

Safety Data Sheet per OSHA HazCom 2012

| Rev                                                                                                                                                                                                                                                          | ewed on 09/22/2010        |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------|
| 1 Identification                                                                                                                                                                                                                                             |                           |
| Product identifier                                                                                                                                                                                                                                           |                           |
| Product name: <u>4-Iodo-1-phenyI-1H-pyrazole</u>                                                                                                                                                                                                             |                           |
| Stock number: H32612<br>CAS Number:<br>23889-85-2                                                                                                                                                                                                            |                           |
| Relevant identified uses of the substance or mixture and uses advised against.<br>Identified use: SU24 Scientific research and development                                                                                                                   |                           |
| Details of the supplier of the safety data sheet<br>Manufacturer/Supplier:                                                                                                                                                                                   |                           |
| Alfa Aesar<br>Thermo Fisher Scientific Chemicals, Inc.<br>30 Bond Street                                                                                                                                                                                     |                           |
| Ward Hill, MA 01835-8099<br>Tel: 800-343-0660                                                                                                                                                                                                                |                           |
| Fax: 800-322-4757<br>Email: tech@alfa.com                                                                                                                                                                                                                    |                           |
| www.alfa.com<br>Information Department: Health, Safety and Environmental Department                                                                                                                                                                          |                           |
| Emergency telephone number:<br>During normal business hours (Monday-Friday, 8am-7pm EST), call (800) 343-0660. After normal business hours, call Carechem 24 at (866) 92                                                                                     | 8-0789.                   |
| 2 Hazard(s) identification                                                                                                                                                                                                                                   |                           |
| Classification of the substance or mixture in accordance with 29 CFR 1910 (OSHA HCS)                                                                                                                                                                         |                           |
| GHS07                                                                                                                                                                                                                                                        |                           |
| Skin Irrit. 2 H315 Causes skin irritation.<br>Eye Irrit. 2A H319 Causes serious eye irritation.                                                                                                                                                              |                           |
| STOT SE 3 H335 May cause respiratory irritation.<br>Hazards not otherwise classified No information known.                                                                                                                                                   |                           |
| Label elements                                                                                                                                                                                                                                               |                           |
| GHS label elements The product is classified and labeled in accordance with 29 CFR 1910 (OSHA HCS) Hazard pictograms                                                                                                                                         |                           |
|                                                                                                                                                                                                                                                              |                           |
| GHS07                                                                                                                                                                                                                                                        |                           |
| Signal word Warning<br>Hazard statements                                                                                                                                                                                                                     |                           |
| H315 Causes skin irritation.<br>H319 Causes serious eye irritation.                                                                                                                                                                                          |                           |
| H335 May cause respiratory irritation. Precautionary statements                                                                                                                                                                                              |                           |
| P261 Avoid breathing dust/fume/gas/mist/vapours/spray.<br>P280 Wear protective gloves/protective clothing/eye protection/face protection.                                                                                                                    | ing                       |
| P305+P351+P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rins<br>P304+P340 IF INHALED: Remove person to fresh air and keep comfortable for breathing.<br>P405 Store locked up. | ing.                      |
| P501 Dispose of contents/container in accordance with local/regional/national/international regulations.<br>WHMIS classification                                                                                                                             |                           |
| D2B - Toxic material causing other toxic effects                                                                                                                                                                                                             |                           |
| Ū                                                                                                                                                                                                                                                            |                           |
| Classification system<br>HMIS ratings (scale 0-4)                                                                                                                                                                                                            |                           |
| (Hazardou's Materials Identification System)                                                                                                                                                                                                                 |                           |
| HEALTH       1       Health (acute effects) = 1         FIRE       1       Flammability = 1         REACTIVITY       1       Physical Hazard = 1                                                                                                             |                           |
| Other hazards<br>Results of PBT and vPvB assessment                                                                                                                                                                                                          |                           |
| PBT: Not applicable.<br>vPvB: Not applicable.                                                                                                                                                                                                                |                           |
| 3 Composition/information on ingredients                                                                                                                                                                                                                     |                           |
| Chemical characterization: Substances<br>CAS# Description:                                                                                                                                                                                                   |                           |
| 23889-85-2 4-lodo-1-phenyl-1H-pyrazole                                                                                                                                                                                                                       |                           |
| 4 First-aid measures                                                                                                                                                                                                                                         |                           |
| Description of first aid measures<br>After inhalation<br>Supply track in the serviced provide artificial requiretion. Keen notions were                                                                                                                      |                           |
| Supply fresh air. If required, provide artificial respiration. Keep patient warm.<br>Seek immediate medical advice.<br><b>After skin contact</b>                                                                                                             |                           |
| After skin contact<br>Immediately wash with water and soap and rinse thoroughly.<br>Seek immediate medical advice.                                                                                                                                           |                           |
| After eye contact Rinse opened eye for several minutes under running water. Then consult a doctor.<br>After swallowing Seek medical treatment.                                                                                                               |                           |
|                                                                                                                                                                                                                                                              | (Contd. on page 2)<br>USA |
|                                                                                                                                                                                                                                                              |                           |

## Product name: 4-lodo-1-phenyl-1H-pyrazole (Contd. of page 1) Information for doctor Most important symptoms and effects, both acute and delayed No further relevant information available. Indication of any immediate medical attention and special treatment needed No further relevant information available. 5 Fire-fighting measures Extinguishing media Suitable extinguishing agents Carbon dioxide, extinguishing powder or water spray. Fight larger fires with water spray or alcohol resistant foam. Special hazards arising from the substance or mixture If this product is involved in a fire, the following can be released: Carbon monoxide and carbon dioxide Nitrogen oxides (NOx) Possibly Hydrogen cyanide (HCN) Hydrogen iodide (HI) Advice for firefighters **Protective equipment:** Wear self-contained respirator. Wear fully protective impervious suit. 6 Accidental release measures Personal precautions, protective equipment and emergency procedures Wear protective equipment. Keep unprotected persons away Ensure adequate ventilation Environmental precautions: Do not allow material to be released to the environment without proper governmental permits. Methods and material for containment and cleaning up: Ensure adequate ventilation. Prevention of secondary hazards: No special measures required. Reference to other sections See Section 7 for information on safe handling See Section 8 for information on personal protection equipment. See Section 13 for disposal information. 7 Handling and storage Handling Handling Precautions for safe handling Keep container tightly sealed. Store in cool, dry place in tightly closed containers. Ensure good ventilation at the workplace. Information about protection against explosions and fires: No information known. Conditions for safe storage, including any incompatibilities Storage Requirements to be met by storerooms and receptacles: No special requirements. Information about storage in one common storage facility: Store away from oxidizing agents. Store in the dark. Further information about storage conditions: Keep container tightly sealed. Store in cool, dry conditions in well sealed containers. Protect from exposure to light. Specific end use(s) No further relevant information available. 8 Exposure controls/personal protection Additional information about design of technical systems: Properly operating chemical fume hood designed for hazardous chemicals and having an average face velocity of at least 100 feet per minute. Control parameters Components with limit values that require monitoring at the workplace: Not required. Additional information: No data Exposure controls Personal protective equipment General protective and hygienic measures The usual precautionary measures for handling chemicals should be followed. Keep away from foodstuffs, beverages and feed. Remove all soiled and contaminated clothing immediately. Wash hands before breaks and at the end of work. Wash hands before breaks and at the end of work. Avoid contact with the eyes and skin. Maintain an ergonomically appropriate working environment. **Breathing equipment:** Use suitable respirator when high concentrations are present. **Protection of hands:** Impervious gloves Check protective gloves prior to each use for their proper condition. The selection of suitable gloves not only depends on the material, but also on quality. Quality will vary from manufacturer to manufacturer. **Penetration time of glove material (in minutes)** Not determined **Eye protection:** Safety glasses **Body protection:** Protective work clothing. 9 Physical and chemical properties Information on basic physical and chemical properties General Information Appearance: Form: Crystalline powder Color: White Not determined Not determined Odor: Odor threshold: pH-value: Not applicable. Change in condition Melting point/Melting range: Boiling point/Boiling range: Not determined Not determined Sublimation temperature / start: Flammability (solid, gaseous) Not determined Not determined

## Product name: 4-lodo-1-phenyl-1H-pyrazole

| Product name: 4-lodo-1-phenyl-1H-p                                                    | byrazole                                                                                                                        |                    |
|---------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------|--------------------|
|                                                                                       |                                                                                                                                 | (Contd. of page 2) |
| Ignition temperature:<br>Decomposition temperature:<br>Auto igniting:                 | Not determined<br>Not determined<br>Not determined.                                                                             |                    |
| Danger of explosion:                                                                  | Product does not present an explosion hazard.                                                                                   |                    |
| Explosion limits:<br>Lower:                                                           | Not determined                                                                                                                  |                    |
| Upper:                                                                                | Not determined                                                                                                                  |                    |
| Vapor pressure:<br>Density:                                                           | Not applicable.<br>Not determined                                                                                               |                    |
| Relative density                                                                      | Not determined.                                                                                                                 |                    |
| Vapor density                                                                         | Not applicable.<br>Not applicable.                                                                                              |                    |
| Evaporation rate<br>Solubility in / Miscibility with                                  |                                                                                                                                 |                    |
| Water:                                                                                | Not determined                                                                                                                  |                    |
| Partition coefficient (n-octanol/water)<br>Viscosity:                                 | . Not determined.                                                                                                               |                    |
| dynamic:                                                                              | Not applicable.                                                                                                                 |                    |
| kinematic:<br>Other information                                                       | Not applicable.<br>No further relevant information available.                                                                   |                    |
| 10 Stability and reactivity                                                           |                                                                                                                                 |                    |
| Reactivity No information known.                                                      | nended storage conditions                                                                                                       |                    |
| Thermal decomposition / conditions t                                                  | nended storage conditions.<br><b>o be avoided:</b> Decomposition will not occur if used and stored according to specifications. |                    |
| Possibility of hazardous reactions No<br>Conditions to avoid No further relevan       | dangerous reactions known                                                                                                       |                    |
| Incompatible materials:                                                               | Information available.                                                                                                          |                    |
| Oxidizing agents<br>Light                                                             |                                                                                                                                 |                    |
| Hazardous decomposition products:                                                     |                                                                                                                                 |                    |
| Carbon monoxide and carbon dioxide                                                    |                                                                                                                                 |                    |
| Nitrogen oxides<br>Possibly Hydrogen cyanide (HCN)                                    |                                                                                                                                 |                    |
| Hydrogen iodide (HI)                                                                  |                                                                                                                                 |                    |
| 11 Toxicological information                                                          |                                                                                                                                 |                    |
| Information on toxicological effects<br>Acute toxicity: No effects known.             |                                                                                                                                 |                    |
| LD/LC50 values that are relevant for d                                                | lassification: No data                                                                                                          |                    |
| Skin irritation or corrosion: Causes sl                                               | rin irritation.                                                                                                                 |                    |
| Eye irritation or corrosion: Causes se<br>Sensitization: No sensitizing effects known | nous eye irntation.<br>Dwn.                                                                                                     |                    |
| Sensitization: No sensitizing effects kno<br>Germ cell mutagenicity: No effects kno   | wn.                                                                                                                             |                    |
| Carcinogenicity: No classification data<br>Reproductive toxicity: No effects know     | on carcinogenic properties of this material is available from the EPA, IARC, NTP, OSHA or ACGIH.                                |                    |
| Specific target organ system toxicity                                                 | - repeated exposure: No effects known.                                                                                          |                    |
| Specific target organ system toxicity<br>Aspiration hazard: No effects known.         | - single exposure: May cause respiratory irritation.                                                                            |                    |
| Subacute to chronic toxicity: No effect                                               | ts known.                                                                                                                       |                    |
|                                                                                       | To the best of our knowledge the acute and chronic toxicity of this substance is not fully known.                               |                    |
| 12 Ecological information                                                             |                                                                                                                                 |                    |
| Toxicity<br>Aquatic toxicity: No further relevant inf                                 | ormation available.                                                                                                             |                    |
| Persistence and degradability No furth                                                | ner relevant information available.                                                                                             |                    |
| Bioaccumulative potential No further r<br>Mobility in soil No further relevant infor  |                                                                                                                                 |                    |
| Additional ecological information:                                                    |                                                                                                                                 |                    |
| General notes:<br>Do not allow material to be released to t                           | he environment without proper governmental permits.                                                                             |                    |
| Do not allow undiluted product or large of                                            | uantities to reach ground water, water course or sewage system.                                                                 |                    |
| Avoid transfer into the environment.<br>Results of PBT and vPvB assessmen             | f                                                                                                                               |                    |
| PBT: Not applicable.                                                                  |                                                                                                                                 |                    |
| vPvB: Not applicable.<br>Other adverse effects No further releva                      | ant information available.                                                                                                      |                    |
| 13 Disposal considerations                                                            |                                                                                                                                 |                    |
| Waste treatment methods                                                               |                                                                                                                                 |                    |
| Recommendation Consult state, local of<br>Uncleaned packagings:                       | or national regulations to ensure proper disposal.                                                                              |                    |
| Recommendation: Disposal must be m                                                    | ade according to official regulations.                                                                                          |                    |
| 14 Transport information                                                              |                                                                                                                                 |                    |
| Not a hazardous material for transportat                                              |                                                                                                                                 |                    |
| DOT, IMDG, IATA<br>UN proper shipping name                                            | None                                                                                                                            |                    |
| DOT, IMDG, IATA<br>Transport hazard class(es)                                         | None                                                                                                                            |                    |
| DOT, ADR, IMDG, IATA                                                                  |                                                                                                                                 |                    |
| Class                                                                                 | None                                                                                                                            |                    |
| Packing group<br>DOT, IMDG, IATA                                                      | None                                                                                                                            | (2)                |
|                                                                                       |                                                                                                                                 | (Contd. on page 4) |

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| Environmental hazards:                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | Not applicable.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
| Special precautions for user                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | Not applicable.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
| Transport in bulk according to Annex II of MARPOL73/78 and                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
| Transport/Additional information:<br>DOT                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | Not dangerous according to the above specifications.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| Marine Pollutant (DOT):                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | No                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
| 15 Regulatory information                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
| Safety, health and environmental regulations/legislation spec<br>GHS label elements The product is classified and labeled in acco<br>Hazard pictograms                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | <b>:ific for the substance or mixture</b><br>ordance with 29 CFR 1910 (OSHA HCS)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
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| GHS07                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
| P304+P340 IF INHALED: Remove person to fresh air and P<br>P405 Store locked up.<br>P501 Dispose of contents/container in accordance w<br>National regulations<br>This product is not listed in the U.S. Environmental Protection Age<br>to research and development only. This product must be used by<br>product must not be used for commercial purposes or in formulatio<br>SARA Section 313 (specific toxic chemical listings) Substance<br>California Proposition 65<br>Prop 65 - Chemicals known to cause cancer Substance is not listed.<br>Prop 65 - Developmental toxicity, Substance is not listed.<br>Prop 65 - Developmental toxicity, female Substance is not listed.<br>Information about limitation of use: For use only by technically<br>Other regulations, limitations and prohibitive regulations<br>Substance of Very High Concern (SVHC) according to the RE.<br>The conditions of restrictions according to Article 67 and Anr<br>market and use must be observed.<br>Substance is not listed. | <ul> <li>protection/face protection.</li> <li>protection.</li> <li>protection</li></ul> |
| information to ensure proper use and protect the health and safety<br>conformance with this Material Safety Data Sheet, or in combination                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | ther information gathered by them, and should make independent judgement of suitability of this<br>y of employees. This information is furnished without warranty, and any use of the product not in<br>ion with any other product or process, is the responsibility of the user.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
| Department issuing SDS: Global Marketing Department<br>Date of preparation / last revision 11/24/2015 / -<br>Abbreviations and acronyms:                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
| RID: Règlement international concernant le transport des marchandises dangereuses p<br>IATA-DGR: Dangerous Goods Regulations by the "International Air Transport Association<br>ICAO: International Civil Aviation Organization<br>ICAO-TI: Technical Instructions by the "International Civil Aviation Organization" (ICAO)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | chemin de fer (Regulations Concerning the International Transport of Dangerous Goods by Rail)<br>ion" (IATA)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| IMUG: International Maritime Code for Dangerous Goods<br>DOT: US Department of Transportation<br>IATA: International Air Transport Association<br>CAS: Chemical Abstracts Service (division of the American Chemical Society)<br>HMIS: Hazardous Materials Identification System (USA)<br>WHIMIS: Workolace Hazardous Materials Information System (Canada)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | par chemin de fer (Regulations Concerning the International Transport of Dangerous Goods by Rail)<br>ion" (IATA)<br>))                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
| WHMIS: InizariOus Materials Identification System (Canada)<br>WHMIS: Workplace Hazardous Materials Information System (Canada)<br>LC50: Lethal concentration, 50 percent<br>LD50: Lethal cose, 50 percent<br>vPvB: very Persistent and very Bioaccumulative<br>ACGIH: American Conference of Governmental Industrial Hygienists (USA)<br>OSHA: Occupational Safety and Health Administration (USA)<br>NTP: National Toxicology Program (USA)<br>IARC: International Agency for Research on Cancer<br>EPA: Environmental Protection Agency (USA)                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
| NTP: National Toxicology Program (USA)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |