted letter of choice; or R to resume your work.



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|  | Short Name | Long Name  |
|--|------------|--|
| Hazard<br>Classification<br>(continued): | HC07       | NAS Rating Water Pollution -<br>Aquatic Toxicity (A) |
|  | HC08       | NAS Rating Water Pollution -<br>Aesthetic Effect (E) |
|  | HC09       | NAS Rating Reactivity - Other Chemicals (D)          |
|  | HC10       | NAS Rating Reactivity - Water (W)                    |
|  | HC11       | NAS Rating Reactivity - Self-Reaction (S)            |
|  | HC12       | NFPA Rating Health Hazard - Blue (B)                 |
|  | HC13       | NFPA Rating Flammability - Red (R)                   |
|  | HC14       | NFPA Rating Reactivity - Yellow (Y)                  |
|  | HC15       | NFPA Rating Other - White (X)                        |

For translation of codes used in a field, press Ctrl along with the letter in parentheses after the long field name, e.g. Ctrl and a. Highlighted fields are limit fields (explained on Screen 12). Press PgDn for more fields.

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Press PgDn for more; the highlighted letter of choice; or R to resume your work.

## FIELDS

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|  | Short Name             | Long Name                            |
|--|------------------------|--------------------------------------|
| Physical and<br>Chemical<br>Properties:<br><br>(continued on<br>next screen) | PC01                   | Physical State at 15 Deg C and 1 Atm |
|  | PC02                   | Molecular Weight                     |
|  | PC03                   | Boiling Point at 1 Atm               |
|  | PC33                   | Boiling Point in Kelvin              |
|  | PC04                   | Freezing Point                       |
|  | PC34                   | Freezing Point in Kelvin             |
|  | PC05                   | Critical Temperature                 |
|  | PC35                   | Critical Temperature in Kelvin       |
|  | PC06                   | Critical Pressure                    |
| PC07   | Specific Gravity       |                                      |
| PC08   | Liquid Surface Tension |                                      |

Highlighted fields are limit fields (explained on Screen 12). Press PgDn for more fields.

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Press PgDn for more; the highlighted letter of choice; or R to resume your work.

## FIELDS

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|  | Short Name | Long Name                              |
|--|------------|--|
| Physical and<br>Chemical<br>Properties<br>(continued): | PC09       | Liquid-Water Interfacial Tension       |
|  | PC10       | Vapor (Gas) Specific Gravity           |
|  | PC11       | Ratio of Specific Heats of Vapor (Gas) |
|  | PC12       | Latent Heat of Vaporization            |
|  | PC13       | Heat of Combustion                     |
|  | PC14       | Heat of Decomposition                  |
|  | PC15       | Heat of Solution                       |
|  | PC16       | Heat of Polymerization                 |
|  | PC25       | Heat of Fusion                         |
|  | PC26       | Limiting Value                         |
|  | PC27       | Reid Vapor Pressure                    |

Press PgDn for an explanation of limit fields.

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Press PgDn for more; the highlighted letter of choice; or R to resume your work.

## FIELDS

## Limit Fields

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The fields highlighted on the screens above are limit fields. Combined with other search terms, these are particularly useful for focusing or limiting a search. To search a limit field, use in or = and the field abbreviation, e.g. ha01=q or q in ha01 to search for a Hazard Assessment Code. Omitting the field label retrieves information from "free text" fields only. Certain numeric limit fields also use other special operators, for example:

```
hc02>2      finds the most fire-hazardous substances
pc33<293    finds chemicals with a boiling point less than 293 K
pc35<=400   finds substances with a critical temp. of 400 K or less
pc34>=150   finds substances with a freezing point of 150 K or more
pc33=278-293 finds substances which boil between 278 and 293 K
```

Press PgDn for more field searching information.

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Press PgDn for more; the highlighted letter of choice; or R to resume your work.

FIELDS

Special Fields

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**The Flash Point Field (FH01)**

Negative numbers must be searched by their absolute value, and are retrieved as part of positive number ranges. The minus sign has been separated from the number and placed in front of the unit, e.g. -34 deg F C.C. is displayed as 34 deg -F C.C. This is a limit field.

**The degrees Kelvin Fields (PC33, PC34, and PC35)**

These limit fields have been specially created for rapid retrieval by boiling point, freezing point or critical temperatures. Decimal numbers must be searched with decimal points and decimal places removed. The finer degrees Centigrade and Fahrenheit points are in neighboring fields.

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Type the highlighted letter of a choice; or R to resume your work.